Grange Walk,
Bermondsey Spa,
Southwark, SE16 3QN
An Archaeological
Evaluation (Phase 2)

GGK 10

May 2013

PRE-CONSTRUCT ARCHAEOLOGY

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GRANGE WALK, BERMONDSEY SPA, SOUTHWARK, SE16 3QN
AN ARCHAEOLOGICAL EVALUATION (PHASE 2)

Site Code:	**GGK 10**
Central NGR:	**TQ 3379 7923**
Local Planning Authority:	**London Borough of Southwark**
Planning Reference:	
PCA report number:	**R11420**
Commissioning Client:	**United Housing Limited**
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1 ABSTRACT

This report details the result of the 2nd phase of an archaeological investigation on land at Grange Walk, Bermondsey Spa, London Borough of Southwark SE16 (Figure 1), undertaken by Pre-Construct Archaeology Ltd. on behalf of United House. The project was managed by Peter Moore and supervised by the author, both of Pre-Construct Archaeology Ltd., and monitored by Dr. Christopher Constable on behalf of the London Borough of Southwark. The post-excavation reporting was managed by Frank Meddens of PCA Ltd.

PCA carried out a Phase 1 archaeological evaluation in December 1012 (Fairman 2010) consisting of two test trenches which were excavated to the west of George Tingle House (Trench 1) and to the north of Alfred Salter House (Trench 2) (Figure 2). The results of the Phase 1 archaeological evaluation are summarized below:

- Natural deposits were only observed in the base of Trench 2. These comprised coarse sand and gravels, which exhibited a general northern inclination. Natural scouring was evident towards the south and gravels were subsequently overlain by alluvial deposits.
- No firmly identified evidence for Roman or medieval activity was identified in the investigations. Both trenches however revealed extensive evidence for post-medieval development of the area. Trench 1 exposed numerous tanning pits pertaining to the Grange Mill tannery, established during the late 19th century and Trench 2 exposed part of the basement of the former Bermondsey Town Hall, similarly constructed during the late 19th century. The latter trench also exposed a section of the early/mid 20th century cobbled road surface, denoted cartographically as 'Vestry Yard'.
- The lack of disturbance to natural horizons and alluvium in the north of Trench 2 suggests this area may have archaeological potential for future works, particularly for evidence of prehistoric activity.

Natural sands and gravels were recorded from an uppermost level of 1.83m OD in the north part of the site (Trench 4/ Area of Excavation 1). In the southern part of the site the natural sands and gravels were found at 1.53m OD (Trench 8). In Excavation Areas 1 and 2 and in Trench 3 the upper horizon of this deposit had increasingly component of clay and in Area of Excavation 1 the water table was found approximately at 1.70-1.80m OD. As a result the natural sands and gravels exhibited a general downward northern inclination which coincides with the levels of alluvial clays and sands and the water table.

The surface of the natural (Phase 1) recorded at the site is consistent with the level recorded at the Lanarca Works (Bright, 2008), located immediately to the west and at the former Abbey Street Children's Home where it was noted at 1.85m OD and 1.95m OD respectively.

The investigation revealed evidence of prehistoric activity (Phase 2) localized in the northern part of the site. In the Area of Excavation trench 1 two intercutting pits produced pottery sherds dated to the late Bronze Age-Middle Iron Age. One east to west orientated ditch, in Trench 4, was also dated to the prehistoric period as it was sealed by a layer which included a sherd of pottery dated to the Middle Bronze Age- Late Iron Age.

No features or horizons were identified as being Roman or medieval in date. However, a small quantity of residual abraded Roman ceramic building material and daub were collected from post-medieval deposits. This is to be expected given the proximity of the site to Roman dumps in the Bermondsey Abbey area. It is likely that alluvial events associated with the Neckinger, cultivation, and subsequent redevelopment and industrialization of the area truncated most of the early horizons which may have been present here originally.

The investigation revealed evidence of an alluvial event dated to the early post-medieval period (Phase 3). This phase represents the formation of a substantial and thick deposit of alluvium observed across the site. Finds dated to the Roman and medieval periods together with artefacts dated to the medieval and post-medieval periods were retrieved from this layer.

Evidence for agricultural or horticultural activity was identified at the site (Phase 4a). Horticultural cut features and post medieval ditches were observed in Area of Excavation 1, 2 and in Trenches 6 and 8 where finds dating to the mid to late 18th century were also recovered. Rocque's map of 1746 shows that the site lay within an area which was in use as agricultural land. The finds collected from this horizon are consistent with an 18th century formation date.

The investigation revealed significant evidence of post-medieval activity across the site (Phase 4b). Horn core lined pits were observed in Trenches 3 and 4. Similar pits lined with horn cores excavated on other sites in Bermondsey have been interpreted as tanning pits (McKinley 2006, p91). However, there is no evidence to suggest that the pits encountered in the study site were directly associated with the tanning process as they were too small and the horn core lining potentially would have damage the hides (Kevin Reilly personal comment 2013), although the horn cores in themselves are likely to have been a by product of the tanning process.

Evidence of structures directly associated with the tanning process was identified during the archaeological investigation (Phase 4c). Timber and brick lined pit structures found in Trenches 3 and 8 were interpreted as liming and tanning pits associated with the 19th century Grange Tannery complex (Appendix 4 Plate 5-8). Similar pits to the ones encountered at the study site have been excavated elsewhere in Bermondsey and interpreted as liming pits (Heard 2000, pp141-3) Cartographic evidence demonstrates that the area known as The Grange Tannery as depicted in a print of 1876 (Appendix 4 Plate 11) started being developed from the late 18th and early 19th century

on. The Grange Tannery, originally run by Samuel Barrow and Brothers, later came under the management of Barrow, Hepburn and Gale, one of the largest firms in the area.

Evidence of structures dated to the post-medieval period was observed in Trenches 5, 6 and 8 (Phase 5). Concrete and brick foundations exposed in Trench 5 were interpreted as part of the footprint of a school present on the 1914-16 OS map. In the southeast corner of the site, in Trench 8, concrete and brick foundations were located within a large southeast-northwest orientated building labelled as a “Refuse Destructor” on the 1914-16 OS map. In Trench 6 located in the western section of the site a rectangular brick structure was interpreted as a later brick lined tanning pit built immediately to the south of the L shaped structure labelled as “Tannery” on the 1914-16 OS map.

2 INTRODUCTION

Pre-Construct Archaeology Ltd. conducted an archaeological investigation of land at Grange Walk, Bermondsey Spa, London Borough of Southwark, in advance of the redevelopment of the site. The Written Scheme of Investigation (Moore, 2012) detailed the methodology by which the Phase 2 archaeological investigation was undertaken. The WSI followed the English Heritage (GLAAS 2009) and the Institute of Field Archaeologist (IFA, 1993) guidelines.

The archaeological investigation was carried out in three different stages: the first between 18th of June and the 13th of July 2012; the second between the 14th and 17th of August 2012, and the third between the 11th and 14th of September 2012.

The subject site occupies a plot of land bordered by Grange Walk to the north, Neckinger to the east, the Lanarca Works to the west and Spa Road to the south. The site was occupied by structures in the process of demolition at the time of the evaluation.

The site is located within an Archaeological Priority Zone as defined by the London Borough of Southwark in the Southwark Plan (2007). The site does not contain, nor is adjacent to any Scheduled Ancient Monuments.

The central National Grid Reference of the site is TQ 3379 7923.

The site was assigned the code GGK 10. The complete archive comprising written, drawn and photographic record and excavated finds materials will be deposited with the London Archaeological Archive and Research Centre (LAARC).

The archaeological investigation, commissioned by United House, was monitored by Christopher Constable on behalf of the London Borough of Southwark, project managed by Peter Moore and Frank Meddens and supervised by the author.

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Figure 1
Site Location
1:10,000 at A4

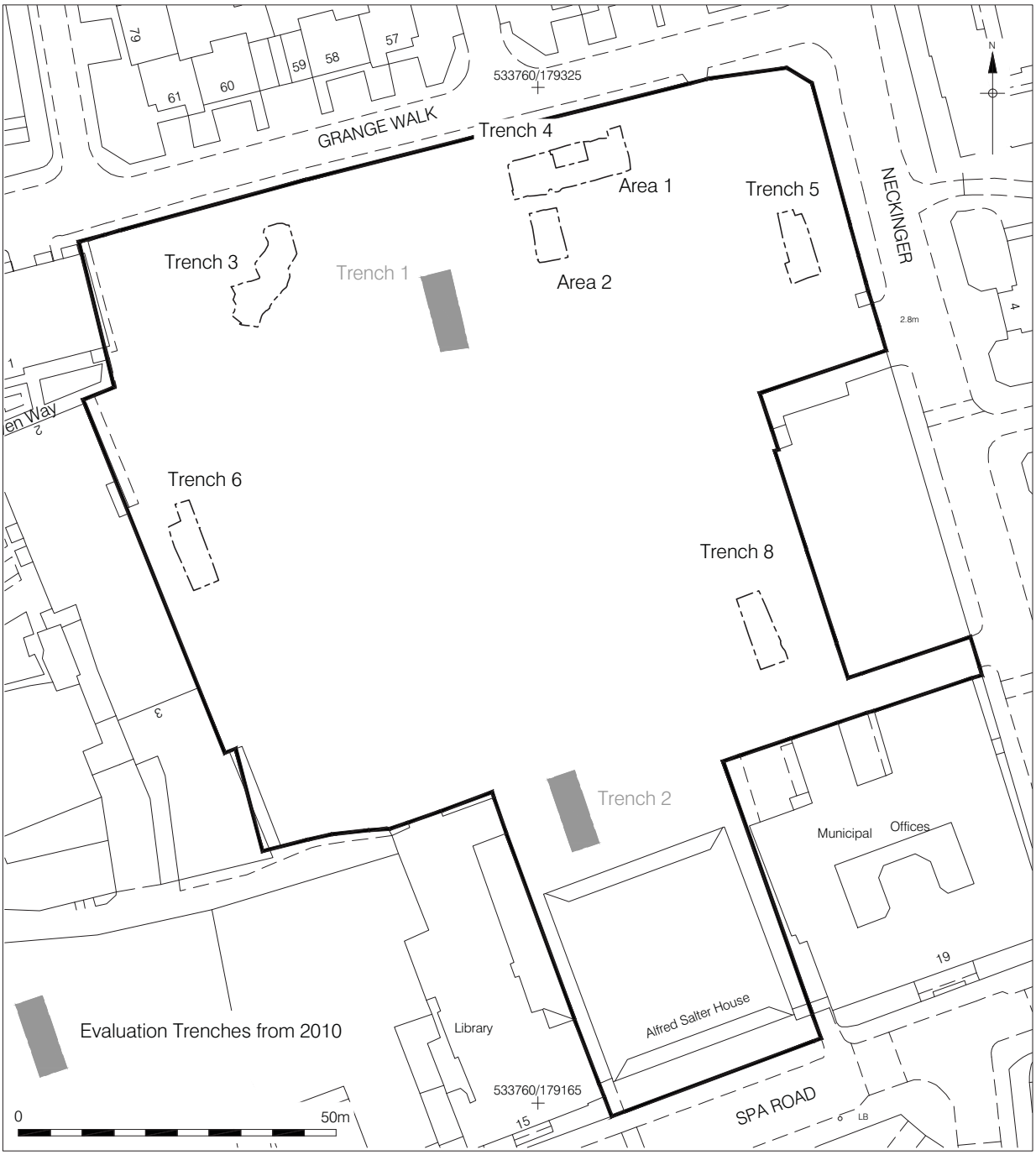

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Figure 2
Trench Location
1:1,000 at A4

3 PLANNING BACKGROUND

In March 2010 the Department for Communities and Local Government issued Planning Policy Statement 5: Planning for the Historic Environment (PPS5), which provides guidance for planning authorities, property owners, developers and others on the investigation and preservation of archaeological remains. PPS5 has since been replaced by section - 12 'Conserving and Enhancing the Historic Environment', of the National Planning Policy Framework.
In short, government policies provide a framework which:

- Protect Scheduled Ancient Monuments
- Protect the settings of these sites
- Protect nationally important un-scheduled ancient monuments
- Has a presumption in favour of in situ preservation
- In appropriate circumstances, requires adequate information (from field evaluation) to enable informed decisions
- Provides for the excavation and investigation of sites not important enough to merit in situ preservation

In considering any proposal for development, the local planning authority will be mindful of the policy framework set by government guidance, in this instance PPS 5, of existing development plan policy and other material considerations.

Field evaluation should provide information of sufficient quality and detail that reasoned and informed decisions may be made with regard to preservation, or not, of buried archaeological material, and therefore facilitate the compilation of sympathetic foundation designs.

The objectives of field evaluations are, as defined by English Heritage:

- To determine, as far as is reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by proposed redevelopment. An adequate representative sample of all areas where archaeological remains are potentially threatened should be studied, and attention should be given to sites and remains of all periods (inclusive evidence of past environments).
- Where applicable the evaluation should also determine the relationship of any above ground structures to the surviving archaeological deposits below ground. Where such a relationship is demonstrable, the evaluation should encompass the character, condition, significance, and quality of the above ground remains on the same basis as those below.

- The evaluation should also seek to clarify the nature and extent of the existing disturbance and intrusions (such as basements) and hence the degree of survival of buried archaeological deposits and structures of archaeological significance.

Archaeology in Southwark and Unitary Development Plan

3.1.1 The study aims to satisfy the objective of the London Borough of Southwark, which fully recognises the importance of the buried heritage for which they are custodians. The Borough's 'Southwark Plan' (adopted in July 2007), and the draft Archaeology Policy, contains policy statements in respect of protecting the buried archaeological resource.

3.1.2 The relevant Strategic Development Plan framework is provided by the London Plan, published February 2004. It includes the following policy of relevance to archaeology within central London:

Policy 4B.15 Archaeology

The Mayor, in partnership with English Heritage, the Museum of London and Boroughs, will support the identification, protection, interpretation and preservation of London's archaeological resources. Boroughs in consultation with English Heritage and other relevant statutory organisations should include appropriate policies in their UDPs for protecting scheduled ancient monuments and archaeological assets within their area.

3.1.3 The proposed development of the site is subject to the Council's Archaeology Policies and justifications:

Policy 3.19 Archaeology

Planning applications affecting sites within Archaeological Priority Zones (APZs), as identified in Appendix 8, shall be accompanied by an archaeological assessment and evaluation of the site, including the impact of the proposed development. There is a presumption in favour of preservation in situ, to protect and safeguard archaeological remains of national importance, including scheduled monuments and their settings. The in situ preservation of archaeological remains of local importance will also be sought, unless the importance of the development outweighs the local value of the remains. If planning permission is granted to develop any site where there are archaeological remains or there is good reason to believe that such remains exist, conditions will be attached to secure the excavation and recording or preservation in whole or in part, if justified, before development begins.

Reasons:

Southwark has an immensely important archaeological resource. Increasing evidence of those people living in Southwark before the Roman and medieval period is being found in the north of the borough and along the Old Kent Road. The suburb of the Roman

provincial capital (Londinium) was located around the southern bridgehead of the only river crossing over the Thames at the time and remains of Roman buildings, industry, roads and cemeteries have been discovered aver the last 30 years. The importance of the area during the medieval period is equally well attested both archaeologically and historically. Elsewhere in Southwark, the routes of Roman roads (along the Old Kent Road and Kennington Road) and the historic village cores of Peckham, Camberwell, Walworth and Dulwich also have potential for survival of archaeological remains. PPG16 require((ed), and its subsequent follow up policies continue to require) the council to include policies for the protection, enhancement and preservation of sites of archaeological interest and their settings.

3.1.4 The study site falls within Archaeological Priority Zone 1A, as defined in the Southwark Plan, constituting 'Borough, Bermondsey and Rivers'.

3.1.5 The site of Bermondsey Spa comprised and 'Action Area' as a 'Priority Neighbourhood and Regeneration Area', and is therefore subject to policy 7.5 as defined within the Southwark Plan, strategic policy reference '20P'.

3.1.6 There are no Scheduled Ancient Monuments of Listed Buildings within the area of the development site. Two listed buildings, the Public Library and Town Hall however have Grade II status and bound the south-eastern and south-western limits of the subject site. The associated railings, boundary walls and lamp brackets of these properties are also listed.

3.1.7 In accordance with the conditions laid down in Southwark's LDF, a programme of evaluation by trial trenching (Moore, 2012) was designed and carried out in consultation with Dr Christopher Constable, the archaeological advisor for the London Borough of Southwark. Seven trenches were proposed within the footprint of the new development.

4 GEOLOGY AND TOPOGRAPHY

Introduction

4.1.1 The geological and topographical background information cited below has been taken from the Archaeological desk Based Assessment previously carried out by Pre-Construct Archaeology Ltd.

Geology

4.1.2 The British Geological Survey (BGS) of England and Wales (Sheet 270, South London), indicates that the site geological sequence consists of a basal geology of fluvial river terraces overlying a solid geology of Woolwich and Reading beds. The survey indicates that the boundaries for both solid and drift geology pass directly through the study site in a northeast southwest orientation.

4.1.3 Additional information regarding the underlying deposits and geology derives from adjacent archaeological intervention at the Lanarca Works (Bright, 2008). The excavation of a series of trial pits/bore holes and evaluation trenches here revealed natural Kempton Park Gravels at depths of between 0.80-0.90m OD. All trenches were sealed by significant made ground deposits extending to a maximum of 2.50m below ground level at approximately 1m-0.50m OD.

4.1.4 The site is c.750m south of the Thames and c.100m to the south of the projected course of the now lost Neckinger River.

Topography

4.1.5 The palaeo-topography of the Southwark and Bermondsey area is one of a series of sand and gravel eyots, dissected by channels and tributaries of the Thames and surrounded by mudflats. The conjectured model of prehistoric Southwark as proposed by Proctor and Bishop places the area at the northern periphery of the Bermondsey Eyot, and therefore liable to periodic flooding and scouring. The buried topography of the study site may therefore exhibit a southwards inclination.

4.1.6 The now lost Neckinger River is believed to have passed c.100m to the north of the site along Abbey Street, although former meandering of the river may have extended down present Neckinger Street (as suggested on 1921 Ordnance Survey Map). This may affirm an environmental investigation (Allen et al, 2005) which suggests the Neckinger to represent a former braided channel rather than a true tributary of the Thames.

4.1.7 The site is located on relatively level land, with a slight northern inclination, and it slopes from 3.21m OD in the south to 3.68m OD in the north.

5 ARCHAEOLOGICAL AN HISTORICAL BACKGROUND

Unless referenced otherwise, the archaeological and historical background information cited below has been taken from the Archaeological Desk Based Assessment (Fairman 2010) previously completed out by Pre-Construct Archaeology Ltd.

PREHISTORIC

5.1.1 The site is located on the northern periphery of the Bermondsey Eyot, one of a series of sand and gravel islands bisected by channels and tributaries of the Thames. The marshy environment would have encouraged ribbon development along the firmer ridges of higher ground, and the area is known to have been exploited from at least the Mesolithic period onwards.

5.1.2 Numerous archaeological interventions have taken place within the immediate vicinity of the subject site. These have identified ditches, pits and cultivated soils dating to the Iron Age, in addition to traces of the former Neckinger River which was not fully backfilled until the 18th century.

5.1.3 Investigations on the Horsleydown eyot to the north have yielded significant evidence for prehistoric exploitation and palaeoenvironmental data. These interventions have revealed that prehistoric foreshore locations, as the study site is expected to have been, can be utilized as important indicators of environmental change. Furthermore, despite frequent flooding episodes, even the sporadic visitation of marginal areas has potential to leave significant archaeological recoverable traces.

ROMAN

5.1.4 The majority of archaeological features encountered in the immediate vicinity pertaining to the Roman period, relate to ditches, pits or undesignated linear features. These suggest that at this time, the site was likely to have lain within open or cultivated fieldsystem. The Bermondsey Eyot is believed to have been the location of a Romano-British settlement, possibly in the form of a village or farmstead. Domestic refuse pits recorded along Grange Road, and contemporary pottery within cultivation soils encountered along Spa Road, support the notion of occupation within the area.

5.1.5 The closest Roman road to the site is Watling Street, which passes c.600m to the south. The majority of settlement at this time had their focus on this thoroughfare.

SAXON

5.1.6 There is no evidence for the Saxon period in the vicinity of the site.

5.1.7 The name of Bermondsey is believed to be a reference to a Saxon landowner or lord 'Beomund's eye' (island). The suffix 'ey' indicates water, and is associated with the borough's topography as an island within marshes and a former prehistoric eyot. The Millstream and Neckinger were among the more important watercourses at this time, which left Bermondsey prone to repeated flooding and inundation at high tides. These conditions may have discouraged permanent settlement.

MEDIEVAL

5.1.8 Medieval Southwark comprised five autonomous Manors; the smallest was known from the 14th century as 'Guidable Manor' and belonged to the Crown. The westernmost third of this formed the Parish of St. Mary Magdalene, which included the area of the study site.

5.1.9 The main area of development during the medieval period lay in close proximity to Bermondsey Abbey which could be found c.300m west of the subject site. The former farmhouse belonging to the Abbey was known as the 'Grange' and lay to the immediate southwest of the site. Modern road names such as 'Grange Road' and 'Grange Walk' testify to this.

5.1.10 Trade and industry flourished in the area. By the late 14th century, residents of the Horsleydown and Bermondsey areas are listed as being engaged in tanning, an industry that proliferated in the centuries to come. The majority of the surrounding area however, is likely to have comprised open fields and farmland at this time.

POST-MEDIEVAL

5.1.11 Southwark underwent increasing development and population increases throughout the 16th and 17th centuries. One of the primary industries to develop was tanning; the location offered cheap land, in close proximity to Cattle markets and sources of oak bark, plus a plentiful water supply. The leather industry was particularly concentrated around Bermondsey Street, the Grange and Long Lane. By the late 18th century, of the 15 tanners listed in a London trade directory, all were based in Bermondsey.

5.1.12 Up until the 19th century, the tanner would have lived in close proximity to the yard, in small houses or tenements. The tanning process was a lengthy one, with the thickest hides requiring years of immersion in the pits, and this process consumed large amounts of water. The wet conditions and noxious smells made them hazardous places. An average tan yard in 1710 would have comprised 41 pits, a bark barn, drying shed, kiln house, stable, hayloft, ash-hole, beam house and dwelling house.

5.1.13 At least eleven tanneries are documented within a 250m radius of the site, using cartographic sources. Two examples, along Grange Walk and Grange Yard are documented within the site itself to the northwest and south respectively.

5.1.14 There is good cartographic evidence for the study site and the surrounding area from the late 18th century onwards. This shows the site as part of the Abbey Grange complex, within open ground until the late 19th century when the entire site and immediate vicinity was transformed into a network of new streets, residential terraced housing and numerous industrial tanning plots. The residential blocks of Lanarca and George Tingle House appeared to the north from 1921 and 1951 respectively and remained until the start of demolition between 2011 and 2012. Around 1914-16 the single residential terrace in the centre of the site was demolished, the remainder was occupied by various industrial buildings, and remained so until the start of the demolition between 2011 and 2012.

5.2 ARCHAEOLOGICAL METHODOLOGY

In accordance with the Written Scheme of Investigation (Moore 2012), seven evaluation trenches were arranged to investigate the underlying drift geology and the presence or absence of significant archaeological remains across the site. The research design aimed to address the following objectives:

- To determine the palaeotopography of the site.
- To determine the presence or absence of prehistoric activity.
- To determine the presence or absence of Roman activity.
- To establish the presence or absence of medieval activity, especially any related to the Abbey Grange.
- To establish the presence or absence of post-medieval activity, especially to do with the subsequent use of the Abbey Grange and any activity associated with the Civil War defences.
- To establish the past extent of past post depositional impacts on the archaeological resource.

Of the seven other proposed evaluation trenches, five were excavated. The table below details their dimensions, maximum depth and trench number:

Trench No.	Dimension	Orientation
3	17.41m long by 6m wide	southwest to northeast
4	13m long by 3m wide	southwest to northeast
5	11.15m long by 4.92m wide	southwest to northeast
6	13.51m long by 4.51m wide	southwest to northeast
8	11.80m long by 4.60m wide	southwest to northeast

The proposed location of evaluation Trenches 7 and 8 within the large basement near the southwest corner of the site resulted in the relocation of Trench 8 to the east, outside of the basement, and the abandonment of Trench 7. As a result Trenches 8 and 9 were joined up to form a single trench which was identified as Trench 8 (Figure 2).

In order to further investigate the archaeological features observed in the northeast corner of the site, evaluation Trench 4 was extended to the west, east and south resulting in a larger excavation area which was identified as Excavation Area 1 the dimensions of which were 20.47m by 6.40m. Immediately to the south of Excavation Area 1, was Excavation Area 2. This trench measured 8m north to south and 4.80m east to west.

The trenches were machine excavated to a maximum depth of 1.10m below ground surface, or to the top of the archaeological horizon. Where necessary, trenches were stepped to enable excavation to the top of natural horizons. Potential features were then hand cleaned and excavated.

Trenches were excavated using a 360º machine with a flat bladed ditching bucket, under the supervision of the attendant archaeologist. Once recorded, the trenches were backfilled with the material removed from them.

One or more representative sample sections, each at least 2.5m wide, were cleared and recorded in each Trench or Excavation Area. The base of each trench was also hand-cleaned before recording, along with any archaeological features. The latter were half sectioned or slotted in order to obtain dating evidence prior to recording.

The recording systems employed during the evaluation were fully compatible with those most widely used in London; that is those developed out of the Department of Urban Archaeology Site Manual, now published by the Museum of London Archaeological Service (MoLAS 1994). Individual descriptions of all archaeological strata and features excavated and exposed were entered onto pro-forma recording sheets. All plans and sections of archaeological deposits were at a scale of 1:20 as appropriate and the sections at 1:10. The OD heights of all principal strata were calculated and indicated on the relevant plans and sections. A full photographic record of the investigation was prepared, including both black and white and colour transparencies on 35mm film.

Levels were taken from Temporary Bench Marks established adjacent to each trench. These were verified using a high precision GPS instrument, with the values of 3.40m OD for Trench 3 and Excavation Area 1 and 2, 3.48m OD for Trench 4, 3.14m OD for Trench 6 and 2.71m OD for Trench 8. The archaeological features observed in Trench 5 were recorded using a GPS piece of equipment.

6 THE ARCHAEOLOGICAL PHASE DISCUSSION

Phase 1: Natural (Figures 16, 17 and 18)

6.1.1 The earliest natural geological horizon encountered consisted of a mid yellowish red sandy gravel found in all evaluation Trenches and Areas of Excavation. In Excavation Areas 1 and 2 and in Trench 3 the upper horizon of this deposit had an increasing fraction of clay. The table below summarized their contexts and the upper level that they were encountered at:

Context no.	Evaluation Trench no.	Area of Excavation	Section No.	Highest Level
25	5		4	1.18m OD
43	4	1	7	1.83m OD
176	4	1		1.68m OD
177	4	1		1.65m OD
185	8		12	1.53m OD
222	6		14, 16	1.71m OD
225	4	1	6	1.45m OD
226	4	1	8	1.81m OD
227	3		9, 10	1.57m OD
228		2	11	1.74m OD

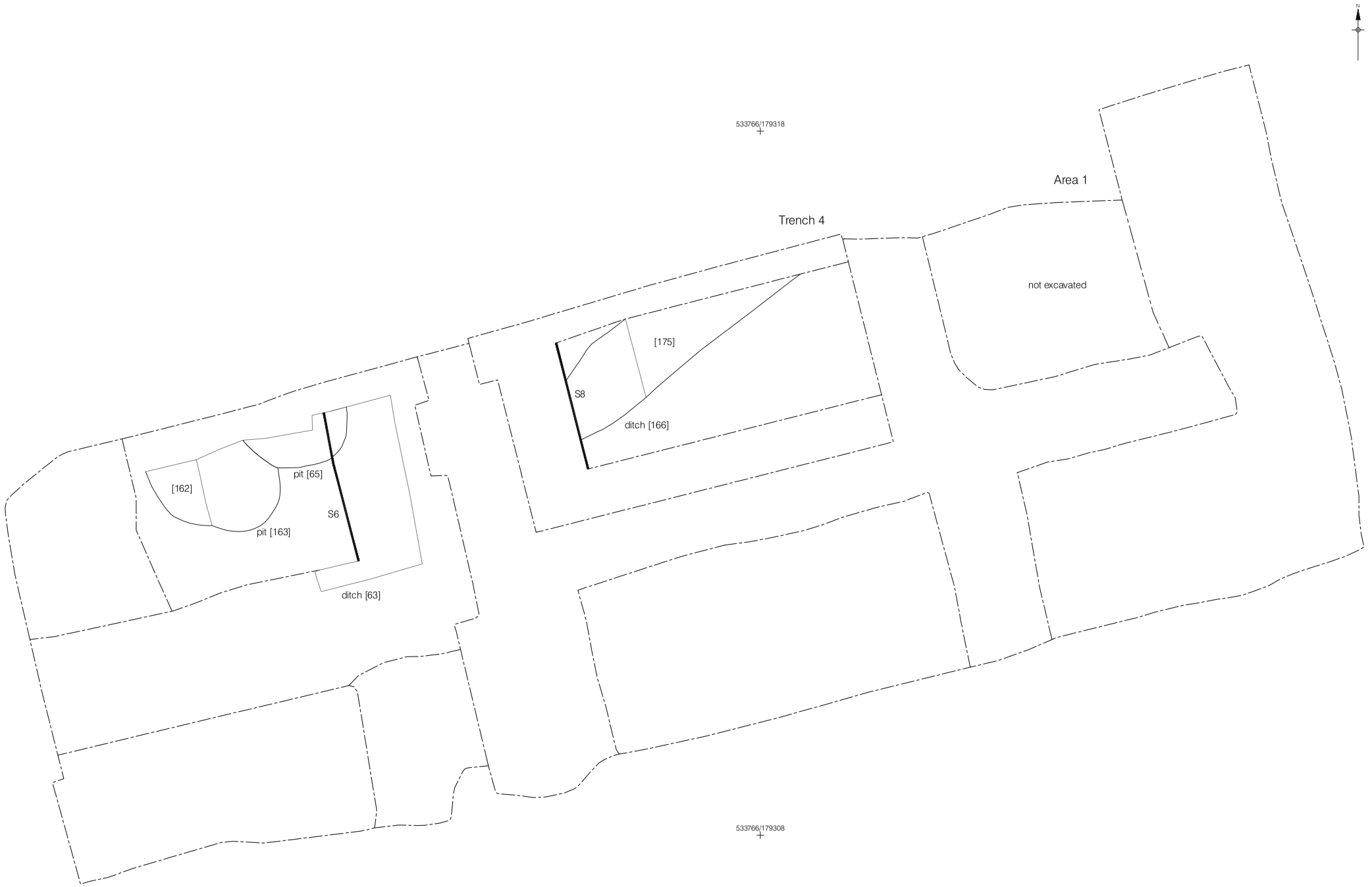
The upper level of the natural sandy gravel recorded in the archaeological investigation, was at between 1.83m OD and 1.53m OD on the north and south sides of the site respectively. The natural was relatively level if we take into consideration medieval and post-medieval truncations associated with agricultural and industrial activity taking place across the area.

6.1.1.1 The level of the natural is also consistent with that recorded at the Lanarca Works, immediately to the west and at the former Abbey Street Children's Home where it was identified at 1.85m OD and 1.95m OD respectively.

Phase 2: Prehistoric (Figure 3)

6.1.2 Natural sandy gravel [225], in the western half of Evaluation Trench 4 / Area of Excavation 1, was truncated at 1.39m OD by an ovoid undated, possibly prehistoric pit cut [163]. This measured 1.84m north to south, by 1.26m east to west, and was 0.41m deep; it extended beyond the limit of excavation to the north and had sides with a sharp break of slope at the top falling sharply toward a concave base. This pit was filled with mid light reddish brown fine sand silt [162] with small to medium rounded pebbles and sub angular pebble inclusions and did not produce any dating evidence. However, its interpretation as a prehistoric pit was based on its stratigraphic position in relation to the other early archaeological deposits.

6.1.3 Fill [162] in turn was truncated by ovoid pit [65] which measured 1.54m north south, 0.68m east to west and was 0.55m deep. The sides of this cut [65] had a sharp break of slope at the top and fell nearly vertically to merge gently with base which appeared to be



0 2m

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Figure 3
Phase 2: Prehistoric
Trench 4/ Area 1
1:50 at A3

concave but it was hardly seen as it disappeared in section. This pit had a fill of mid reddish brown fine sandy silt [64] (Figure 16 section 6) with occasional charcoal flecks and small rounded and angular pebbles. This context contained pot sherds dating to the late Bronze Age - Middle Iron Age.

6.1.4 Fill [64] was truncated to the south, at 1.31m OD, by a north east to south west orientated ditch cut [63]/[166]. This ditch was recorded in sections 6 and 8 located to the west and east respectively of a modern north to south orientated concrete foundation (Figure 16). Ditch cut [63]/[166] had an overall length of 7.50m northeast to southwest and maximum width of 2.30m. The ditch had fills comprising of soft/friable light red brown silty sand [175] and [62] to the east and to the west respectively. Context [62] produced sherds of pottery probably dating to the late Bronze Age - Middle Iron Age. The base of the ditch was recorded at 1.49m OD to the east and at 1.29m OD to the west as it sloped downward from the northeast to the southwest where the feature was substantially wider.

6.1.5 The ditch fill [175] was sealed by mid brownish grey silt clay layers [164] to the east (Figure 16 section 8). Layer [164] was found at 1.66m OD, measured 0.98m east to west and was 0.34m thick. It produced pottery dated to the Middle Bronze Age / Late Iron Age. Environmental sample <17>, taken from layer [164] included a few fragments of charcoal and one small fragment of daub. This layer was interpreted as part of a flooding event dated to the late Iron Age period.

6.1.6 In Trench 5 natural [25] (see Phase 1, paragraph 7.1.1) was sealed at 1.65m OD by a mid yellowish brown silty sand layer [24] (Figure 16 section 4). This layer was about 0.5m thick, and was observed across Trench 5. It did not contain any dating evidence. It was interpreted as an alluvial layer of prehistoric date possibly the equivalent of layer [164] encountered to the west in Evaluation Trench 3/Area of Excavation 1.

Phase 3: Early Post-medieval (Figures 16 and 17)

6.1.7 Phase 3 represent the formation of a substantially thick deposit of alluvium observed across the study site. The table below summarize its contexts, dimensions, levels and section number:

Context	Evaluation Trench	Area of Excavation	Dimensions	Highest Level	Section
23	5		10m North-South, 2m East-West, 0.50m thickness	2.35m OD	4
42	4	1	3.42m East-West, 2.50m North-South, 0.49m thickness	2.18m OD	7
83	4	1	5.20 East-West,	2.15m OD	

Context	Evaluation Trench	Area of Excavation	Dimensions	Highest Level	Section
			2.60m North-South, 0.50m thickness		
130	3		9m Southwest-Northeast, 6.50m wide, 0.90m thickness	2.38m OD	9, 10
142	3		0.14m North-South, 1.30m East-West, 0.82m thickness	2.08m OD	9
145	3		0.22m North-South, 2.13m East-West, 0.86m thickness	2.08m OD	9
165	4	1	2.12m North-South, 4.52m East-West, 0.40m thickness	2.12m OD	
173		2	6.50m North-South, 3.20m East-West, 0.15m thickness	2.13m OD	11
229	4	1	0.65m East to West, 0.35m thickness	1.94m OD	6

Context [42] contained CBM dated to between AD 1450 and 1700 and pottery dated to AD 1720 - 1750. The pottery comprised post-medieval redware, Surrey/Hampshire white Border ware with yellow glaze and tinglazed ware. Context [83] produced CBM dated to between AD 1480 and 1900 and pottery dated to AD 1270-1350 and finally context [130] which contained abraded roman tile dated to AD 50-120. All contexts shown on the table above were interpreted as part of an alluvial deposit formed during the early post-medieval period prior to the development of the site in the 18th century.

Phase 4a: Post-medieval (Figures 4 – 8)

6.1.8 Phase 4a includes early post-medieval ditch cuts and agricultural features observed in Evaluation Trench 4 / Area of Excavation 1 and Evaluation Trenches 6 and 8.

6.1.9 In the Northeast part of the site, in Evaluation Trench 4 / Area of Excavation 1 (Figure 3), layer [229] (see Phase 2, paragraph 7.2.4) was truncated at 1.97m OD by an East-West orientated ditch cut recorded as [55]/[147]/[39] (see Figure 16 sections 6, 7 and 8). The feature was partially truncated by the concrete foundations of George Tingle House. It was 14.19m long, 1.74m wide and 0.55m deep (see plan of Trench 4 / Area of excavation 1 and Appendix 4 Plate 1). The ditch was filled with mid grey brown fine silt clay with frequent charcoal and CBM flecks and occasional flint pebbles inclusions. It was recorded as [54], [38], and [104]/[146]. Samples <16>, obtained from fill [146], contained abundant organic material such as charred and uncharred seeds (cereal grains) and mollusca. The residue produced a range of archaeological materials such as charcoal, animal bone, shell and burnt flint. The table below summarizes all contexts,

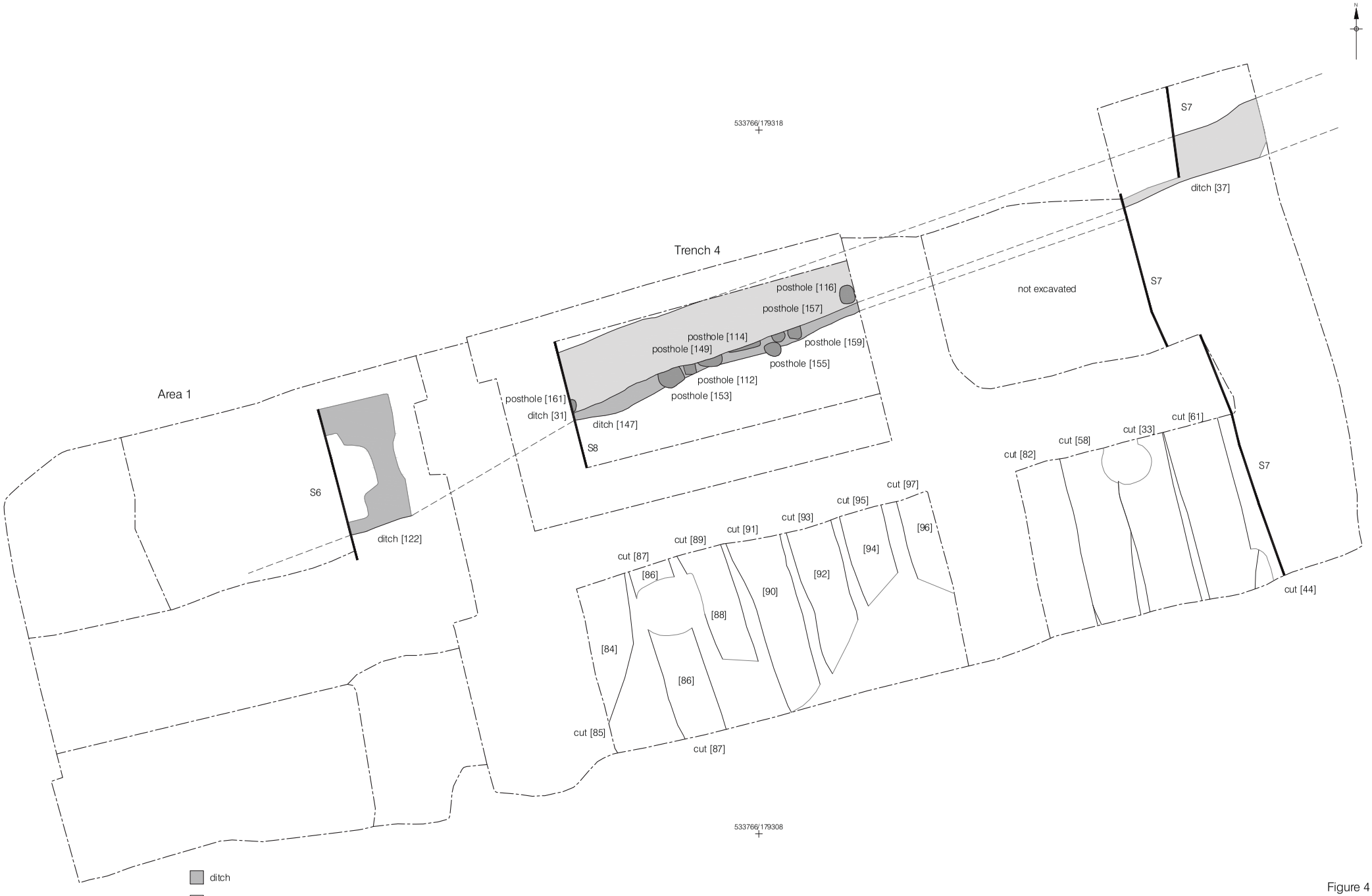

Figure 4
Phase 4a: Mid to Late 18th Century
Trench 4 / Area 1
1:50 at A3

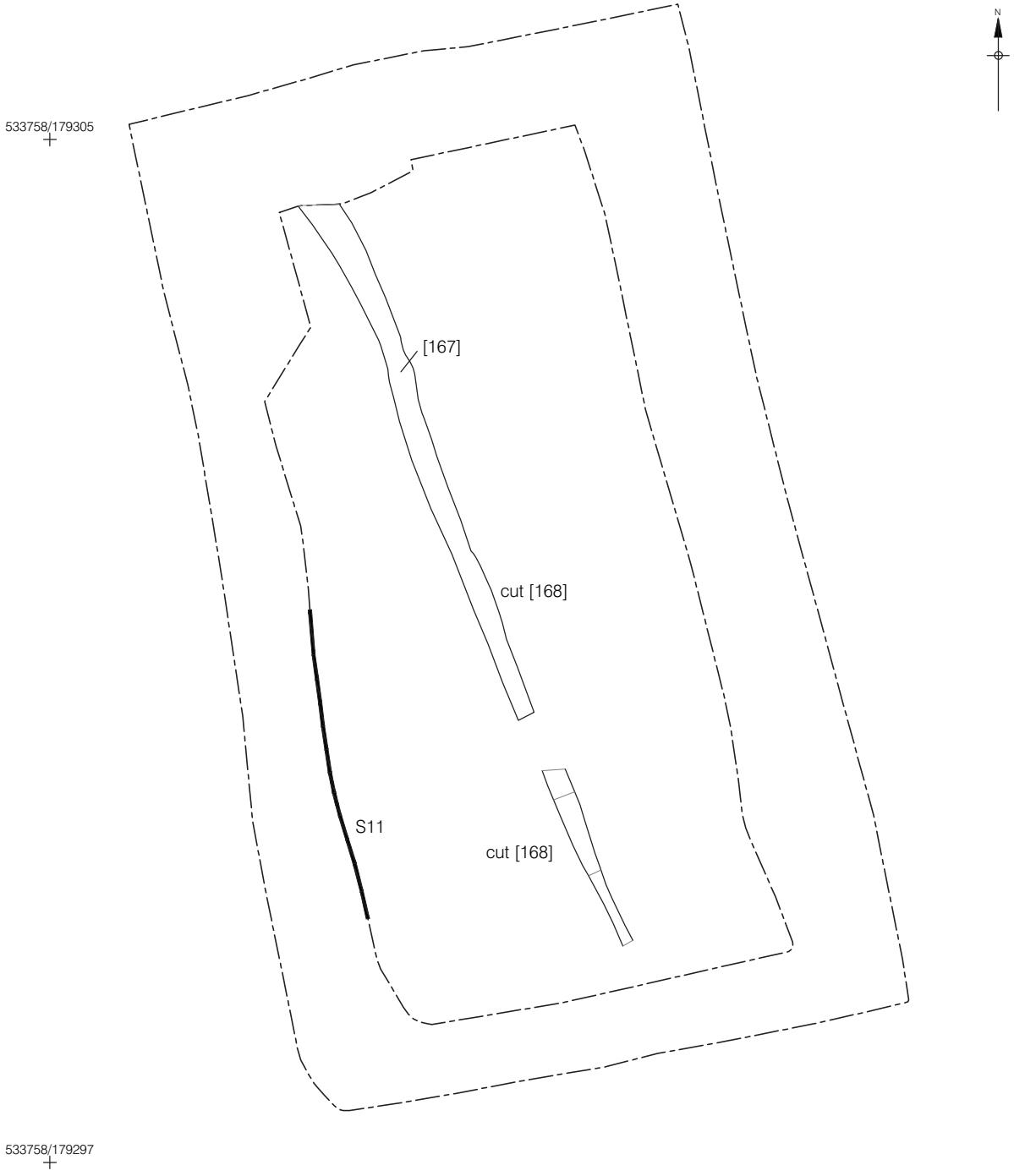

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Figure 5
Phase 4a: Mid to Late 18th Century
Area 2
1:50 at A4

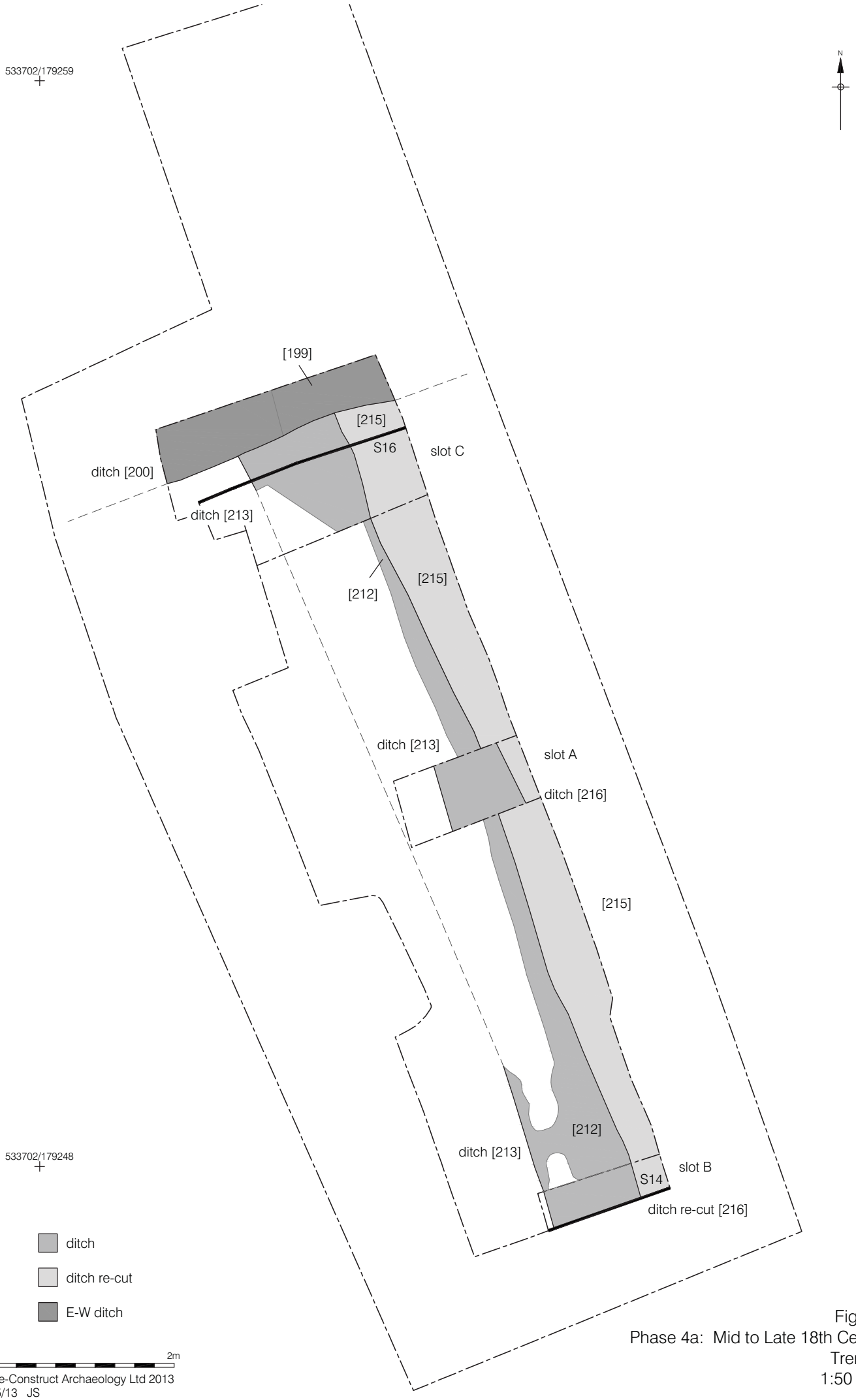

Figure 6
Phase 4a: Mid to Late 18th Century
Trench 6
1:50 at A4

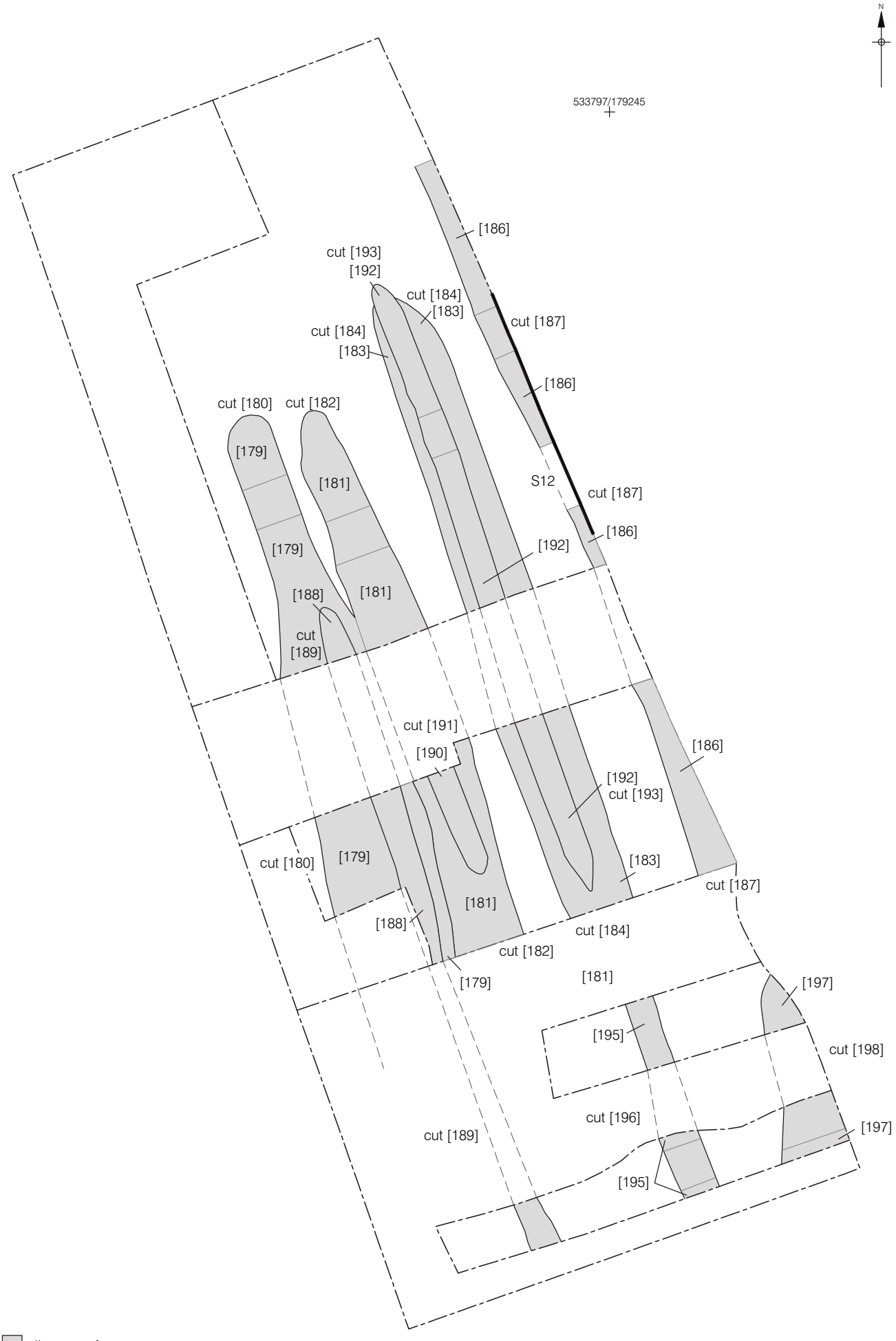

Figure 7
Phase 4a: Mid to Late 18th Century
Trench 8
1:50 at A4

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Figure 8
Phase 4a overlaid onto Rocque, 1746
1:625 at A4

dimensions, levels and section drawing numbers associated with the recording of this feature [55]/[147]/[39]:

Context No.	Dimension	Highest level	Lowest level	Section No.	Description
38	1.20m wide, 0.55m thick	2.27m OD	2.10m OD	7	Fill of cut [39]
39	1.20m wide, 0.55m deep	2.27m OD	1.61m OD	7	Cut filled by [38]
54	1.87m wide, 1.50m long, 0.52m thick	2.30m OD	2.06m OD	6	Fill of cut [55]
55	1.87m wide, 1.50m long, 0.52m deep	1.97m OD	1.45m OD	6	Cut filled by [54]
104/146	0.90m wide, 2.80m long, 0.50m thick	2.22m OD	1.60m OD	8	Fill of cut [147]
147	0.90m wide, 2.80m long, 0.50 deep	1.80m OD	1.39m OD	8	Cut filled by [104]/[146]

The ditch's fill produced CTP, pottery sherds and CBM dated 17th to early18th century.

6.1.10 Fills [104]/[146] were truncated to the south by a row of east to west orientated postholes which were recorded as structure [233] (see Appendix 4 Plate 1). The table below details all postholes associated with this structure:

Context No.	Dimension	Depth	Description
112	0.20m by 0.16m	0.20m	Rectangular posthole
114	0.54m by 0.28m	0.24m	Rectangular posthole
116	0.16m by 0.12m	0.80m	Sub-rounded posthole
149	0.40m by 0.30m	0.34m	Oval posthole
153	0.40m dia.	0.24m	Sub-rounded posthole
155	0.20m by 0.24m	0.15m	Sub-rounded posthole
157	0.18m by 0.20m	0.11m	Circular posthole
159	0.30m by 0.20m	0.13m	Rectangular posthole
161	0.20m by 0.08m	0.14m	Semi-circular posthole

The postholes were filled with mid to dark brown grey clayey silt with moderate charcoal flecks and very occasional small flint pebbles inclusions. Fills [111], [113] and [154] contained CTP, pottery, CBM, and glass dated to the early 17th to late 19th century. The top of the postholes were found at between 1.64m and 1.58m OD. Ditch cut [39]/[55]/[147] and structure [233] were interpreted as a drainage / boundary ditch with a wooden fence (south side of ditch observed only) probably associated with the agricultural activity carried out during the 18th century as shown on Rocque's map of 1746 (Figure 8).

6.1.11 After ditch cut [55]/[147]/[39] (see paragraph 7.5.2) had silted up completely, it was re-cut on a smaller scale, only to silt up again. Truncating fills [104], [38] and [54] (see paragraph 7.5.2) between 1.73m and 2.10m OD was north-south orientated re-cut [31]/[37]/[122] (Figure 16 sections 6, 7 and 8). This later ditch was on the same east to

west orientation of the earlier cut and was 14.19m long, 1.70m wide and 0.60m deep. It was filled with dark brownish grey clayey silt with moderate to frequent charcoal flecks, occasional small to medium size flint pebbles, fresh water snail shells and very occasional CBM fragments and flecks inclusions. The fills of this ditch were recorded as [30], [29], [36] and [121] and contained pottery sherds, CTP, glass and CBM dating between the 15th and 18th centuries. Fill [30] produced a possible knife handle with pistol-shaped end (sf 3) and fill [29] the base of a tinned copper-alloy composite button (sf 2) which may originally have had a cast decorated face (see Appendix 9). Sample <13> taken from context [30] produced frequent mollusc remains, charcoal and uncharred seeds along with occasional cereal grains. Charcoal, coal and iron were extracted from the residue which may represent the remnants of industrial processes taking place nearby (see Appendix 11). Occasional large animal bone fragments and a small limb bone from a field vole / or mouse (Rielly pers. comm. 2013) were also recovered.

6.1.12 On the west side of the site in Evaluation Trench 6 (Figure 6), a north-south orientated ditch cut was observed truncating the natural sandy gravel [222] (see Phase 1, paragraph 7.1.1) at 1.77m OD. It was recorded as [213] and measured 8.52m on length by 0.70m wide by 0.55m deep (Figure 6 and Appendix 4 Plate 2). This feature extended beyond the southern limit of excavation of the trench and was truncated to the north by the east-west orientated ditch cut [200]. It contained light yellowish brown sandy silt [212] with very frequent rounded and sub-angular flint pebble inclusions and a few animal bones but no artefacts. This cut was interpreted as a drainage / boundary ditch probably associated with the agricultural activity which prevailed during the 18th century as shown on Rocque's map of 1746 (Figure 8).

6.1.13 After drainage / boundary ditch [213] had silted up, it was in turn truncated at 1.80m OD by a north-south orientated ditch [216] which was 8.52m long, 0.65m wide, and 0.88m deep and extended beyond the southern limit of excavation of Evaluation Trench 6. Cut [216] was filled with dark yellowish brown sandy silt [215] with frequent sub-angular flint pebbles and produced a number of burnt flints. This ditch was interpreted as a later re-cut of earlier conduit [213] (Figure 18 section 14 and 16).

6.1.14 To the north, in Evaluation Trench 6 (Figure 6), an east-west orientated ditch cut [200] truncated fill [215] at 1.94m OD (Figure 6). Cut [200] was 2.46m long, 0.56m wide, and 0.28m deep had regular sides with a sharp break of slope at the top and gradual break of slope at the base which in turn was regular and flat, was exposed in plan or seen in section. This feature was filled with dark grey blackish sandy silt [199] with very frequent charcoal and chalk flecks and occasional oyster shells inclusions. Pottery, CBM, and CTP dated to AD 1450-1700 AD and residual Roman pottery dated to AD 50-400 were

retrieved from this fill. The colour, composition and inclusions of fill [199] seem to be very similar with the one recorded during the excavation of the fills of east-west ditch cut [31]/[37]/[122] in Evaluation Trench 4 / Excavation Area (see paragraph 7.4.3). East-west ditch cut [200] was interpreted as a drainage or boundary ditch associated with agricultural activity dating to the 18th century as shown on Rocque's map of 1746.

6.1.15 Sealing the alluvial deposits and the natural sandy gravel in Evaluation Trenches 5, 6 and 8 was a blackish-dark grey deposit interpreted as an agricultural soil recorded as [22], [214] and [194]. Layer [22], in Trench 5, was found at 2.60m OD and measured 10m north-south, 2m east-west and had a thickness of 0.45m (Figure 16 section 4). It produced CBM dated AD 1450-1700. Layer [214], in Trench 6 was only observed in north facing section 14 (Figure 18) at 2.07m OD where its dimensions were 0.20m east-west and 0.45m thick. Layer [194], in Trench 8, was found at 1.60m OD and measured 1.25m north-south, 1.60m east-west and was 0.20m thick. Contexts [214] and [194] remained undated.

6.1.16 Several parallel, linear cut features, all north-south orientated, were observed in Excavation areas 1 and 2 (see Appendix 4 Plate 3), and in Evaluation Trench 8 (Figure 7. The table below summarizes all their context numbers, dimensions and levels:

Context no.	Evaluation Trench	Area of Excavation	Dimension	Highest level
33	4	1	2.42m long, 0.74m wide, 0.25m deep	2.15m OD
44	4	1	2.50m long, 0.32m wide, 0.26m deep	2.21m OD
61	4	1	2.48m long, 0.8m wide, 0.14m deep	2.18m OD
58	4	1	2.40m long, 0.82m wide, 0.31m deep	1.82m OD
70, 82	4	1	2.44m long, 0.64m wide, 0.19m deep	2.11m OD
85	4	1	1.90m long, 0.64m wide, 0.14m deep	2.13m OD
87	4	1	2.30m long, 0.60m wide, 0.12m deep	2.13m OD
89	4	1	1.5m long, 0.5m wide, 0.16m deep	2.14m OD
91	4	1	2.40m long, 0.64m wide, 0.20m deep	2.16m OD
93	4	1	2m long, 0.6m wide, 0.20m deep	2.15m OD
95	4	1	2m long, 0.6m wide, 0.20m deep	2.13m OD
97	4	1	1.4m long, 0.42m wide, 0.12m deep	2.12m OD
180	8		5.58m long, 0.93m wide, 0.39m deep	1.71m OD
182	8		5.40m long, 0.7m wide, 0.38m deep	1.73m OD
184	8		6.20m long, 0.70m wide, 0.34m deep	1.67m OD
187	8		8.60m long, 0.40m wide, 0.30m deep	1.70m OD
189	8		6.50m long, 0.30m	1.70m OD

Context no.	Evaluation Trench	Area of Excavation	Dimension	Highest level
			wide, 0.21m deep	
191	8		1.04m long, 0.28m wide	1.62m OD
193	8		6.20m long, 0.22m wide, 0.38m deep	1.66m OD
196	8		1.90m long,0.36m wide, 0.30m deep	1.61m OD
198	8		1.75m long, 0.70m wide, 0.25m deep	1.62m OD
168		2	6.3m long, 0.18m wide, 0.10m deep	1.90m OD

The cut features listed above were all filled with dark grey silty sand with frequent chalk and CBM flecks and occasional sub-angular and sub-rounded small size flint pebbles. Pottery, CBM, CTP and glass from fills [32], [34], [35], [48], [56], [59], [60], [68] and [69] dates the linear cut features, in Excavation Area 1, between the late 17th and late 18th century (Figure 4). Fill [167], in Area of Excavation 2 (Figure 5), contained pottery dated to AD 1550-1700 and fill [188] in Evaluation Trench 8 (Figure 7) contained CBM dated to AD 1180-1450. All linear features were interpreted as lazy beds associated with the agricultural activity across the study site on Rocque's map (Figure 8).

Phase 4b: Post-medieval (Figures 9 and 10)

6.1.17 Phase 4b includes archaeological structures and deposits, some probably associated with the tanning industry, which pre dates the development of The Grange Tannery from the first half of the 19th century. These archaeological structures and deposits were recorded in Evaluation Trench 4 / Area of Excavation 1 (Figure 10) and in Evaluation Trench 3 (Figure 9).

6.1.18 To the south of Evaluation Trench 3 alluvial layer [130] (see Phase 3 Paragraph 7.4.1) was truncated at 2.35m OD by cut [132] which was in turn filled with firm mid brownish grey silty clay [127] with occasional charcoal flecks and small flint pebbles inclusions (Figure 9 and 17 section 9). A number horn cores located against the sides of the cut were interpreted as a lining. Cut [132] which measured 2.70m northeast-southwest 1.11m wide and was 1.20m deep, extended beyond the southwest limit of excavation of the trench and was truncated by a large modern intrusion to the west. Fill [127] was only excavated to a maximum depth of 1.13m OD and did not produce finds. This feature was interpreted as a horn core lined cess pit of post-medieval date.

6.1.19 Fill [127] was truncated, at 2.34m OD, by cut [131] which measured 2.58m southwest-northeast, 0.60m wide and which was 0.84m deep. It was filled with friable dark yellowish brown silt sand [126] with occasional CBM, charcoal and chalk flecks. Pottery dated to AD1580-1900, CBM dated AD1630-1850, and glass dated to the mid 17th to early 18th century, animal bones and an incomplete pinned iron strap hinge (sf 4), likely originating

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Figure 9
Phase 4b: 1st half of 19th Century
Trench 3
1:50 at A4

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Figure 10
Phase 4b: 1st half of 19th Century
Area 1
1:50 at A4

from a door were all recovered from fill [126]. This cut was interpreted as a cess pit of post-medieval date.

6.1.20 In the south of Evaluation Trench 3 alluvial layer [130] was truncated at 2.25m OD by a northwest-southeast gulley cut [129] (Figure 17 section 10). This regular and partially excavated cut feature, 2m long, 0.65m deep and 0.95m wide was filled with soft dark grey brown clayey silt [128] with moderate CBM, horn cores and small to medium rounded to sub-rounded flint pebbles inclusions. CBM and CTP dated to AD 1660-1710 were recovered from this fill. The gulley was truncated to the northwest by cut [232] and to the east by a modern intrusion. The function of this archaeological feature is unknown.

6.1.21 In the southwest corner of Evaluation Trench 3 large construction cut with [232] comprising a horn core lining [231] truncated fill [128] to the east at 2.25m OD. This feature was partially exposed and extended beyond the northwest limit of excavation of Trench 3. The exposed part was 2.30m long, 0.65m wide and was filled with soft dark brown blackish very organic sand silt [230] with moderate CBM, chalk and charcoal flecks inclusions. None of the fills of this feature were excavated and it was recorded in plan only. This feature was interpreted as a horn core lined cess pit of post-medieval date.

6.1.22 In the northwest corner of Area 1 fill [121] (see Phase 4a paragraph 7.4.4) was truncated at 1.93m OD by construction cut [50] for an East-West orientated wooden drain [49]. This drain survived only as a horizontal void lined with decayed wood within the early archaeological deposits and was approximately 1m long by 0.12m height by 0.14m wide (Figure 10 and Figure 16 section 6).

6.1.23 Drain [49] connected horn core lined pits [47] and [53] located to the west and east respectively. East to west orientated horn core lined pit [47] found at 2.17m OD and was 3.53m long by 1.28m wide by 0.67 m deep. It was truncated to the north by a modern intrusion, and extended beyond the western limit of excavation of Trench 4 / Area 1 (see Appendix 4 Plate 4; Figure 10 and 16 section 6). An approximately 10% sample of the total amount of the horn core lining [46] was retrieved from this feature. Horn core lined pit [53] was found at 2.16m OD and measured 0.70m east-west, 0.99m north-south and was at least 0.18m deep. Fills [46] and [51] of horn core lined pit [47] and [53] respectively did not produce any dating evidence, and with drain [49] was interpreted as a horn core lined feature connected by the drainage system. Their function is uncertain and there is no evidence for them to be directly associated with tanning process.

Phase 4c: Post-medieval (Figures 11, 12 and 13)

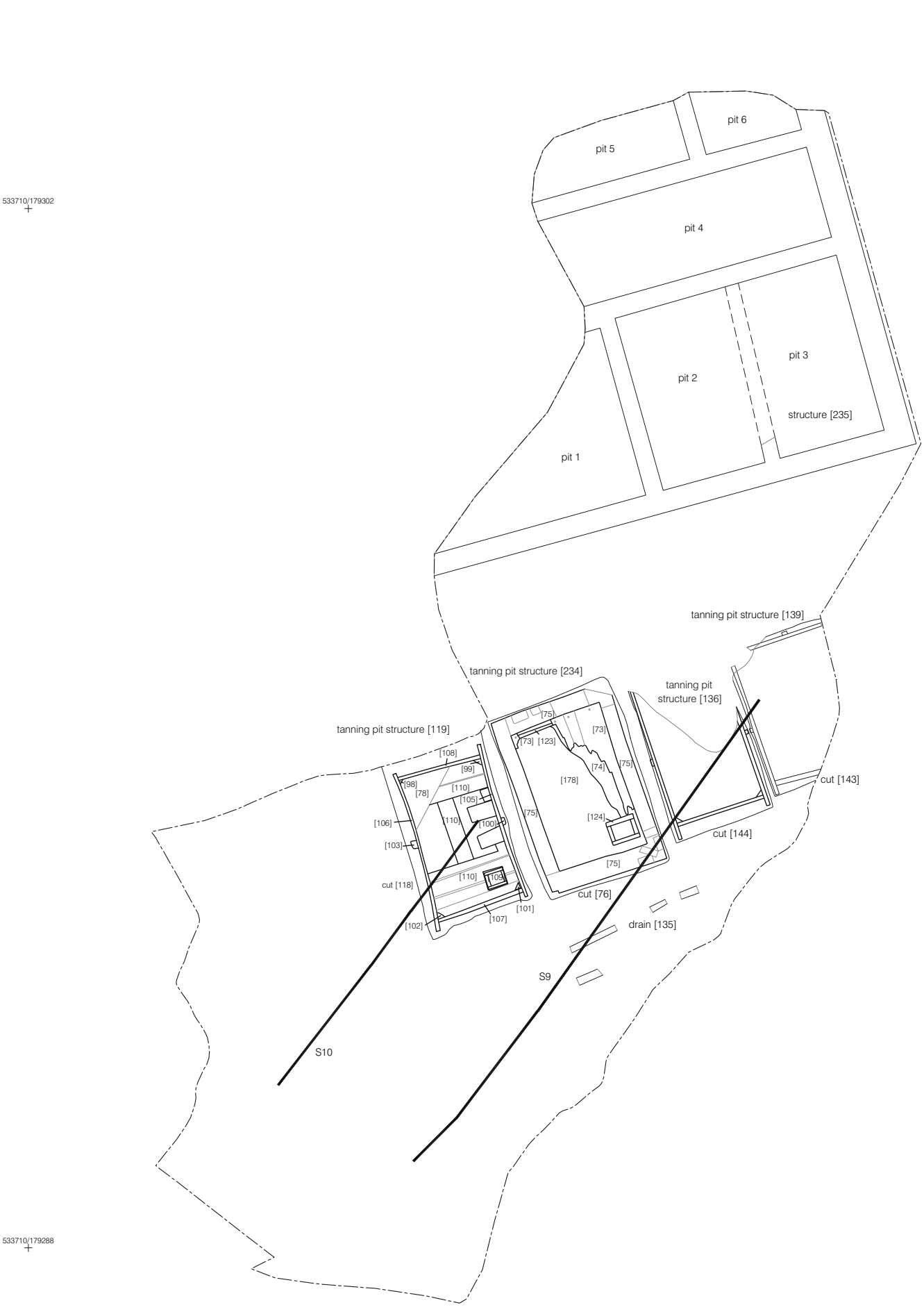

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Figure 11
Phase 4c: 2nd half of 19th Century
Trench 3
1:50 at A3

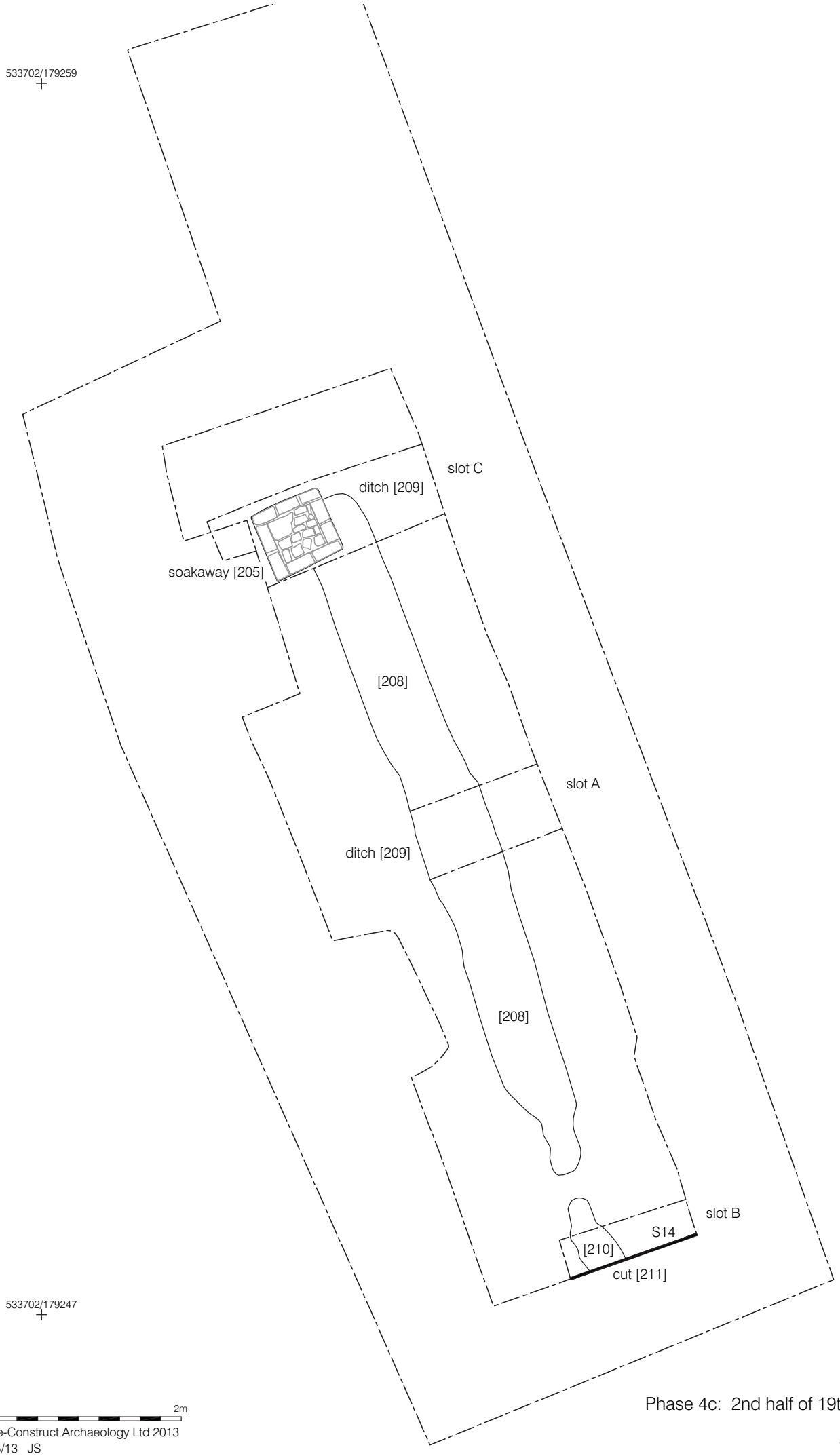

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Figure 12
Phase 4c: 2nd half of 19th Century
Trench 6
1:50 at A4

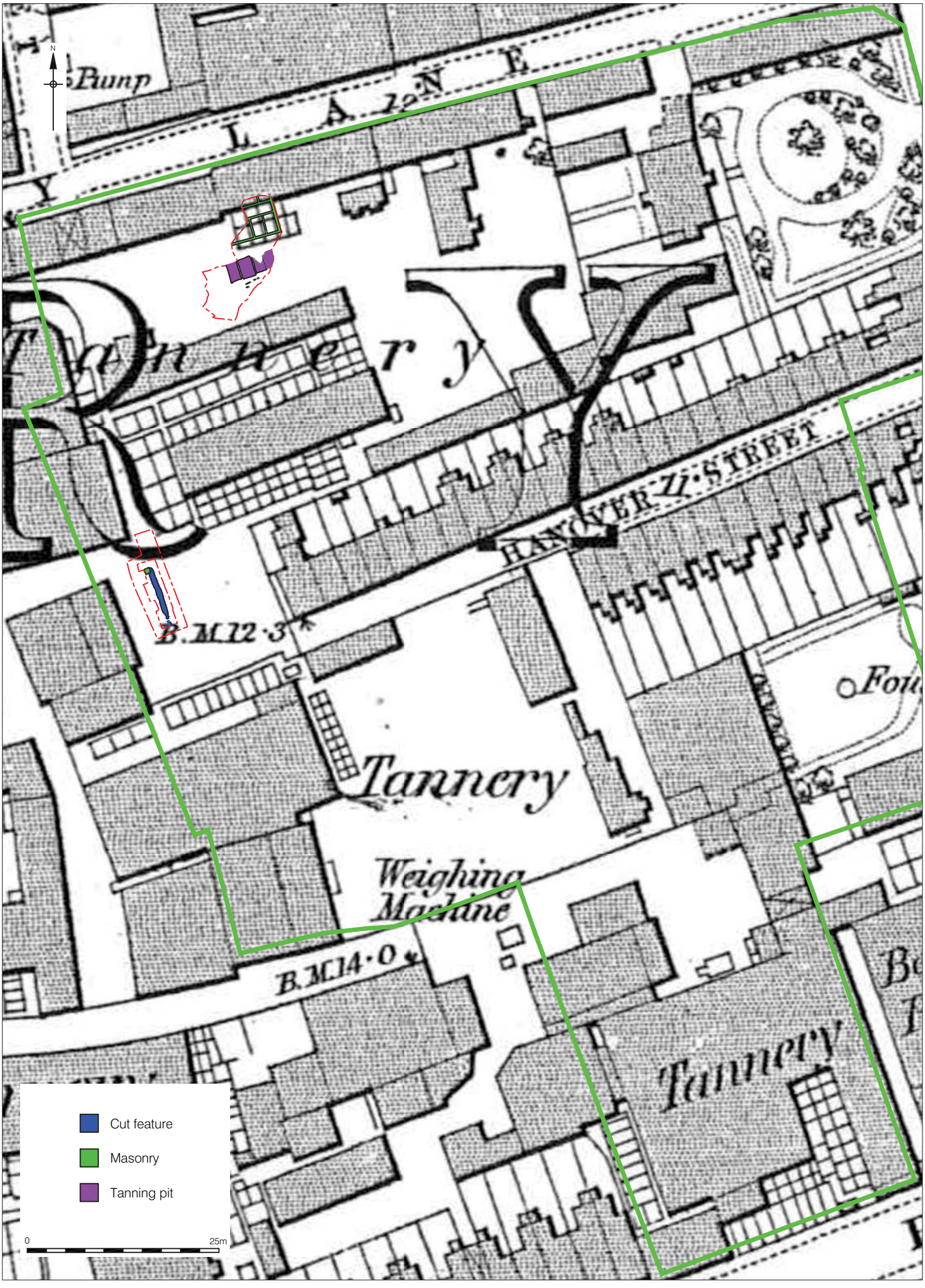

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Figure 13
Phase 4c overlaid onto Ordnance Survey, 1878
1:625 at A4

6.1.24 This phase includes timber and brick lined pit structures dated to the mid 19th century and recorded in evaluation Trench 3. The pits followed a south-west to north-east orientation and were recorded as structures [119], [234], [136] and [139] from the south-west to north-east.

6.1.25 Timber lined pit structure [119] was found at 2.27m OD and internally measured 1.18m wide by 1.88m long by 1.19m deep (see Appendix 4 Plates 5 and 6 and Figures 11, 13 and 17 section 10). The table below details all contexts associated with this structure:

Context No.	Type	Dimensions	Description	Highest level	Lowest level
78	Fill	1.90m long by 1.26m wide by 0.60m thickness	Upper fill of timber lined tanning pit	1.94m OD	
79	Fill	1.90m long by 1.26m wide by 0.13m thickness	Primary fill of timber lined tanning pit	1.37m OD	
98	Timber	0.09m by 0.04m by 0.7m high	Upright of timber lined tanning pit [119]. Triangular X section.	2.25m OD	
99	Timber	0.055m by 0.045m by 0.74m high	Upright of timber lined tanning pit [119]. Triangular X section.	2.04m OD	
100	Timber	0.10m by 0.07m by 0.71m high	Upright of timber lined tanning pit [119]. Rectangular X section.	1.91m OD	
101	Timber	0.09m by 0.05m by 0.58m high	Upright of timber lined tanning pit [119]. Triangular X section	1.82m OD	
102	Timber	0.09m by 0.07m by 0.58m high	Upright of timber lined tanning pit [119]. Triangular X section	1.86m OD	
103	Timber	0.04m by 0.02m by 0.90m high	Upright of timber lined tanning pit [119]. Rectangular X section	1.78m OD	
105	Timber	2.1m long by 0.032m thick by 0.67 high	Horizontal plank forming north east side of tanning pit.	2.02m OD	1.93m OD
106	Timber	2.06m long by 0.045m thick by 0.9m high	Horizontal plank forming south west side of tanning pit.	2.26m OD	1.86m OD
107	Timber	1.21m long by 0.025m thick by 0.36m high	Horizontal plank forming south east side of tanning pit.	1.86m OD	
108	Timber	1.22m long by 0.035m thick by 0.6m high	Horizontal plank forming north west side of tanning pit	2.25m OD	
109	Timber	0.35m long by 0.30m wide by 0.20m deep	Rectangular timber box set into floor [110]	1.27m OD	1.08m OD
110	Timber	1.21m long (SW-NE) by 0.99m (NW-SE) by 0.06m thick	Base of timber lined tanning pit.	1.28m OD	1.20m OD

Context No.	Type	Dimensions	Description	Highest level	Lowest level
117	Fill	2.15m long by 1.50m wide by 0.1m thick by 1.07m deep	Backfill of construction cut [118] for timber lined tanning pit structure [119]	2.27m OD	1.84m OD
118	Cut	2.15m long by 1.50m wide by 1.07m deep	Construction cut for timber lined tanning pit structure [119]	2.27m OD	1.20m OD
120	Fill		Laminated deposit probably resultant from chemical processes occurring in the tanning pit	2.25m OD	
151	Fill	0.24m long by 0.22m wide 0.19m thick	Very greasy fill of timber box [109]	1.27m OD	

This timber lined pit was made of tongue and grooved softwood boards set on edge, with joining cleats of softwood nailed vertically across the boards on the outside. In the inside of the pit the corners were rebated and supported by posts with triangular cross sections. The base was made similarly of tongue and grooved boards, nailed to perpendicular joists. In the southeast corner of this pit was a rectangular timber box / sump [109] set within the timber floor [110]. Structure [119] was clearly made as a self supporting watertight box or tank, by a professional joiner. Timber box [109] contained a white waxy lime mixture fill [151] which was retained as an environmental sample <12>. This sample contained small lime nodules (1 to 2 cm dia.) and cattle (?) hair. Low quantities of organic material were retrieved from the flot, this includes occasional charcoal fragments, uncharred seeds, and wood. In addition, industrial debris such as clinker and calcareous nodules (1-2 cm in size) were found in the residue. Samples <15> context [120], a sub-sample of the lining of timber lined pit structure [119] shows the built up of calcareous material over-time when the structure was in use (Appendix 11). This timber structure was interpreted as a liming pit used for dehairing by filling the pit with hides, water and adding lime.

6.1.26 Masonry pit structure [234], located immediately to the east of structure [119], was rectangular in shape and measured 2.46m long by 1.61m wide and was 1.09m deep (Figures 11, 13 and Appendix 4, Plate 7 and 8). The table below detail all contexts associated with this structure:

Context No.	Type	Dimension	Description	Highest level	Lowest level
71	Fill	2m long by 1.24 wide by 0.60m thick	Upper fill of tanning pit	2.13m OD	1.88mn OD
72	Fill	2m long by 1.24m wide by 0.22m thick	Lower fill of tanning pit (above timber floor [73])	1.53m OD	1.52m OD
73	Timber	1.95m long by 1.27m wide by 0.03m thick	Timber floor of tanning pit	1.31m OD	1.30m OD

Context No.	Type	Dimension	Description	Highest level	Lowest level
74	Fill	1.95m long by 1.27m wide by 0.10m thick	Levelling layer for timber floor [73]	1.21m OD	
75	Masonry	2.40m long by 1.74m wide by 0.63m thick by 1.09 high	Brick lining of tanning pit structure [234]	2.13m OD	1.87m OD
76	Cut	2.05m long by 1.75m wide by 1m deep	Construction cut for tanning pit structure [234]	2.13m OD	1.04m OD
77	Fill	0.40m long by 0.36 wide by 0.27 thick	Fill of timber sump [124]	1.18m OD	1.18m OD
123	Timber	1.95m long by 0.11m wide by 0.07m thick	Timber joist for timber floor [73]	1.30m OD	1.21m OD
124	Timber	0.39m long by 0.32m wide by 0.05 thick by 0.27m deep	Timber lined sump/drain set within timber floor [73]	1.81m OD	1.51m OD
125	Fill	2.05m long by 1.75m wide by 0.06m depth	Construction cut backfill for tanning pit structure [234]	2.34m OD	2.29m OD
178	Masonry	2.60m long by 1.76m wide	Concrete slab under timber floor [73]	1.04m OD	1.03m OD

This structure consisted of brick lining on all four sides using English coursing bonded with sand and gravel mortar and a timber floor at the base supported by timber joist sat on a concrete foundation. One post-great fire brick was collected from [72], the fill of this brick lined pit, dates from no earlier than the 19th century. In addition Sample <10> from context [72] produced wood chips, animal hair, coal, shell, CBM, daub, glass, pot, CTP and stone (see Appendix 11). In the southeast corner of the base of the pit a rectangular timber box / sump [124] was set within the timber floor. The timber box contained mid greyish brown and moderately organic fill [77] from which environmental sample <14> was retained for further analysis. Residue comprising fairly frequent, seeds, charcoal and wood chips were noted. Other artefactual material obtained from the residue includes coal, animal bone, shell, CTP, glass and iron (see Appendix 11). This masonry structure was very similar in shape and dimensions to structure [119] (see Paragraph 7.6.2) and as a result was interpreted as a liming pit associated with the dehairing of cattle or other animal hides.

6.1.27 Tanning pit structure [136], located immediately to the east of timber lined pit [234], was found at 2.32m OD and consisted of timber lining on all four sides supported by internal and external upright posts (Figures 11, 13 and 17 section 9). Its dimensions were 2.14m long by 1.39m wide and it was truncated on its north side by a modern intrusion. Tanning pit structure [136], filled by lower fill [137] and upper fill [138], was fully exposed in plan but not excavated. It was of the same dimensions and constructed with the same technique used for tanning pit structure [119] (see paragraph 7.7.2) and as a result was interpreted as a liming pit.

6.1.28 Immediately to the east of structure [136] was timber lined pit structure [139]. This consisted of timber lining on all four sides supported by internal and external uprights (Figures 11, 13 and 17 section 9). This pit, found at 2.50m OD, was truncated to the north by a modern intrusion and extended to the east beyond the limit of excavation of Trench 3. Its overall dimensions were 2.09m long by 1.34m wide and it contained primary fill [140] and upper fill [141] but was not fully excavated as it was constructed with the same technique used for the construction of tanning pit [119] (see paragraph 7.7.2). It was likewise interpreted as a liming pit.

6.1.29 In the south of Trench 3 and south of tanning pit structure [234] southwest to northeast orientated brick lined drain [135] was exposed at 2.38m OD. This drain was 1.89m long by 0.53m wide and was later replaced by ceramic drain pipe [150] (Figure 11 and 17 section 9). The original brick lined drain was probably contemporary with tanning pit structures [119], [234], [136] and [139] to the north, and as a result was probably associated with these structures.

6.1.30 In the north half of Trench 3 masonry structure [235] was found at 2.98m OD. This structure had a northeast to southwest orientation and consisted of red and London yellow stock bricks built on alternate stretcher and head courses bonded with grey cement. Structure [235] which extended beyond the north and west limit of excavation of Trench 3, was 6.66m long by 5.39m wide and was subdivided in six pits (Figures 11, 13 and Appendix 4 Plate 9) which were machine excavated. The table below details the internal dimensions of each pit:

Pit No.	Dimensions
1	2.96m long by 2.33m wide
2	2.42m long by 1.45m wide
3	2.42m long by 1.45m wide
4	3.76m long by 1.26m wide
5	2.19m long by 0.84m wide
6	1.36m long by 0.86m wide

Structure [235] was interpreted as part of a structure depicted on the OS map of 1878 which was most likely associated with the tanning process.

6.1.31 In the middle of Trench 6 fill [212] (see Phase 4a Paragraph 7.4.5) was truncated between 1.46m OD and 1.61m OD by southeast to northwest orientated gulley [209]/[211]. This linear feature, 7.96m long by 0.76m wide by 0.50m deep, extended beyond the south limit of excavation and had a terminus to the north which was truncated at 1.80m OD by construction cut [206] for square masonry [205] (Figure 12 and Appendix 4 Plate 2). The masonry was truncated horizontally by machining and was proximately 0.70m square by 0.23m high. Gulley's fills [208], [210] and [218] did not contain artefacts,

however together with masonry [205] were interpreted as a soak away and drainage gulley dating to the post-medieval period.

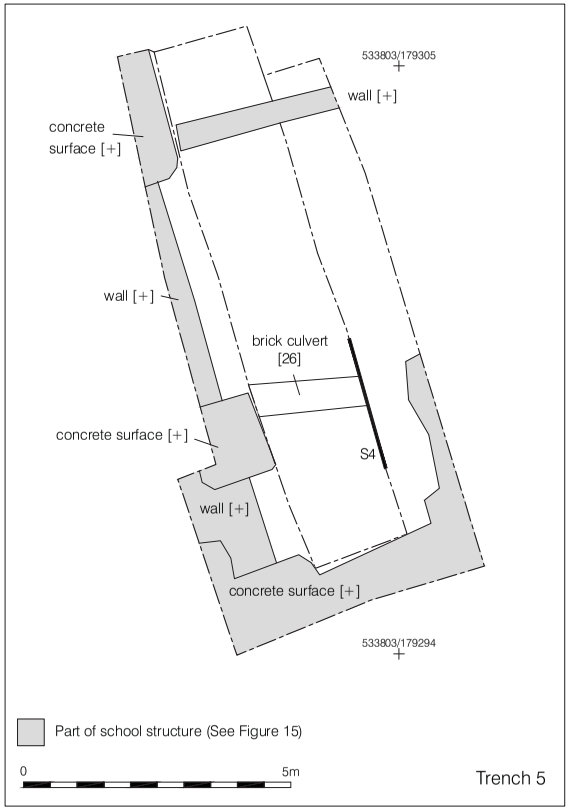
Phase 5 (Figures 14 and 15)

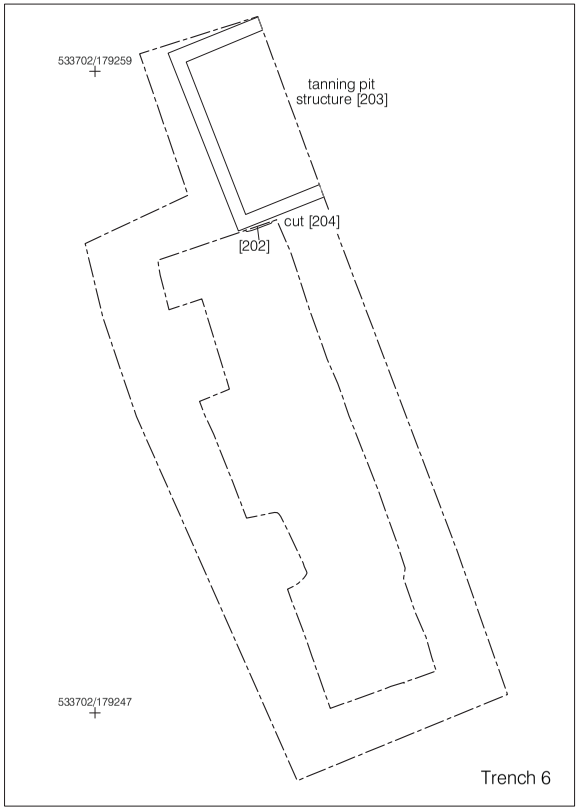
6.1.32 Phase 5 includes archaeological structures found in Trenches 5, 6 and Area 2, associated with the development of the site in the late 19th to early 20th century. In the south end of Trench 3 brick structure [236] was unearthed at 3.08m OD. It was on a northeast-southwest orientation and extended beyond the south limit of excavation of Trench 3. Its dimensions were 2.97m long by 1.36m wide and it was interpreted as part of the building labelled as “Tannery” depicted on the1893-95 OS map (not shown in this report) and the 1914-16 OS map (Figure 15).

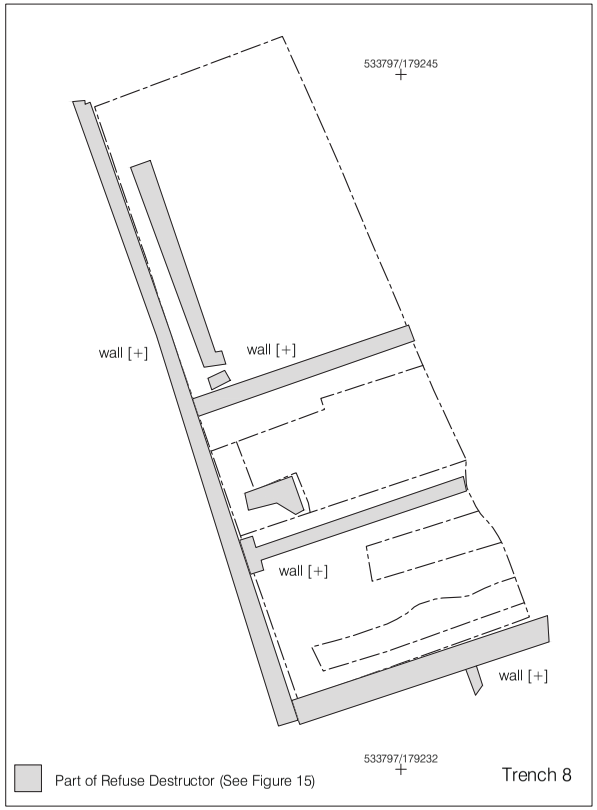
6.1.33 In the southern half of Trench 5 layer [22] (see Phase 4a Paragraph 7.4.8) was truncated at 2.45m OD by east to west orientated brick culvert [26] which measured 2.09m long by 0.59m wide by 0.50m high. It consisted of red frogged bricks dated to AD 1750-1850 bonded with lime mortar and interpreted as part of the drainage system associated with the building labelled as “School” as depicted on the 1893-95 OS map (not shown in this report) and the 1914-16 OS map (Figure 15).

6.1.34 In the north end of Trench 6 fill [199] (see Phase 4a Paragraph 7.4.7) was truncated at 1.98m OD by construction cut [204] for rectangular shaped brick structure [203] which extended beyond the eastern limit of excavation of Trench 6. This structure survived to a top level of 3.22m OD and measured 3.58m northwest-southeast by 1.81m southwest-northeast by at least 1.24m in height and consisted of yellow frogged bricks bonded with hard grey cement mortar. Very loose and soft black ash with frequent round pebbles inclusions filled this rectangular brick structure which was interpreted as a later brick lined tanning pit built immediately to the south of the L shaped structure labelled as “Tannery” on the 1914-16 OS map (Figure 15).

6.1.35 In Trench 8 one northwest-southeast orientated masonry foundation was present running the full length the western side and three parallel masonry foundations across the full width of the Trench were also uncovered (see Appendix 4 Plate 10). These foundations were interpreted as parts the same structure associated with the building depicted on the 1914-16 OS map and labelled as “Refuse Destructor” (Figure 15).

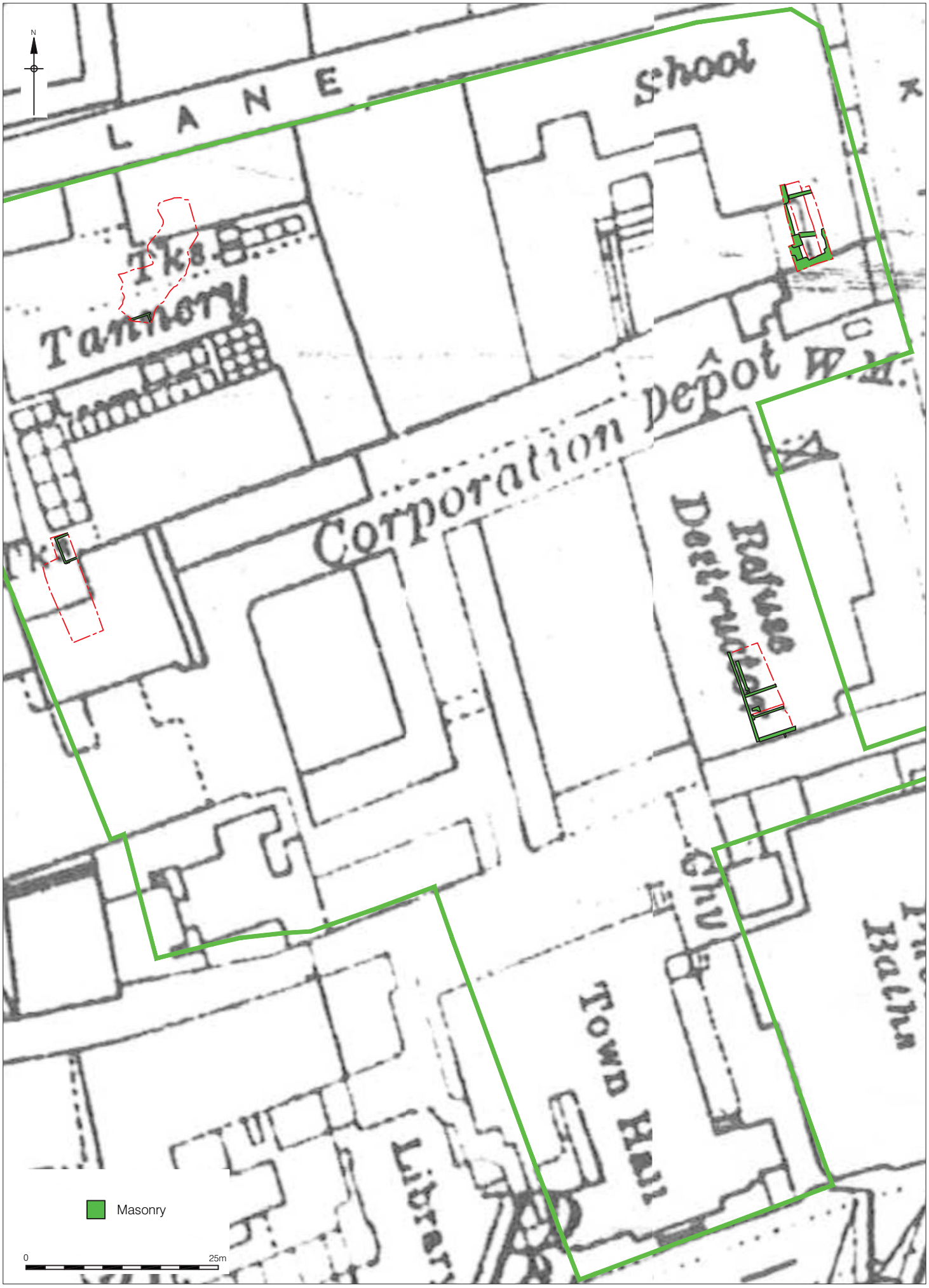






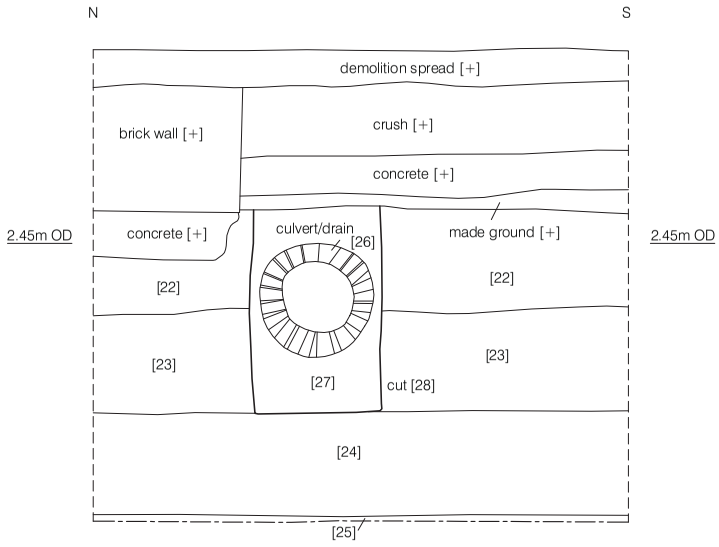
08/05/13 JS

Figure 14
Phase 5: Early 20th Century
Trenches 3, 5, 6 & 8
1:100 at A3

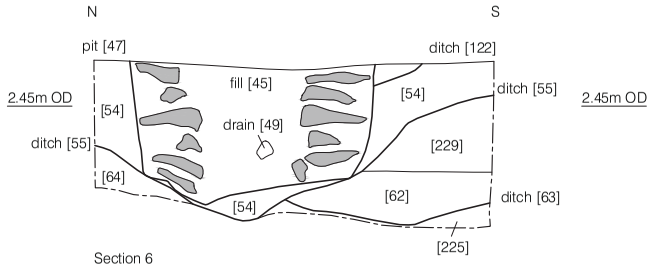


08/05/13 JS

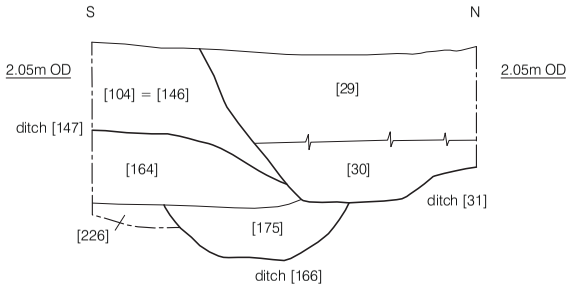
Figure 15
Phase 5 overlaid onto Ordnance Survey, 1914-16
1:625 at A4



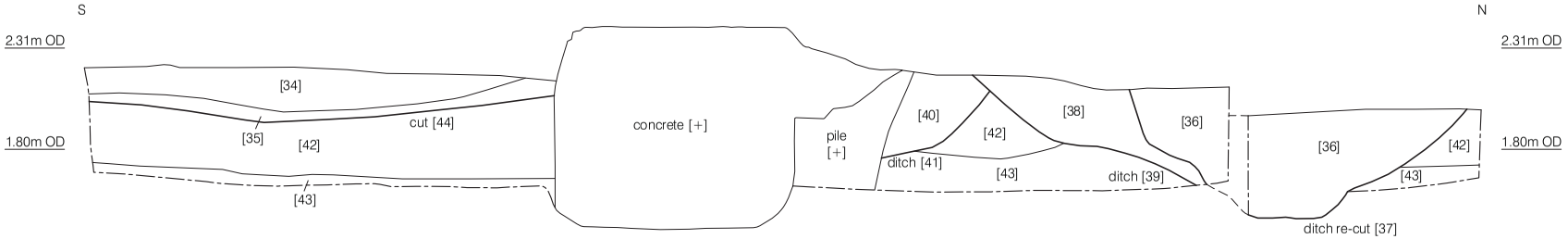
Section 4
Phase 5
Trench 5
West Facing



Section 6
Phases 2, 4a & 4b
Area 1; Trench 4
West Facing



Section 8
Phases 2 & 4a
Area 1; Trench 4
East Facing



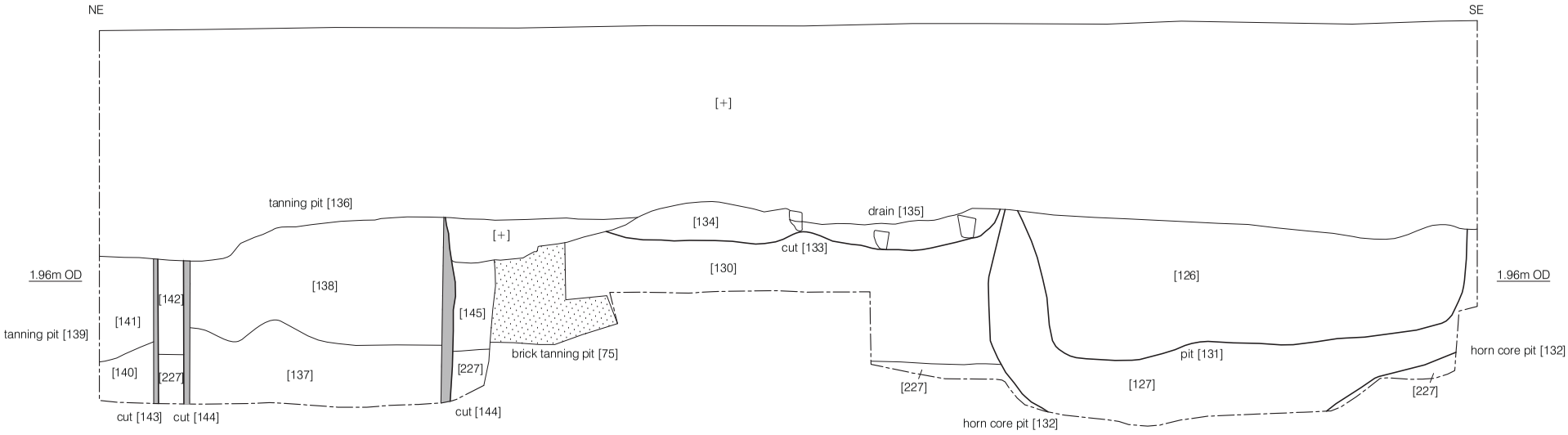
Section 7
Phase 4a
Area 1; Trench 4
East Facing

horn core lining [46]

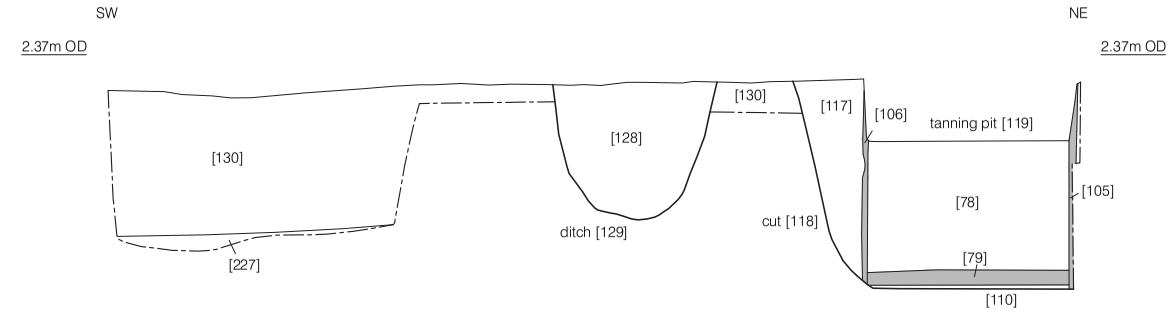
0 1m

08/05/13 JS

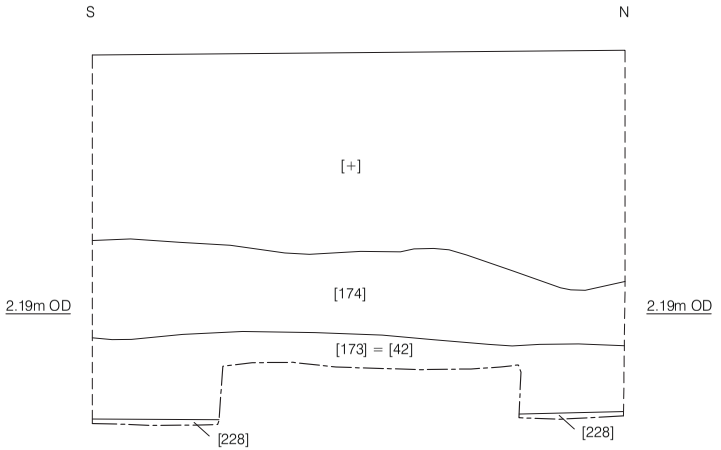
Figure 16
Sections 4, 6, 7, and 8
1:25 at A3



Section 9
Phases 4c & 4b
Trench 3
Northwest Facing



Section 10
Phases 4c & 4b
Trench 3
Southeast Facing



Section 11
Phase 4a
Area 2
East Facing

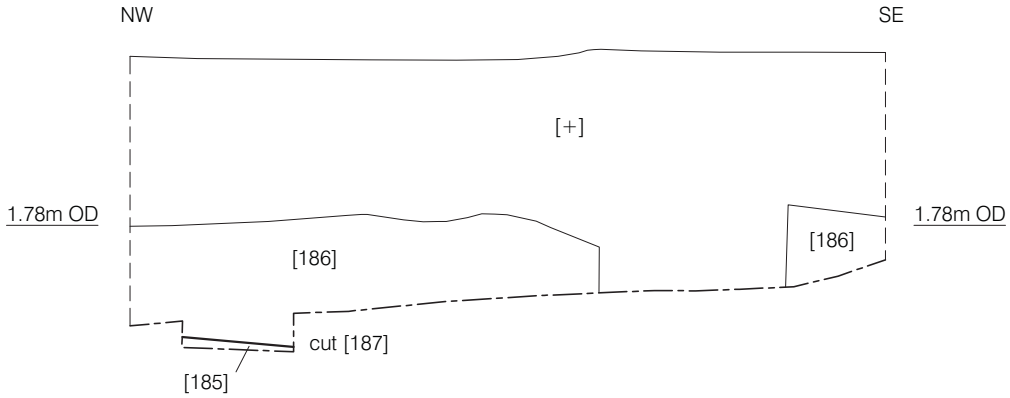
brick

timber

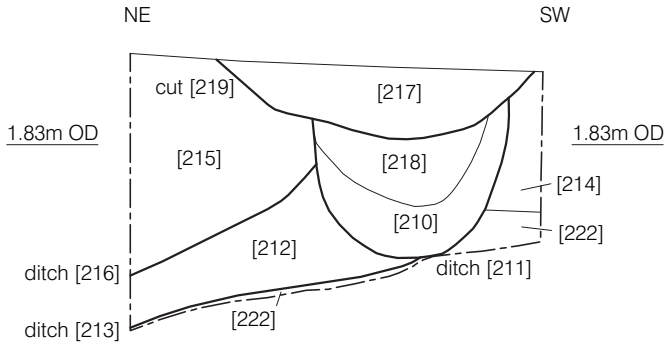
0 1m

08/05/13 JS

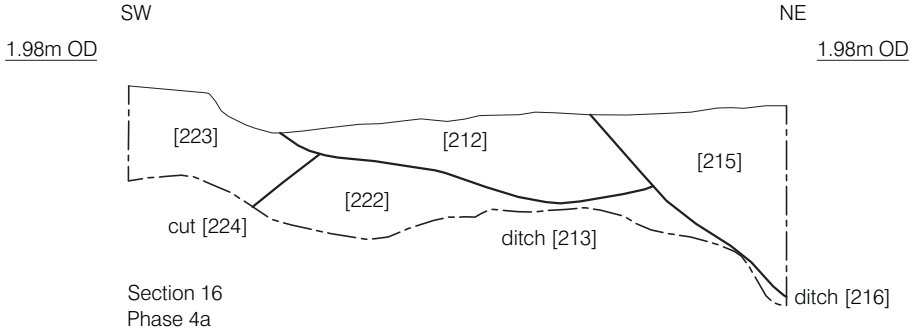
Figure 17
Sections 9, 10 and 11
1:25 at A3



Section 12
Phase 4a
Trench 8
Southwest Facing



Section 14
Phases 4a & 4c
Trench 6
Northwest Facing



Section 16
Phase 4a
Trench 6
Southeast Facing

0 1m

08/05/13 JS

Figure 18
Sections 12, 14 and 16
1:25 at A3

7 INTERPRETATION AND CONCLUSIONS

The principal objectives of the archaeological evaluation were to:

- Determine the paleotopography of the site;
- Determine the presence or absence of prehistoric activity;
- Determine the presence of absence of Roman activity;
- To establish the presence or absence of medieval activity, especially to the Abbey Grange.
- To establish the presence or absence of post-medieval activity, especially to do with the subsequent usage of the Abbey Grange and any activity associated with the Civil War defences.
- Establish the extent of past post depositional impacts on the archaeological resource.

These results were achieved and they are summarised below.
Natural sands and gravels were recorded from an uppermost elevation of 1.83m OD in the north part of the site (Trench 4 / Area of Excavation 1). In the south part of the site the natural sands and gravels were found at 1.53m OD (Trench 8). In Excavation Areas 1 and 2 and in Trench 3 the upper horizon of this deposit had increasing fraction of clay and in Area of Excavation 1 the water table was found at approximately 1.70-1.80m OD. As a result the natural sands and gravels exhibited a general downward northern inclination which coincides with the concentration of alluvial clays and sands and the water table.

The level of the natural (Phase 1) recorded on the study site is consistent with that recorded at the site of the Lanarca Works (Bright, 2008) , located immediately to the west and at the former Abbey Street Children's Home where it was recorded at 1.85m OD and 1.95m OD respectively.

The investigations revealed evidence for prehistoric activity (Phase 2) situated in the north part of the site. In Area of Excavation 1 two intercutting pits produced pottery dated to the late Bronze Age - Middle Iron Age. One east to west orientated ditch, in Trench 4, also dated to the prehistoric period as it was sealed by a layer which contained a sherd of pottery dated to the Middle Bronze Age- Late Iron Age.

No feature or horizons were identified as being Roman or medieval in date. However, a small quantity of residual abraded Roman ceramic building material and daub were collected from post-medieval deposits. This is to be expected given the proximity of the Roman dumps around the Bermondsey Abbey area. It is likely that alluvial events associated with the Neckinger, cultivation, and subsequent redevelopment and industrialization of the area truncated most of these early horizons.

The investigation revealed evidence of an alluvial event dated to the early post-medieval period (Phase 3). This phase represents the formation of a substantial and thick deposit of alluvium

observed across the site. Finds dated to the Roman and medieval periods together with artefacts dated to the medieval and post-medieval period were retrieved from this horizon.

Evidence of agricultural activity was identified for Phase 4a. Horticultural cut features and post medieval ditches were observed in Area of Excavation 1, 2 and Trench 6 and 8 where finds dating to mid to late 18th century were recovered. Rocque's map of 1746 shows that the study site is within an area in use as agricultural land during the mid 18th century. The finds collected from this horizon also consistent with an 18th century date.

The investigation revealed significant evidence for post-medieval activity across the site (Phase 4b). Horn core lined pits were observed in Trenches 3 and 4. Similar pits lined with horn cores excavated in different sites in Bermondsey have been interpreted as tanning pits (McKinley 2006, p91). However, there is no evidence to suggest that the pits encountered across the site were directly associated with the tanning process as they were too small and the horn core lining potentially would have damage the hides (Kevin Reilly personal comment 2013).

Evidence of structures directly associated with the tanning process was identified during the archaeological investigation (Phase 4c). Timber and brick lined pit structures found in Trenches 3 and 8 were interpreted as liming and tanning pits associated with the 19th century Grange Tannery complex (see Appendix 4 Plate 5-8). Similar pits to the ones encountered on the study site have been excavated in Bermondsey and have been interpreted there as liming pits (Heard 2000, pp141-3) Cartographic evidence shows that the area known as 'The Grange Tanneryq as depicted in a print of 1876 (Appendix 4 Plate 11) start being developed from the late 18th or early 19th century. The Grange Tannery, originally run by Samuel Barrow and Brothers, later came under the management of Barrow, Hepburn and Gale, one of the largest firms in the area[1].

Evidence of structures dating to the post-medieval period was observed in Trenches 5, 6 and 8 (Phase 5). Concrete and brick foundations exposed in Trench 5 were interpreted as part of the footprint of the school shown on the OS, 1914-16 map. In the southeast corner of the site, in Trench 8, concrete and brick foundations were located within the large southeast-northwest building labelled as "Refuse Destructor" on the OS 1914-16 map and. In Trench 6 located in the west part of the site a rectangular brick structure was interpreted as being a later brick lined tanning pit built immediately to the south of the L shaped structure and labelled as a "Tannery" on the 1914-16 OS map.

[1] http://www.ideal-homes.org.uk/southwark/assets/galleries/bermondsey/grange-tannery

8 REVISED RESEARCH QUESTIONS

What was the nature of the agricultural or horticultural activities identified across the site for the 18th century. Were these activities aimed at supplying the urban centre or where they in support of the local population in the immediate vicinity. It may be possible to follow these questions up by further documentary research.

What parts of the tanning process where carried out across the site and how did the “Refuse Destructor” fit into this. Did this machinery function as supporting infrastructure for the immediate area or for the tanning industry or refuse disposal across the borough.

Was the use for waste management flagged up on the 1914-16 OS map a result of the ‘dirty industries’ traditional located in this area making this a convenient location for activities of this nature or where there other motives involved.

How, when and under what motivation was the area eventually sanitised and were the ‘dirty’ industries closed down or moved elsewhere.

A short summary on the results of the fieldwork should be published in the yearly London Archaeologist round-up.

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11 APPENDIX 1: CONTEXT INDEX

Context No	Trench No.	Excavation area	Phase	Plan	Section	Type	Description
22	5		4a	GPS	4	Layer	Post-med made ground
23	5		3	GPS	4	Layer	Green silt sand
24	5		2	GPS	4	Layer	Mid yellowish brown silt sand
25	5		1	GPS	4	Layer	Natural sandy gravel
26	5		5	GPS	4	Masonry	Brick culvert/drain
27	5		5	GPS	4	Fill	Backfill of construction cut [28]
28	5		5	GPS	4	Cut	Construction cut for brick culvert/drain [28]
29	4		4a		8	Fill	Fill of ditch [31]
30	4		4a		8	Fill	Fill of ditch [31]
31	4		4a	31	8	Cut	E-W orientated ditch cut
32		Area1	4a			Fill	Fill of post-med linear feature [33]
33		Area1	4a	33		Cut	Linear feature, agricultural lazy bed
34		Area1	4a		7	Fill	Infill of post-med cut [44]
35		Area1	4a		7	Fill	Infill of post-med cut [44]
36		Area1	4a		7	Fill	Infill of post-med ditch [37]
37		Area1	4a	Pre-ex Area1	7	Cut	Re-cut of ditch [39]
38		Area1	4a		7	Fill	Fill of ditch [39]
39		Area1	4a		7	Cut	Cut of post-med ditch
40		Area1	3		7	Fill	Fill of E-W orientated ditch cut [41]
41		Area1	3		7	Cut	E-W orientated ditch cut
42		Area1	3	42	7	Layer	Alluvium. Possibly same as [83] and [165]
43		Area1	1	Post-ex Area1	7	Layer	Natural sandy gravel
44		Area1	4a	44	7	Cut	Late post-med cut
45		Area1	4b		6	Fill	Fill of tanning pit [46]
46		Area1	4b	46	6	Fill	Horn core lining of tanning pit
47		Area1	4b		6	Cut	Construction cut of possible tanning pit
48		Area1	4a			Fill	Primary fill of cut [33]
49		Area1	4b			Fill	Decayed wood. Fill of drain [50]
50		Area1	4b	50		Cut	Construction cut for drain connecting horn core pits [47] and [53]
51		Area1	4b	53		Fill	Fill of horn core lined tanning pit [53]
52		Area1	4b	53		Fill	Horn core lining of tanning pit
53		Area1	4b	53		Cut	Construction cut of horn core lined tanning pit
54		Area1	4a		6	Fill	Fill of ditch cut [55]
55		Area1	4a	55	6	Cut	E-W orientated ditch cut

Context No	Trench No.	Excavation area	Phase	Plan	Section	Type	Description
56		Area1	4a			Fill	Upper fill of cut [58]
57		Area1	4a			Fill	Primary fill of cut [58]
58		Area1	4a	58		Cut	Linear feature, agricultural lazy bed filled by [56] and [57]
59		Area1	4a			Fill	Upper fill of cut [61]
60		Area1	4a			Fill	Primary fill of cut [61]
61		Area1	4a	61		Cut	Linear post-med agricultural feature filled by [59] and [60]
62		Area1	2		6	Fill	Fill of ditch cut [63]
63		Area1	2	63	6	Cut	Early E-W orientated ditch cut
64		Area1	2		6	Fill	Fill of Iron Age pit [65]
65		Area1	2	65		Cut	Iron Age pit filled by [64]
66							Void
67							Void
68		Area1	4a			Fill	Upper fill of post-med agricultural feature [70]. Same as [80]
69		Area1	4a			Fill	Primary fill of post-med agricultural feature [70].Same as [81]
70		Area1	4a	82		Cut	Linear post-med agricultural feature filled by [68] and [69].Same as [82]
71	3		4c			Fill	Upper fill of tanning pit [76]. Structure [234]
72	3		4c			Fill	Lower fill of tanning pit [76]. Structure [234]
73	3		4c	75, Pre-ex plan Trench 3		Timber	Timber floor for tanning pit [76]. Structure [234]
74	3		4c	75, Pre-ex plan Trench 3		Fill	Levelling layer for timber floor [73]. Structure [234]
75	3		4c	76	9	Masonry	Brick lining of tanning pit [76]. Structure [234]
76	3		4c	76, Pre-ex plan Trench 3	9	Cut	Construction cut for brick lining [75]. Structure [234]
77	3		4c			Fill	Timber sump fill. Structure [234]
78	3		4c	119,Pre-ex plan Trench 3	10	Fill	Upper fill of timber lined tanning pit [119]
79	3		4c		10	Fill	Primary fill of timber lined tanning pit [119]
80		Area1	4a			Fill	Upper fill of cut [82]. Same as [68]
81		Area1	4a			Fill	Primary fill of cut [82]. Same as [69]
82		Area1	4a	82		Cut	Linear post-med agricultural feature filled by [80] and

Context No	Trench No.	Excavation area	Phase	Plan	Section	Type	Description
							[81].Same as [70]
83		Area1	3	85		Layer	Alluvial layer. Same as [42] and [165]
84		Area1	4a	85		Fill	Fill of post-med linear feature [85]
85		Area1	4a	85		Cut	Post-med linear cut feature filled by [84]. Lazy bed
86		Area1	4a	85		Fill	Fill of post-med linear feature [87]
87		Area1	4a	85		Cut	Post-med linear cut feature filled by [86]. Lazy bed
88		Area1	4a	85		Fill	Fill of post-med linear feature [89]
89		Area1	4a	85		Cut	Post-med linear cut feature filled by [88]. Lazy bed
90		Area1	4a	85		Fill	Fill of post-med linear feature [91]
91		Area1	4a	85		Cut	Post-med linear cut feature filled by [90]. Lazy bed
92		Area1	4a	85		Fill	Fill of post-med linear feature [93]
93		Area1	4a	85		Cut	Post-med linear cut feature filled by [92]. Lazy bed
94		Area1	4a	85		Fill	Fill of post-med linear feature [95]
95		Area1	4a	85		Cut	Post-med linear cut feature filled by [94]. Lazy bed
96		Area1	4a	85		Fill	Fill of post-med linear feature [97]
97		Area1	4a	85		Cut	Post-med linear cut feature filled by [96]. Lazy bed
98	3		4c	119,Pre-ex plan Trench 3		Timber	Upright of timber lined tanning pit [119]
99	3		4c	119,Pre-ex plan Trench 3		Timber	Upright of timber lined tanning pit [119]
100	3		4c	119,Pre-ex plan Trench 3		Timber	Upright of timber lined tanning pit [119]
101	3		4c	119,Pre-ex plan Trench 3		Timber	Upright of timber lined tanning pit [119]
102	3		4c	119,Pre-ex plan Trench 3		Timber	Upright of timber lined tanning pit [119]
103	3		4c	119,Pre-ex plan Trench 3		Timber	Upright of timber lined tanning pit [119]
104	4	Area1	4a		8	Fill	Fill of ditch [147]. Same as [146]
105	3		4c	119,Pre-ex plan Trench 3	10	Timber	Planking in timber lined tanning pit [119]

Context No	Trench No.	Excavation area	Phase	Plan	Section	Type	Description
106	3		4c	119,Pre-ex plan Trench 3	10	Timber	Planking in timber lined tanning pit [119]
107	3		4c	119,Pre-ex plan Trench 3		Timber	Planking in timber lined tanning pit [119]
108	3		4c	119,Pre-ex plan Trench 3		Timber	Planking in timber lined tanning pit [119]
109	3		4c	119,Pre-ex plan Trench 3		Timber	Timber box in SE corner of tanning pit [119]
110	3		4c	119,Pre-ex plan Trench 3	10	Timber	Timber floor of timber lined tanning pit [119]
111		Area1	4a			Fill	Fill of posthole [112]
112		Area1	4a	112		Cut	Posthole filled by [111]
113		Area1	4a			Fill	Fill of posthole [114]
114		Area1	4a	114		Cut	Posthole filled by [113]
115		Area1	4a			Fill	Fill of posthole [116]
116		Area1	4a	116		Cut	Posthole filled by [115]
117	3		4c	119, Pre-ex plan Trench 3	10	Fill	Backfill of construction cut [118] for timber lined tanning pit [119]
118	3		4c	119, Pre-ex plan Trench 3	10	Cut	Construction cut for timber lined tanning pit [119]
119	3		4c	119, Pre-ex plan Trench 3		Structure	Timber lined tanning pit (Structure)
120	3		4c			Fill	Laminated lining deposit of tanning pit [119]
121		Area1	4a		6	Fill	Fill of possible later ditch cut [122]
122		Area1	4a	122	6	Cut	Later ditch cut filled by [121]
123	3		4c	123, Pre-ex plan Trench 3		Timber	Timber joists for timber floor [73] in tanning pit structure [234]
124	3		4c	76, Pre-ex plan Trench 3		Timber	Timber box in SE corner timber floor [73]. Structure [234]
125	3		4c	75/76	9	Fill	Backfill of construction cut [76]. Structure [234]
126	3		4b	Pre-ex Trench 3	9	Fill	Fill of horn core lined pit [131]
127	3		4b	Pre-ex trench 3	9	Fill	Fill of horn core lined pit [132]
128	3		4b		10	Fill	Fill of North-South ditch/drain cut [129]
129	3		4b	129, Pre-ex plan Trench 3	10	Cut	North-South orientated ditch/drain filled by [128]
130	3		3		10	Layer	Alluvial layer
131	3		4b	131	9	Cut	Cut of horn core pit filled by [126]
132	3		4b	132	9	Cut	Cut of horn core pit filled by [127]
133	3		4c	Pre-ex plan Trench 3	9	Cut	Construction cut for brick lined

Context No	Trench No.	Excavation area	Phase	Plan	Section	Type	Description
							drain [135]
134	3		4c	Pre-ex plan Trench 3	9	Fill	Backfill of construction cut [133] for brick lined drain [135]
135	3		4c	Pre-ex plan Trench 3	9	Masonry	Brick lined drain
136	3		4c	136, Pre-ex plan Trench 3	9	Structure	Timber lined tanning pit
137	3		4c		9	Fill	Primary fill of timber lined tanning pit structure [136]
138	3		4c		9	Fill	Secondary fill of timber lined tanning pit structure [136]
139	3		4c	139, Pre-ex plan Trench 3	9	Structure	Timber lined tanning pit
140	3		4c		9	Fill	Primary fill of timber lined tanning pit structure [139]
141	3		4c		9	Fill	Secondary fill of timber lined tanning pit structure [139]
142	3		3	Pre-ex plan Trench 3	9	Layer	Alluvial layer
143	3		4c	143, Pre-ex plan Trench 3	9	Cut	Construction cut for timber lined tanning pit [139]
144	3		4c	Pre-ex plan Trench 3	9	Cut	Construction cut for timber lined tanning pit structure [136]
145	3		3	Pre-ex plan Trench 3	9	Layer	Alluvial layer. Possibly same as [142] and [130]
146		Area1	4a		8	Fill	Fill of ditch cut [147].Same as [104]
147		Area1	4a	147	8	Cut	Ditch cut filled by [146]
148		Area1	4a			Fill	Fill of post hole [149]
149		Area1	4a	112		Cut	Post hole filled by [148]
150	3		4c	Pre-ex plan Trench 3	9	Fill	Backfill of construction cut [133] for brick lined drain [135]
151	3		4c			Fill	Fill of timber box [109] at the base of timber lined tanning pit [119]
152		Area1	4a			Fill	Fill of post hole [153]
153		Area1	4a	112		Cut	Post hole filled by [152]
154		Area1	4a			Fill	Fill of post hole [155]
155		Area1	4a	112		Cut	Post hole filled by [154]
156		Area1	4a			Fill	Fill of post hole [157]
157		Area1	4a	112		Cut	Post hole filled by [156]
158		Area1	4a			Fill	Fill of post hole [159]
159		Area1	4a	112		Cut	Post hole filled by [158]
160		Area1	4a			Fill	Fill of post hole [161]
161		Area1	4a	112		Cut	Post hole filled by [160]
162		Area1	2	163		Fill	Fill of undated pit [163]
163		Area1	2	163		Cut	Undated pit filled by [162]. Possibly pre-historic
164		Area1	2	164		Layer	Alluvial silty clay layer

Context No	Trench No.	Excavation area	Phase	Plan	Section	Type	Description
165		Area1	3	165		Layer	Alluvial layer
166		Area1	2	166	8	Cut	NE-SW orientated ditch cut filled by [175]
167		Area2	4a	168, Pre-ex plan Area 2		Fill	Fill of linear N-S orientated cut [168]. Post-medieval
168		Area2	4a	168, Pre-ex plan Area 2		Cut	Post-med, N-S orientated linear cut filled by [167]
169		Area2	4c	Pre-ex plan Area 2		Fill	Fill of post-med square cut feature [170]
170		Area2	4c	Pre-ex plan Area 2		Cut	Post-med square cut feature filled by [169]
171		Area2	4c	Pre-ex plan Area 2		Fill	Partially excavated fill of linear E-W orientated cut feature [172]. Post-med
172		Area2	4c	Pre-ex plan Area 2		Cut	E-W orientated cut feature filled by [171]. Post-med
173		Area2	3	Pre-ex plan Area 2	11	Layer	Alluvial layer. Same as [42], [165]and [83] in Area 1
174		Area2	4c	Pre-ex plan Area 2	11	Layer	Alluvial layer
175		Area1	2	166	8	Fill	Fill of possible pre-historic ditch cut [166]
176		Area1	1	Post-ex Area1		Layer	Natural sandy gravel
177		Area1	1	Post-ex Area1		Layer	Natural sandy gravel
178	3		4c	75		Masonry	Concrete slab for brick lined tanning pit [75]. Structure [234]
179	8		4a	Post-ex plan Trench 8		Fill	Fill of N-S orientated cut feature [180]
180	8		4a	Post-ex plan Trench 8		Cut	N-S orientated cut filled by [179]
181	8		4a	Post-ex plan Trench 8		Fill	Fill of linear N-S orientated cut feature [182]
182	8		4a	Post-ex plan Trench 8		Cut	Linear N-S orientated cut filled by [181]
183	8		4a	Post-ex plan Trench 8		Fill	Fill of linear N-S orientated cut feature [184]
184	8		4a	Post-ex plan Trench 8		Cut	Linear N-S orientated cut filled by [181]
185	8		1	Post-ex plan Trench 8		Layer	Natural clayey gravelly sand
186	8		4a	Post-ex plan Trench 8		Fill	Fill of linear N-S orientated cut feature [187]
187	8		4a	Post-ex plan Trench 8		Cut	Linear N-S orientated cut filled by [186]
188	8		4a	Post-ex plan Trench 8		Fill	Fill of linear N-S orientated cut feature [189]
189	8		4a	Post-ex plan Trench 8		Cut	Linear N-S orientated cut feature filled by [188]
190	8		4a	Post-ex plan Trench 8		Fill	Fill of linear N-S orientated cut

Context No	Trench No.	Excavation area	Phase	Plan	Section	Type	Description
							feature [191]. Not excavated
191	8		4a	Post-ex plan Trench 8		Cut	Linear N-S cut feature filled by [190]. Not excavated
192	8		4a	Post-ex plan Trench 8		Fill	Fill of linear N-S orientated cut [193]
193	8		4a	Post-ex plan Trench 8		Cut	Linear N-S orientated cut feature fille by [192]
194	8		4a	Post-ex plan Trench 8		Layer	Grey sandy deposit
195	8		4a	Post-ex plan Trench 8		Fill	Fill of N-S orientated cut feature [196]
196	8		4a	Post-ex plan Trench 8		Cut	Linear N-S orientated cut feature filled by [195]
197	8		4a	Post-ex plan Trench 8		Fill	Fill of cut feature [198]
198	8		4a	Post-ex plan Trench 8		Cut	Cut feature filled by [197]
199	6		4a	Pre+Post-ex plan Trench 6		Fill	Fill of E-W orientated ditch cut [200]
200	6		4a	Pre+Post-ex plan Trench 6		Cut	E-W orientated ditch cut filled by [199]
201	6		5	GPS		Fill	Backfill of brick structure [203]
202	6		5	Pre-ex plan Trench 6		Fill	Fill of construction cut [204] for brick structure [203]
203	6		5	GPS		Masonry	Brick lined pit tanning pit?
204	6		5	Pre-ex plan Trench 6		Cut	Construction cut for masonry structure [203]
205	6		4c	Pre-ex plan Trench 6		Masonry	Post-med brick soak away
206	6		4c	206, Pre-ex plan Trench 6		Cut	Construction cut for post-med soak away [205]
207	6		4c	Pre-ex plan Trench 6		Fill	Fill of post-med soak away [205]
208	6		4c	209, Pre+Post-ex plan Trench 6	13, 14, 15	Fill	Fill of post-med N-S orientated ditch cut [209]
209	6		4c	209, Pre+Post-ex plan Trench 6	13, 14, 15	Cut	N-S orientated ditch cut filled by [208]
210	6		4c	Pre+Post-ex plant Trench 6		Fill	Fill of linear cut feature [211]. Same as [208]
211	6		4c	Pre+Post-ex plant Trench 6		Cut	Linear cut feature filled by [210]
212	6		4a	Pre+Post-ex plant Trench 6	13, 14, 15, 16	Fill	Fill of earlier N-S orientated ditch cut [213]
213	6		4a	Pre+Post-ex plant Trench 6	13, 14, 15, 16	Cut	N-S orientated ditch cut filled by [208]
214	6		4a		14	Layer	Light yellowish brown layer
215	6		4a	Pre+Post-ex plant Trench 6	13, 14, 15, 16	Fill	Fill of N-S orientated ditch cut [216]
216	6		4a	Pre+Post-ex plant Trench 6	13, 14, 15, 16	Cut	N-S orientated ditch cut filled by [215]
217	6		5		14	Fill	Fill of cut feature [219]

Context No	Trench No.	Excavation area	Phase	Plan	Section	Type	Description
218	6		4c		14	Fill	Upper fill of N-S ditch cut [209]/[211]
219	6		5		14	Cut	Post med cut filled by [217]
220	6		4c			Fill	Fill of small truncated cut feature [221]
221	6		4c	221		Cut	Post-med cut filled by [220]
222	6		1	Pre+Post-ex plant Trench 6	14, 15, 16	Layer	Natural sandy gravel
223	6		3		16	Fill	Fill of cut [224]
224	6		3		16	Cut	Cut filled by [223]
225		Area 1	1	Post-ex plan Area 1	6	Layer	Natural sandy gravel
226		Area 1	1	Post-ex plan Area 1	8	Layer	Natural sandy gravel
227	3		1		10, 9	Layer	Natural sandy gravel
228		Area2	1		11	Layer	Natural sandy gravel
229		Area1	3		6	Layer	Alluvial silty clay layer
230	3		4b	232		Fill	Fill of cut [323]
231	3		4b	232		Fill	Horn core lining of tanning pit/cess pit
232	3		4b	232		Cut	Construction cut for tanning pit/cess pit
233	4		4a	112, 114		Structure	Post holes group/fence alongside south side of ditch [39]/[55]/[147]
234	3		4c	75		Structure	Brick lined tanning pit
235	3		4c	GPS		Structure	Tanning pits
236	3		5	GPS		Structure	Tanning pit?

12 APPENDIX 2: PLATES

Plate 1: Ditch cut [55]/[147]/[39] and structure [233] in Trench 4, looking West

Plate 2: Ditch cut [213] in Trench 6, looking North.

Plate 3: Horticultural cut features in Area of Excavation 1, looking North.

Plate 4: Horn core lined pit [47] in Area of Excavation 1, looking East.

Plate 5: Liming pit structure [119] in Trench 3, looking North.

Plate 6: Close up of timber sump/drain [109] within structure [119], looking North.

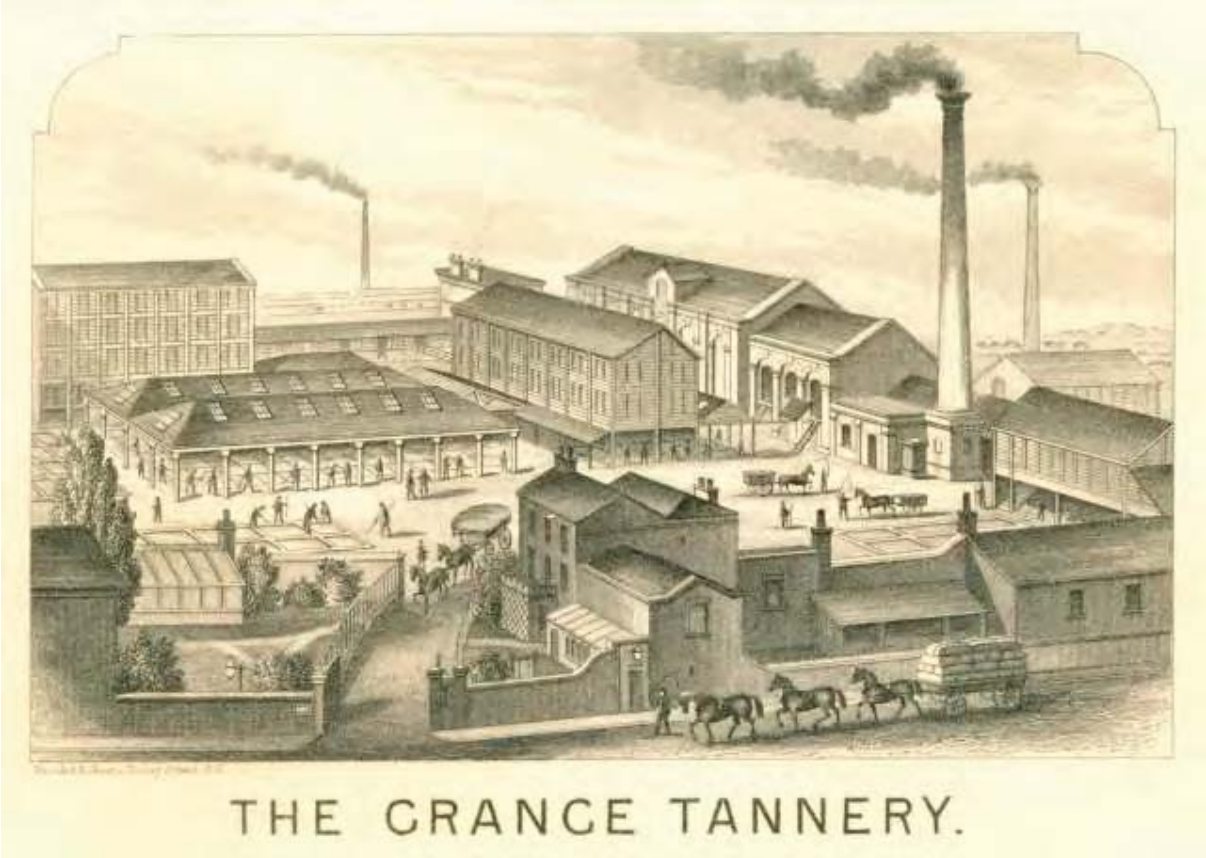
Plate 7: Liming pit structures [119] and [234] (right) in Trench 3, looking North.

Plate 8: Close up of timber sump/drain [124] within structure [234].

Plate 9: Masonry structure [235] in Trench 3, looking south.

Plate 10: Trench 8, looking south.

Plate 11: 1876 print of The Grange Tannery (http://www.ideal-homes.org.uk/southwark/assets/galleries/bermondsey/grange-tannery)



13 APPENDIX 3: POST-ROMAN POTTERY ASSESSMENT

By Chris Jarrett

INTRODUCTION

A small sized assemblage of pottery was recovered from the site (one box). The pottery dates from the medieval and post-medieval periods. None of the sherds show evidence for abrasion and so all were probably deposited fairly rapidly following breakage. However, the pottery is in a fragmentary state with very few vessels surviving with complete profiles and those that do are plates and saucers. The pottery was quantified by sherd count (SC) and estimated number of vessels (ENV's), besides weight. Pottery was recovered from 22 contexts and all in small (fewer than 30 sherds) groups of pottery.

The assemblage consists of 70 sherds / 67 ENV/1210g (of which one sherd, 1 ENV, 37g was unstratified). The assemblage was examined macroscopically and microscopically using a binocular microscope (x20), and entered into a database, by fabric, form and decoration. The classification of the pottery types follows the standard Museum of London Archaeology practices. The pottery is discussed by type and distribution.

THE POTTERY TYPES

The quantification of the pottery for each Post-Roman archaeological period is as follows:

Medieval: 1 sherd, 1 ENV, 5g

Post-medieval: 69 sherds, 66 ENV, 1205g

The range of pottery types present in the assemblage are shown in Table 1. The pottery is further discussed by period and the forms present in each type.

MEDIEVAL

A single sherd of London-type ware jug is present (context [83]) and is decorated with a vertical rib, a white slip coating and a green mottled clear glaze. The sherd may belong to one of two decorative categories, either the North French style or the highly decorative one (Pearce et al 1985) and therefore probably dates to between AD 1180-1350.

Pottery type	Fabric code	Date range	SC	ENV	Weight (g)
Medieval					
London-type ware	LOND	1080-1350	1	1	5
Post-medieval					
Surrey-Hampshire border wares					
Surrey-Hampshire border whiteware with green glaze	BORDG	1550-1700	3	3	25
Surrey-Hampshire border whiteware with yellow glaze	BORDY	1550-1700	3	3	39
Surrey-Hampshire border redware	RBOR	1550-1900	6	6	148
Surrey-Hampshire border redware with brown glaze	RBORB	1580-1800	2	2	28
Surrey-Hampshire border redware with slip-trailed decoration	RBORSL	1580-1800	1	1	8
London area coarse redware					
London-area post-medieval redware	PMR	1580-1900	20	18	540
Tin-glazed wares					
English tin-glazed ware	TGW	1570-1846	3	3	9
Tin-glazed ware with plain pale-blue glaze	TGW BLUE	1630-1846	4	4	28
Tin-glazed ware with plain white glaze (Orton style C)	TGW C	1630-1846	1	1	8
Tin-glazed ware with pale blue glaze and dark blue decoration (Orton and Pearce style H)	TGW H	1680-1800	7	6	53
Essex fine redwares					
Metropolitan slipware	METS	1630-1700	1	1	37
Post-medieval Essex black-glazed redware	PMBL	1580-1700	2	2	19
Post-medieval fine redware	PMFR	1580-1700	3	3	150
Non-local ware					
Combed slipware	STSL	1660-1870	1	1	5
Industrial finewares					
Creamware with developed pale glaze	CREA DEV	1760-1830	1	1	12
English stonewares					
London stoneware	LONS	1670-1926	2	2	28
White salt-glazed stoneware	SWSG	1720-1780	6	6	40
Dipped white salt-glazed stoneware	SWSL	1710-1760	1	1	22
Imported wares					
Chinese blue and white porcelain	CHPO BW	1590-1900	1	1	3
Westerwald stoneware with purple and blue decoration	WEST PURP	1665-1750	1	1	3

Table 1. GGK10: Pottery types. SC: sherd count; ENV: estimated number of vessels.

POST-MEDIEVAL

The Surrey-Hampshire border wares (Pearce 1992, 1999) account for 15 sherds/15 ENV/254g. The recognisable forms present in these wares are bowls (BORDY and RBOR), a bowl or dish (RBORSL), a chamber pot (BORDG) and a pipkin (RBOR). The London area coarse redwares are only present in the post 1580 dated PMR fabric (Nenk and Hughes 1999) and forms consist of bowls: handled and a medium flared example, a flower pot and a jar. The tin-glazed wares (Orton 1988) are found as a total of 15 sherds/14 ENV/103g and are in the form of a bowl (TGW H), chamber pots (TGW and TGW BLUE), plates (TGW H) and a mid 17th century porringer (TGW C). Amongst the Essex fine red earthen wares (Nenk and Hughes 1999) only an unstratified jug in Metropolitan slip ware could be identified, although sherds in PMFR were sooted and indicates a form used to cook in, while the sherds of PMBL were almost certainly from drinking forms. Non-local wares consist of a single handle in combed slipware (STSL) which may have been derived from a porringer.

A single sherd of a Developed Creamware rounded bowl represents the only industrial fineware in the assemblage. Stonewares occur with a total of 9 sherds / 9 ENV/90g and are noted in the form of a jar and a possible tankard sherd in LONS, while a medium rounded bowl, saucers and tea bowls are present in SWSG. Imported pottery (Hurst *et al* 1986) is restricted to two sherds/2 ENV/6g and is in the form of a Chinese porcelain blue and white saucer and a fragment of a possible jug in Westerwald stoneware (WEST PURP).

DISTRIBUTION

The distribution of the pottery is shown in Table 2 which conveys for each context containing pottery its phasing, size of the group, the number of sherds and ENV, besides weight. Additionally the date range of the latest pottery is shown (Context ED and LD), the types of pottery present and a considered deposition date. Pottery was recovered from Phases 3-5 and its distribution by each phase is briefly discussed. Pottery from context [7] was recovered during the archaeological evaluation and is included in this report for completeness.

PHASE 3

A total of 12 sherds/12 ENV/157g was associated with this phase. All was recovered from two alluvium layers in Trench 4 and all bar one sherd derived from context [42] which is spot dated to AD 1720-80. The majority of the pottery was from a London source (8 sherds/8 ENV/116g) and consists of the LOND medieval jug sherd (context [83]), besides later LONS, PMR and TGW H (as a bowl and plate). Smaller quantities of pottery were derived from a Surrey-Hampshire source (BORDY), a British one (STSL, SWSG and SWSL: as a bowl fragment).

PHASE 4A

The largest quantity of pottery was recovered from this phase with 46 sherds/43 ENV/793g. The main source of pottery continued to be from London (24 sherds/21 ENV/367g) mostly in the form of PMR as well as a slightly smaller quantity of tin-glazed wares. Surrey-Hampshire Border wares account for 11 sherds/11 ENV/220g and are more frequent on its redware (RBOR and RBORSL) fabrics compared to the whiteware. There are similar quantities of Essex wares (5 sherds/5 ENV/169g: PMBL and PMFR) and general British wares (5 sherds/5 ENV/34g: SWSG), besides a single sherd of German Westerwald stoneware (3g). In Evaluation Trench 4 pottery was recovered from ditches [31] (fills {29] and [30]), [37] (fill [36]), [55] (fill [54]), linear features [33] (fill [32]), [58] (fill [56]), [61] (fills [59] and [60]), cut [44] (fills [34] and [35) and post-hole [114] (fill [113]). In Trench 6, pottery was only recovered from ditch [200], fill [199]. In Excavation Area 2, pottery came from fill [167] of the linear ditch [168]. The forms and fabric types present in Phase 4a are summarised in Table 3. The date ranges for the deposition of the pottery in these features mostly vary between the 17th and 18th centuries (See Table 2).

Context	Phase	Assemblage size	Trench	SC	ENV	Weight (g)	Context ED	Context LD	Pottery types	Context considered date
7	-	S	-	2	2	8	1680	1800	BORDG, TGW H	1680-1800
29	4a	S	4	12	9	558	1580	1900	BORDG, PMR	1580-1700
30	4a	S	4	36	36	204	1665	1750	PMBL, PMFR, PMR, TGW, WEST PURP	1665-1700
32	4a	S	4	4	4	44	1720	1780	SWSG, TGW BLUE	1720-1780
34	4a	S	4	4	4	30	1630	1846	RBORSL, TGW BLUE	18TH C
35	4a	S	4	1	1	17	1720	1780	SWSG	1720-1780
36	4a	S	4	9	9	336	1570	1846	PMR, RBOR, TGW	Late 17th- early 18th century
42	3	S	4	99	99	1368	1720	1780	BORDY, LONS, STSL, SWSG, SWSL, TGW H	1720-1780
54	4a	S	4	36	36	576	1630	1846	BORDY, PMR, RBOR, TGW C	1630-1700
56	4a	S	4	12	9	81	1720	1780	SWSG, TGW BLUE, TGW H	1720-1780
59	4a	S	4	48	42	654	1720	1780	LONS, PMFR, PMR, RBOR, RBORB, SWSG	1720-1780
60	4a	S	4	30	30	735	1680	1700	PMFR, PMR, RBOR, TGW BLUE, TGW H	18th century
78	4c	S	3	4	4	22	1580	1900	CHPO BW, RBOR	18th century
83	3	S	4	1	1	5	1080	1350	LOND	1180-1350
113	4a	S	4	1	1	9	1550	1900	RBOR	1550-1900
126	4b	S	3	1	1	46	1580	1900	PMR	1580-1900
167	4a	S		1	1	1	1550	1700	BORDG,	1550-1700
169	5	S		9	9	72	1760	1830	CREA DEV, RBORB, TGW	1760-1830
171	5	S		1	1	12	1580	1900	PMR	1580-1900
174	5	S		4	4	238	1580	1900	PMR	1580-1900
199	4a	S	6	4	4	36	1580	1700	PMBL, PMR	1580-1700

Table 2. GGK10: distribution of pottery types showing the phase, the size/number of sherds (SC), ENV, weight in grams, the date range of the latest pottery type, the pottery types present and a spot date (context considered date) for each context Post-Roman pottery occurs in.

Excavation area	Trench No.	Feature	Context	Form (fabric code)
Area 1	4	Ditch [31]	29	bowl; handled (PMR), Chamber pot (BORDG),
Area 1	4	Linear feature [33]	32	Chamber pot (TGW BLUE)
Area 1	4	Cut [44]	34	Bowl or dish (RBORSL), chamber pot (TGW BLUE)
Area 1	4	Cut [44]	35	Saucer (SWSG)
Area 1	4	Ditch [37]	36	Bowl (PMR), pipkin (RBOR)
Area 1	4	Ditch cut [55]	54	Bowl (BORDY, PMR, RBOR), porringer (TGW C)
Area 1	4	Cut [58]	56	Plate (TGW H)
Area 1	4	Cut [61]	59	Jar (LONS), Tea bowls (SWSG)
Area 1	4	Cut [61]	60	Plate (TGW H)
Area 2	6	Ditch [200]	199	Jar (PMR)

Table 3. GGK10: Summary of identifiable forms and the fabrics they occur in as found in Phase 4a features and contexts.

PHASE 4B

Pottery in this phase was limited to Trench 3 with a single sherd of a PMR medium flared bowl which was recovered from fill [126] of the horn core lined pit [131] and could only be broadly spot dated to AD 1580-1900.

PHASE 4C

Only two sherds of pottery (2 ENV, 11g) of pottery were recovered from this phase and these derived from the upper fill [78] of tanning pit [119]. The pottery consisted of a sherd of red Surrey-Hampshire border ware and an 18th century fragment of Chinese porcelain from a blue and white saucer.

PHASE 5

This phase produced six sherds/6 ENV/155g of pottery recovered from three deposits. Four sherds/4 ENV/135g are from a London source mostly PMR, besides a sherd of TGW. There are also single sherds from a British source, found in the form of CREA DEV and a Surrey-Hampshire source noted as RBORB. All of the pottery was recovered from Area 2 and from three deposits. Fill [169] of the post-medieval square cut feature [170] produced single sherds of RBORB, a chamber pot in TGW BLUE and a rounded bowl in CREA DEV, the latter dating the deposit to AD 1760-1830. The linear east-west orientated cut feature [172] contained in its fill a sherd of PMR, broadly dated to AD 1580-1900 and found in an alluvial layer [174] in the form of PMR sherds, including the rim of a flower pot.

SIGNIFICANCE OF THE COLLECTION

The pottery has little significance at a local level. The assemblage largely follows the ceramic profile for London,

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14 APPENDIX 4: CERAMIC BUILDING MATERIAL ASSESSMENT

by Dr Kevin Hayward

INTRODUCTION AND AIMS

Four boxes of stone, ceramic building material, and mortar were retained from the excavations at Grange Walk, Bermondsey Spa, Southwark (GR 3379 7923).

This moderate sized assemblage (83 examples 15.1kg) was assessed in order to:

- Identify (under binocular microscope) the fabric and forms of the residual Roman, and medieval, ceramic building material recovered from Grange Walk
- Identify the fabric and form of whole bricks and mortar used in the post-medieval brick culvert [26] and fill [72] of the brick tanning pit [75].
- Identify the fabric of the unworked and worked stone objects in order to determine what the material was made of and from where it was coming from.
- Made recommendations for any further study.

METHODOLOGY

In accordance, with Pre-Construct Archaeology Ltd field sampling policy two whole brick samples were retained from the brick culvert [26] from the site.

The application of a 1kg masons hammer and sharp chisel to each example ensured that a small fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10). Matches were then made with the London fabric collection.

CERAMIC BUILDING MATERIAL

81 examples 13.1kg

ROMAN (including daub) 4 examples 0.4 kg

Small fragments of abraded Roman tile, brick and daub were identified from context [8] the fill of the earliest Phase 4a post medieval ditch [30] [54] [59]

Tile Fabrics

Sandy Fabric Group 2815 (AD 50-160) 3 examples 0.3kg
2452 (AD 55-160) *2459a* (AD 50-160);
All the brick and tile is represented by the very common mid first to early-mid second century London red sandy fabric group *2815*, including the very hard fine 2452 and the softer sandier 2459a variants.

Forms

The abraded and fragmentary nature of this small assemblage means only limited comment is necessary on their form. The tegulae fragment from the fill of the earliest Phase 4a post medieval ditch [54] has no definable form with the flange sheared off. The burnt brick fragment from [8] is thin (35mm) and probably once formed part of a small *bessalis*.

Daub 1 example 89g
An example of a sill shaped daub fragment from the Phase 4a fill of the Post Med ditch [59] is comparable to examples recovered from Stevens Street (Hayward 2012) and relates to a Romano-British timber framed wattle or daub structure

MEDIEVAL 13 examples 0.4 kg
Like the Roman assemblage, the medieval group is fragmentary and often abraded. It is represented solely by roofing tile.

Peg tile

The medieval peg tile from Grange Walk can be distinguished from the post medieval group on account of their coarse moulding sand, occasional splash glaze and fabric type.

Sandy London fabric *2271* (1180-1800) *2271v* (1180-1800)
Iron Oxide fabric *2586* (1180-1800); *2587* (1240-1450)

The Phase 4a fill of the post medieval ditch and layers [30] [54] [69] [81] [188] [199] included small quantities of fragmentary, abraded peg tile often intermixed with post medieval peg tile and brick. Their presence probably relates to the proximity of Bermondsey Abbey, where enormous quantities were identified (Hayward 2010).

POST MEDIEVAL 63 examples 12.3 kg

Fresh early post-medieval and post great fire brick, chimney fragments, peg, pan and floor tile dominate the post medieval sequence at Grange Walk.

BRICK 14 examples 7.1 kg

Early Post Medieval Reds 9 examples 0.8 kg
3046; 3065 (1450-1700)
The production of early-post medieval reds, including the very sandy *3046* and the pebble-rich *3065* variants in the City of London and Southwark are a feature of 16th-17th century buildings in the capital.

At Grange Walk they appear in Phase 4a post medieval agricultural layers [30] [54] [199] and post fill [113]. They are in a fragmentary condition, and one example shows sign of reuse [30]. Here, a soft white lime mortar (T3) is adhered to a broken surface of a *3065* brick

Post Great Fire *3032; 3034; 3032nr3035* 5 examples 6.3 kg
Only clinker rich, purple and yellow post great fire bricks were identified from the Phase 5 culvert structure [26] present on the site. The size of the two bricks (220mm x 100mm x 65mm) from the brick culvert [26] is typical of a late 18th century to early-mid 19th century date when the brick tax, restricting brick size was in operation. Furthermore, the hard lime shelly mortar (T1) is typical of a late 18th century early 19th century date as seen, for example in features from the British Museum (Hayward 2011). Also, one of the two bricks is a yellower Medway sub-type *3032nr3035* (1780-1900) manufactured only from the very latest 18th century onwards. One thinner, wider example from the Phase 4c fill of the brick tanning pit [72] has slag residue attached and is possibly earlier 18th century – early 19th century. It was evidently reused in some sort of industrial/manufacturing activity (liming) or possibly came from the brick structure of a tanning pit itself

Floor Tile 1 example 0.2 kg
Flemish unglazed *2850 (1600-1850)*
A charred, fragment of unglazed floor tile with attached slag from a Phase 4b drain fill [128] is a Flemish import and probably relates to industrial / manufacturing activity in the vicinity – possibly associated with the production and use of lime in the local tanning industries.

Chimney Fragments 2 examples 0.4 kg
2276 (1480-1900)
A bulbous, 18th-19th century fragment chimney form [34] with black soot, represents demolition debris from a building in the area.

Roofing Tile 45 examples 4.7kg

At Grange Walk, as with other tanning sites in Bermondsey such as the site of Sarsons Vinegar Factory (Hayward 2007), sizeable quantities of post-medieval peg and pan tile were found. It is possible that some of these may have been used to line the tanning pits.

Peg tile 23 1.4 examples kg
Sandy London fabrics *2276* (1480-1900); *3090* (1180-1800)

The post-medieval sandy fabric *2276* is especially common and is nearly always found in a fragmentary condition. The reuse of some of this tile is evident with a 18-19th century hard, dark-grey mortar (T4) adhering to examples from a post medieval ditch fill [34], another quartz rich lime mortar (T2) is reused on examples from a Phase 4a fill of agricultural pit [59] [60]

Pan tile 22 examples 3.3 kg
Sandy fabrics 2271 (1630-1800) *2279* (1630-1850)
Iron Oxide fabrics *2586* (1630-1800)
The fashion for using curved thick roofing tiles from the Low Countries only began after the first quarter of the 17th century. At Grange Walk there are very large, fresh fragments of sandy 2279 and iron oxide rich 2586 pan tiles from early post medieval Phase 4a [22] [34] agricultural fills as well as Phase 4b fill of horn-lined pit[126] [128].

MORTAR

A summary of mortar types and concrete as well as their period of use from the excavations at GGK10 are given below (table 1).

Mortar/Concrete Type	**Description**	**Use at GGK10**
T1 hard shelly lime mortar	Hard shelly lime mortar	Associated with brick culvert Phase 5 [26] Late 18th-Mid 19th century date
T2 Quartz rich lime mortar	Quartz rich lime mortar	Adhered to reused peg tile from Phase 4a [59] [60] and Phase 4a pan tile [22] 18th-19th century
T3 very white lime mortar	Very white fine lime mortar	Associated with the reuse Early Phase 4a post-medieval bricks e.g. *3065* from [30] probably 17th century
T4 Hard dark grey concretionary mortar	Hard dark grey concretionary mortar;	Adhered to late post medieval peg tile from [34]. 1830s-1900+

table 1 list of mortar types identified from the excavation GGK10

STONE 2 examples 2 kg

A very small group of unworked worked stone fragments was revealed; its geological character, source and use are summarised below. They both represent post medieval flooring materials.

Basalt *3120* is a *very hard dark grey fine igneous rock (Basalt)* - Source unknown probably northern Britain

A very hard basalt cobble from the fill of a post medieval brick tanning pit [78] is probably 18th or 19th century in date.

Purbeck Limestone *3126* – a *hard shelly oyster rich limeston*e – Upper Jurassic (Purbeckian) Isle of Purbeck, Dorset. Identified in a 20mm thick paving slab from a Phase 4a fill [60]. Although these limestones were used for medieval paving e.g. Tower of London, it is far more likely that this crisply dressed example was produced between AD 1700 and 1900 to meet the increased demand for interior and exterior paving in the capital (Stanier 2000).

PHASE SUMMARY

Roman activity

Although no material was recovered from Roman or medieval layers, there is a small quantity of residual abraded Roman ceramic building material and daub intermixed with the post medieval layers. This is to be expected given the proximity of the Roman dumps around the Bermondsey Abbey area.

Medieval activity

Although no material was recovered from the Phase 3 (medieval) layers there was a small quantity (400g) of residual abraded and glazed peg tile from the earliest Post Medieval Phase 4a agricultural ditch fill [30] [54] [69] [81] [188] [199]. Large quantities of medieval glazed roofing tile have been recovered from Bermondsey Abbey (Hayward 2010) so it is not surprising that a background scatter of such material has been identified from Grange Walk.

Early Phase 4a agricultural ditches

The widespread early post-medieval agricultural activity is represented by dumps of low-status peg tile and red brick, pan tile post great fire brick, chimney fragments intermixed with Roman and medieval ceramic building material. A fine white lime mortar T3 is associated with a post-medieval brick *3065* [30]. This brick is likely to be 17th century in date. Taking the assemblage as a whole this group probably dates to the 18th century.

Later Phase 4b and 4c Post Medieval Tanning Activity

The onset of the tanning industries in this part of Bermondsey, first employing timber and then in brick lined pits is marked by the reuse of post-great fire bricks [72] in the fill of the brick tanning pit [76]. This dates them to no earlier than the 19th century.

Later Phase 5

The 19th century residential development of this part of Bermondsey is marked by the use of narrow, well-made post-great fire bricks, found here in a solitary culvert [26] with a hard shelly lime mortar typical of late 18th to mid 19th centuries. What is more the small size of the bricks (220x100x65mm) conforms to the brick tax regulations from this period.

DISTRIBUTION

Spot dates GGK10

Bold shading = masonry features

Context	Fabric code	Description	No	Date	Suggested spot date cbm	Spot date latest mortar
8	2452; 2271V	Roman Brick; Medieval/ early post medieval peg tile	4	55-1600	1500-1700+	No mortar
22	3032; 2276; 2279; 3101	Pan Tile, Post Great Fire Brick; Post medieval sandy peg tile T1 and T2 mortar	3	1480-1900	1700-1850	1775-1850
26	3032; 3101	Unfrogged narrow post great fire bricks; T1 pale grey soft shelly mortar 220x100x65mm	2	1664-1900	1780-1900	1775-1850
30	2276; 3065; 2271V; 2459a;m 3101	Abraded Roman tile fragment, early post medieval brick T3 Mortar and peg tile; coarse medieval peg tile	14	50-1900	1600-1800+	1600-1700 (residual)
34	2276; 2279; 3101	Chimney fragments, post medieval peg and pan tile with hard dark grey T4 mortar	7	1480-1900	1750-1900	1830-1900
36	2276	Abraded burnt post medieval peg tile	1	1480-1900	1600-1900	No mortar
48	2276; 2586	Abraded medieval peg tile and post medieval peg tile	2	1180-1900	1600-1900	No mortar
54	2271; 3046; 2452; 2279; 2586	Roman Tegula, abraded medieval peg tile, early post medieval brick and pan tile	9	55-1850	1630-1850	No mortar
56	2276	Burnt post medieval peg tile	1	1480-1900	1600-1900	No mortar
59	2586; 3102; 2276; 2452	Moulded daub; post medieval and medieval peg tile; Chimney fragment	4	1500bc-1900	1700-1900	No mortar
60	2276; 2279; 3126; 3101	Purbeck limestone flagstone; post medieval peg and pan tile T2 mortar	5	1400-1900	1700-1850	1750-1850
68	2276	Post medieval peg tile	2	1480-1900	1600-1900	No mortar
69	2271	Abraded medieval peg tile	1	1180-1800	1500-1800+	No mortar
71	2279; 2276; 2586	Pan tile; medieval and post medieval peg tile	4	1180-1900	1630-1800+	No mortar
72	3032	Burnt Thinner and wider Post Great Fire brick slag attached; mortar removed	1	1664-1900	1700-1900	No mortar
78	3120	Basalt stone cobble	1	1700-1900	1700-1900	No mortar
81	2271; 2587	Abraded medieval glazed and unglazed peg tile	3	1180-1800	1240-1450+	No mortar
104	2271	Peg tile unglazed	1	1180-1800	1180-1600+	No mortar
113	3065	Early post medieval brick poorly made	1	1450-1700	1500-1700+	No mortar
126	2279	Pan tile	2	1630-1850	1630-1850	No mortar
128	2279; 2850	Pan tile; burnt Flemish floor tile	6	1600-1850	1630-1850	No mortar
169	2276; 3090	Post medieval peg tile	4	1180-1900	1450-1800	No mortar
188	2271	Abraded medieval peg tile	2	1180-1800	1500-1800+	No mortar
199	2587; 3046; 2276	Glazed medieval peg tile; post medieval peg tile and brick	3	1240-1900	1480-1800+	No mortar
220	2279; 3032	Post Great Fire brick and pan tile fragment	2	1630-1900	1664-1900	No mortar

RECOMMENDATIONS / POTENTIAL

Although, the building material assemblage recovered from Grange Walk has been useful in dating the later 18th and 19th century industrial and residential development of this part of Bermondsey, in terms of individual pieces the interest is largely unremarkable.

For publication it is recommended that a summary review of the Roman material, medieval and post-medieval building material assemblage with reference to the tanning industries is included.

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15 APPENDIX 5: CLAY TOBACCO PIPE ASSESSMENT

By Chris Jarrett

Introduction

A small sized assemblage of clay tobacco pipes was recovered from the site (one box). Most fragments are in a good condition, indicating that they were deposited soon after breakage. Clay tobacco pipes occur in seventeen contexts, mostly in small (under 30 fragments) groups, except for one medium sized group (31-100 fragments).

All the clay tobacco pipes (96 fragments of which four are unstratified) were entered into a database and classified following Atkinson and Oswald's (1969) typology (AO) and the 18th-century examples follow Oswald's (1975) typology and prefixed OS. All decorated and maker marked pipes were given a unique registered find number. The pipes are further coded by decoration and quantified by fragment count. The degree of milling on 17th-century examples has been noted and recorded in quarters, besides their quality of finish. The tobacco pipes are discussed by their types and distribution.

THE CLAY TOBACCO PIPE TYPES

The clay tobacco pipe assemblage from the site consists of 38 bowls, 55 stems and one nib (mouth part). The clay tobacco pipe bowls range in date between AD 1660 and 1800. All of the bowls show evidence of having been used for their intended purpose.

1660-1680

AO13: one heeled bowl of a fair quality with three quarters milling of the rim and found in context [54].

AO15: eight spurred, rounded bowls of a fair finish, with a quarter (one example), half (four examples) and three quarters milling (as a single example). Singular AO15 bowls were noted in contexts [56] and [111] and two examples each were found in contexts [29], [30] and [54].

AO18: three straight-sided, heeled bowls of which all are of a fair finish and have damaged rims, although each one showed evidence for milling. Single examples were noted in contexts [29], [30] and [54].

AD 1680-1710

AO20: two heeled bowls with rounded profiles, both are of a fair finish and have their rims missing. The bowls were solely recovered from context [54].

AO21: one heeled bowl with a rounded front and straight back with a fair finish and without milling and it was recovered from context [30].
AO22: eight heeled bowls with straight sides and all if which have a fair finish. Only three of the bowls have surviving rims where the extent of milling can be confidently calculated. Two bowls lack milling, while one has a quarter milling. The bowls were recovered from contexts [30] with three examples, whereas context [54] has four examples and [68] has a single bowl.

AD 1730-1780

OS12: one heeled, upright type bowl with its heel missing was found in context [60].
OS22: a single spurred upright bowl with a rounded front, context [32].

AD 1760-1800

OS23: two spurred bowls with a straight back and less rounded front than the OS22 type, both of which were recovered from context [59], one of which has its spur missing. Both bowls were recovered from context [59].

Undated bowls

There are eleven bowls which are too fragmentary to assign to a type, although some have characteristics of certain periods: two surviving spurs from bowls can be broadly dated to AD 1660-1710 (contexts [128] and [174]) and five can be assigned to the AD 1680-1710 period (contexts [30] and [54]).

DISTRIBUTION

The tobacco pipes are found in Phases 4a, 4b, 4c and 5 and their distribution is shown in Table 1.

Summary of distribution

Phase 4a
Excavation Area 1, Evaluation Trench 4

A 1660-80 dated AO15 bowl was recovered from post hole [112] (fill [111]), while the stems were recovered from post holes [114] and [155] (fills [113] and [154] respectively). Another AO15 bowl was recovered from fill [56] of the linear feature [58]. The majority of clay tobacco pipes in this phase were recovered from ditches. Bowl types of a AD 1660-80 date were found in ditches [31] (fill [29]) and [39] (fill [38]), while clay tobacco pipe bowls of a AD 1680-1710 date were the latest types in ditches [31] (fill [30]) and [55] (fill [54]). Another feature with AD 1680-1710 bowls being the latest types was the

agricultural feature [70] (fill [68]). Later 1730-80 dated bowls were recorded as an OS12 bowl found in fill [32] of the linear agricultural feature [33] and as an OS22 bowl in fill [32] of the linear feature [33]. Another linear feature [61] produced in its fill [59] two OS23 bowls dated to AD 1760-1800.

Evaluation Trench 6

Another feature with the latest bowl types dated AD 1680-1710 was the east-west linear ditch [200] (fill [199]).

Context	Phase	Trench No	Assemblage size	No. of fragments	Context ED	Context LD	Bowl type	Context considered date
7	-		s	1	1580	1910	Stem	1580-1910
29	4a	4	S	6	1660	1680	X2 AO15, x1 AO18, x3 stems	1660-1680
30	4a	4	M	31	1680	1710	X2 AO15, x1 AO18, x1 AO21, x3 AO22, x1 heel, x2 spurs, x1 nib, x20 stems	1680-1710
32	4a	4	S	3	1730	1780	X1 OS22, x2 stems	1730-1780
38	4a	4	S	3	1660	1680	Bowl fragment, x2 stems	1660-1680
54	4a	4	S	24	1680	1710	X1 AO13, x2 AO15, X1 AO18, X2 AO20, X4 AO22, x9 stems	1680-1710
56	4a	4	S	5	1680	1710	X1 AO15, x 4 stems	1660-1680
59	4a	4	S	2	1760	1800	X2 OS23	1760-1800
60	4a	4	S	2	1730	1780	X1 OS10, x 1 stem	1730-1780
68	4a	4	S	5	1680	1710	X1 AO22, x 4 stems	1680-1710
72	4c	3	S	1	1580	1910	Stem	1580-1910
111	4a	4	S	2	1660	1680	X1 AO15, x1 stem	1660-1680
113	4a	4	S	1	1580	1910	Stem	1580-1910
128	4b	3	S	3	1660	1710	Bowl spur, x2 stems	1660-1710
154	4a	4	S	1	1580	1910	Stem	1580-1910
174	5		S	1	1660	1710	Bowl spur	1660-1710
199	4a	6	S	3	1580	1910	Bowl fragment	Late 17th–18th century

Table 1. GGK10. Distribution of the tobacco pipes showing the phase, number of fragments and size of the group, the date range of the clay tobacco pipes, the dates of the latest clay tobacco pipe bowl present (Context ED and LD), the range of bowl types and a considered deposition spot date for each context. The clay tobacco pipe stem from context [7] was recovered from the evaluation and it is included in this report for completeness.

Phase 4b

Evaluation Trench 3

The north-South ditch/drain cut [129] produced in its fill [128] the spur of a bowl that can only be broadly dated to 1660-1710.

Phase 4c

A single clay tobacco pipe stem, broadly dated 1580-1910, was recovered from fill [72] of pit [76].

Phase 5

The alluvial layer [174] produced the spur of an AO15 or AO19 bowl which can only be broadly dated to 1660-1710.

SIGNIFICANCE OF THE COLLECTION

The clay tobacco pipes have little significance at a local level and it is assumed that the assemblage is predominantly derived from sources on the vicinity of the site. The bowl types present fit within the typology for London and that of Southwark. Of interest is the fact that none of the bowls survive with makers marks. This would normally be expected for the London area during the mid to late 17th century and the practice of tobacco pipe makers marking their pipes resumed c.1680, albeit in limited numbers, although makers' marks are more common place from c.1700. Maker marked pipes may reflect a more costly item and their absence on this site may suggest that the end users were of a low socio-economic status. Other assemblages of clay tobacco pipes, which include notable quantities of pipes with makers' marks, have been recovered from sites in the vicinity, *e*.g. Bermondsey Square and Stevens Street (Jarrett 2010; 2012).

POTENTIAL OF THE COLLECTION

The clay tobacco pipe assemblage has little potential beyond dating the contexts in which the pipe fragments occur. None of the material requires illustration.

RECOMMENDATIONS FOR FURTHER WORK

There are no recommendations for further work. If information is required for a publication then the detail should be taken from this report.

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16 APPENDIX 6: GLASS ASSESSMENT

By Chris Jarrett

Introduction

A small sized assemblage of glass was recovered from the site (one box). The glass dates to the post-medieval periods. Most of it is fragments and show no or little evidence for abrasion and were probably deposited fairly rapidly after breakage. A notable quantity of the glass fragments does have natural weathering surface modification resulting from burial conditions. The state of fragmentation for the assemblage consists of single fragments with few diagnostic parts present making it difficult to assign precise shapes to the vessels. The glass was quantified by the number of fragments and it was recovered from eight contexts and each individual deposit produced a single fragment, so only small groups (fewer than 30 shards) are present in the assemblage.

All of the glass (eight fragments, of which none are unstratified) was recorded in an Excel spreadsheet, by type colour and form. The assemblage is discussed by the vessel shapes, *etc*. and its distribution.

GLASS CATALOGUE

The glass forms could only be determined as to generic wine bottle fragments, which could not be assigned to exact shapes, although the fragments did have some chronological characteristics, besides two fragments of vessel glass (indeterminate forms) and one fragment of window glass.

Wine bottles

Natural dark olive green glass, wall/base of a globular shape wine bottle, free-blown, one fragment, context [30]. Mid 17th-early 18th century.
Natural dark olive green glass, wall fragment of a rounded or globular shape, free-blown, heavily weathered, one fragment, context [36]. Mid 17th-early 18th century.
Natural olive green glass, shoulder fragment, free-blown, slightly weathered, one fragment, context [59]. Post-medieval.
Natural dark olive green glass, base fragment with a kick, free-blown, heavily weathered, one fragment, context [113]. Possible mallet-type wine bottle, End of the 17th-mid 18th century
Natural dark olive green glass, base/wall fragment of a rounded or globular shape, free-blown, heavily weathered, one fragment, context [126]. Mid 17th-early 18th century

Vessel glass

Clear soda glass, moulded panel fragment, context [34]. 18th-19th century.
Blue-green natural glass with air bubbles, wall fragment, free-blown, one fragment, context [171]. Post-medieval.

Window glass

Colourless, thin walled, context [7]. Post-medieval.

DISTRIBUTION

The glass occurs in Phases 4a, 4b and 5. Its distribution is shown in Table 1.

Context	Phase	Excavation area/Trench No.	No. of fragments	Size	Form	Spot date
7	-	-	1	S	Window pane	Post-medieval
30	4a	Area 2/4	1	S	Wine bottle	Mid 17th-early 18th century
34	4a	Area 2/4	1	S	Vessel	18th-19th century
36	4a	Area 2/4	1	S	Wine bottle	Mid 17th-e 18th c
59	4a	Area 2/4	1	S	Wine bottle	Post-medieval
113	4a	Area 2/4	1	S	Wine bottle	Late 17th-mid 18th c century
126	4b	-/3	1	S	Wine bottle	Mid 17th-early 18th century
171	5	Area 2/-	1	S	Vessel	Post-medieval

Table 1. GGK10. Distribution of the glass showing the phase, trench, number of fragments, size of the group, the form and a considered deposition spot date for each context. The window pane fragment from context [7] was recovered from the evaluation and it is included in this report for completeness.

SIGNIFICANCE OF THE COLLECTION

The glass assemblage has no significance at a local level, although it derived from contexts across the site. The fragmentary nature and small quantity of the glass renders the relating of the assemblage to activities on the site difficult. Wine bottles are the most frequent form in the present and this generally correlates with other assemblages of London glass for the post-medieval period and particularly from the mid 17th century onward.

POTENTIAL OF THE COLLECTION

The glass assemblage has little potential beyond broadly dating the contexts in which they occur. None of the material requires illustration.

RECOMMENDATIONS FOR FURTHER WORK

There are no recommendations for further work on the glass assemblage and if information is required for a publication then the detail should be taken from this report.

17 APPENDIX 7: METAL FINDS ASSESSMENT

By Märit Gaimster

Just over 30 metal objects were retrieved from the excavations; they are listed in the table below. The finds are dominated by iron nails and heavily corroded and fragmented iron objects, with the largest single assemblage pertaining to Phase 4a.

Phase 4a: mid- to late 18th century
Among the twenty-five objects are a fragment of lead window came and several heavily corroded iron objects, including straps and a possible knife handle with pistol-shaped end (sf 3). The base of a tinned copper-alloy composite button (sf 2) may originally have had a cast decorated face (cf. Noël Hume 1969, fig. 23 Type 6)

Phase 4b: late 18th- to early 19th centuries
The two finds retrieved from Phase 4b comprise an incomplete pinned iron strap hinge (sf 4), likely originating from a door, and a probable simple wire bucket handle of copper alloy.

Phase 4c: ?1830-1878
Three objects came from Phase 4c, including a small D-shaped iron buckle (sf 5).

Phase 5: late 19th- to early 20th centuries
The only metal object retrieved from this phase was a socketed iron hook (sf 1) of the same type and fashion as a so-called shunter's pole, used to hook and unhook the chains of loose-coupled wagons without the danger of getting caught between the vehicles.

Recommendations
The metal finds from Grange Walk form an integral part of the material recovered during excavation and should, where relevant, be included in any further publication of the site. This is particularly recommended for the small group of personal objects, in the form of the copper-alloy button (sf 2), the iron buckle (sf 5) and the possible composite knife (sf 3), the iron strap hinge (sf 4) and the shunter's pole (sf 1). For this purpose, x-raying is required of the buckle, the possible knife and the hinge. X-raying is also recommended to aid identification of a further group of heavily corroded iron objects; these have all been marked in the table below. Following publication, iron nails and undiagnostic iron objects can be discarded.

References:

Noël Hume, I. 1969. *A Guide to Artefacts of Colonial America*. University of Pennsylvania Press, Philadelphia.

Phase 4a: mid- to late 18th century				
context	**sf**	**description**	**pot date**	**recommendations**
29	2	copper-alloy button; slightly domed and tinned back of composite button; sturdy wire loop; diam. 21mm	1580-1700	
		iron nail; incomplete	1580-1700	
30	3	?composite handle; incomplete and heavily corroded with slightly pistol-shaped end; L 55mm; W 12mm	1665-1700	x-ray
		iron nails; six incomplete	1665-1700	
48		iron ?object; fragment only	n/a	x-ray
54		iron ?straps; four pieces; W 12 and 17mm; L 50–80mm	1630-1700	x-ray
		iron ?object; curved piece; L 120mm	1630-1700	x-ray
		iron nails; seven incomplete	1630-1700	
59		lead window came; fragment only; L 50mm	1720-1780	
		iron nail; incomplete	1720-1780	
113		iron ?object; flat-section strap with angled end; W 20mm; L 120mm	1550-1900	x-ray
146		iron nail; incomplete	n/a	
Phase 4b: late 18th- to early 19th centuries				
context	**sf**	**description**	**pot date**	**recommendations**
126	4	iron pinned strap hinge; incomplete; W 35mm; L 90mm+	1580-1900	x-ray
		copper-alloy wire ?handle; neatly folded hook at one end; L 295mm	1580-1900	
Phase 4c: ?1830-1878				
context	**sf**	**description**	**pot date**	**recommendations**
77		iron nail; incomplete	n/a	
171	5	iron buckle; D-shaped but heavily corroded; W 30mm; L 23mm	1580-1900	x-ray
		iron ?nail; long and tapering with flat section; L 150mm	1580-1900	x-ray
Phase 5: late 19th- to early 20th centuries				
context	**sf**	**description**	**pot date**	**recommendations**
19	1	iron hook; complete with tapering socket; L 305mm; hook W 70mm	n/a	

18 APPENDIX 8: ANIMAL BONE ASSESSMENT

By Kevin Rielly, May 2013

Introduction

This site is located in the south-eastern part of Bermondsey. The excavations produced evidence for some prehistoric activity overlain by alluvial deposits dating to the early post-medieval era. Features dated to the next two centuries initially suggested a horticultural and / or agricultural use of this area as witnessed by elongated features as well as ditches, (Phase 4a generally dated to the latter half of the 18th century), followed by evidence for tanning activities, initially demonstrated by a number of pits lined with cattle horncores (Phase 4b) and then by a series of timber- and brick-lined tanning pits (Phase 4c). The latter phase undoubtedly relates to the 19th century Grange Tannery, the known area of this tannery complex overlapping the site perimeter. Small quantities of animal bones were found in each of the later post-medieval phases, largely comprising cattle horncores taken from the aforementioned pit linings.

Methodology

The bone was recorded to species / taxonomic category where possible and to size class in the case of unidentifiable bones such as ribs, fragments of longbone shaft and the majority of vertebra fragments. Recording follows the established techniques whereby details of the element, species, bone portion, state of fusion, wear of the dentition, anatomical measurements and taphonomic including natural and anthropogenic modifications to the bone were registered. The cattle horncore assemblage was recorded following the criteria described in Armitage (1982), while calculations of shoulder heights were based on multiplication factors given in Driesch and Boessneck (1974). Measurements mentioned in the text are after von den Driesch (1976)

Description of faunal assemblage by phase

The site provided a total of 90 animal bones, all recovered by hand and all in a good state of preservation with minimal levels of fragmentation.

Phase 4a

Just 24 animal bone fragments were recovered from 9 features, 4 ditches (with 6 bones) and 7 possible horticultural trenches (24 bones). This assemblage includes a general mix of skeletal parts, mainly identified as cattle, alongside some sheep / goat, pig and a single equid bone (a complete femur). The length of this bone at 437mm can be translated to a shoulder height of 1533.9mm, denoting a moderately sized horse. Two relatively deep cut marks, one at the proximal (caput) and one at the distal (lateral condyle) end clearly show that some use had been made of this carcass, with meat removed perhaps for human consumption or more likely for dog food. Horse bones are relatively common in this area dating to the 18th century, no doubt representing waste derived from local knackers yards supplying skins to the local tawyers (horse was included with the light leather rather

than the heavy i.e. cattle, leather trade) and, as demonstrated by a relatively high proportion of butchered bones, some meat to various local outlets (see Rielly 2011).

Phase:	**4a**	**4b**	**4c**
Species			
Cattle	10	59	1
Cattle-size	3		3
Equid	1		
Sheep/Goat	4		3
Sheep-size	5		
Pig	1		
Total	**24**	**59**	**7**

Table 1: Counts of hand collected animal bones in each occupation phase

Phase 4b

This phase provided the largest group of bone found at this site. The assemblage is almost entirely composed of cattle horncores, a total of 57 fragments (the remaining 2 fragments are cattle skull pieces), with the vast majority including bases i.e. the area of attachment to the skull. These were principally recovered from the lining [46] of pit [47] (41 fragments) with further examples from the lining [126] of pit [131] (6 fragments) and also from the fill [128] of drain [129] (10 fragments). Most of these cores are quite large, as can be gauged by the general size range of the bases (few cores were complete which precludes a comparison of their length) as shown in chart 1, using the Basal Circumference.

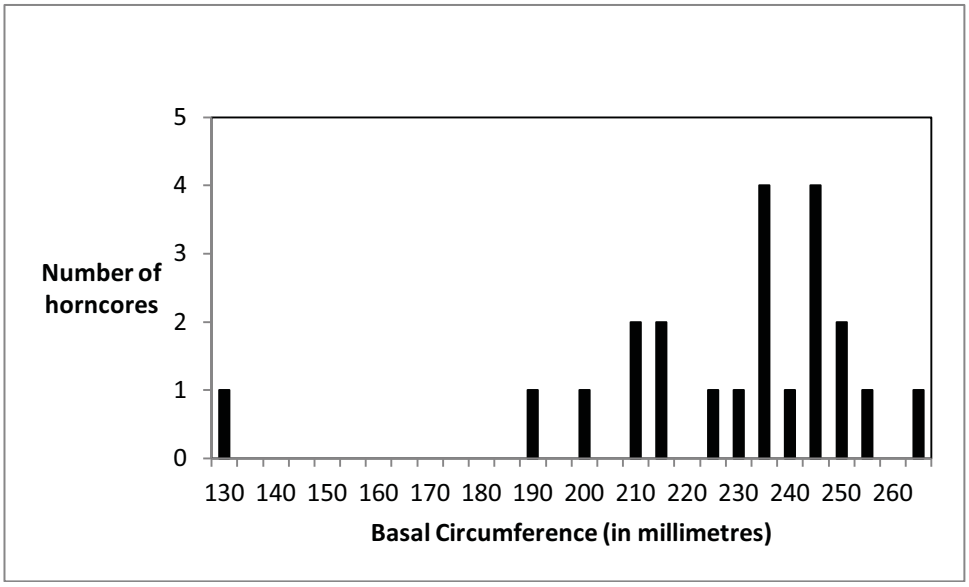

chart 1. Size of cattle horncores based on the Basal Circumference

Studies of cattle horncores from post-medieval London sites have tended to employ the seminal work by Armitage (1982), who divided his archaeological dataset into three size groups, based on the length of the cores, thus: - Shorthorn (less than 220mm), Mediumhorn (220 to 360mm) and Longhorn (greater than 360mm), equating the latter 'type' with the unimproved longhorns which began entering the London meat markets in the 17th century. West (1995) working on a vast array of cattle horncores from the Royal Naval Victualing Yard just east of the Tower, provided approximate parameters whereby Armitages 'types' could be inferred from basal horncore measurements. Using these parameters, it can be shown that the example to the left of the distribution in chart 1 is most likely a Shorthorn, those to the right of approximately 240-245mm are clearly Longhorns while the remainder can be classed as Mediumhorned / Longhorned. Armitage also established methods, based on certain characteristics, whereby his dataset could be aged and sexed. Taking all this information into account, it was possible to approximate the age, sex and / or 'type' of the majority of the horncores from this site, as shown in Table 2. Notably a large proportion of these cores are within the largest 'types' and, perhaps surprisingly, there is a general mix of ages including a significant number of sub-adults. Surprisingly only if these represent hornworking waste, where it can be imagined that these would preferentially include fully formed cores, thus maximizing the quantity of raw material (the hornsheaf) available for working purposes. These cores, in contrast, probably represent waste items from one or more local tanneries. It is generally understood that skins were sent on to the tanner, via the butcher / abattoir, with part of the skull, including the horns, as well as the foot bones still attached (see Serjeantson 1989, 129 and Yeomans 2004, 71). In effect, it can be suggested that these cores can provide a cross section of the animals (or rather their skins) provided to these tanneries.

Age	**Type**	**Sex**	**N**
Subadult (2 to 3yrs)	Medium/longhorn		12
	Medium/longhorn	Ox	1
	Longhorn		9
	Longhorn	Ox	1
Young adult (3 to 7 years)	Shorthorn	Ox	1
	Medium/longhorn		5
	Medium/longhorn	Ox	8
	Medium/longhorn	Cow	1
	Longhorn		9
	Longhorn	Bull	1
	Longhorn	Ox	1
	Longhorn	Cow	1
Adult (7 to 10 yrs)	Medium/longhorn		3
	Medium/longhorn	Ox	1
	Longhorn		1
	Longhorn	Bull	1

	Longhorn	Cow	1

Table 2. Representation of cattle horncores by age, 'type' and sex (after Armitage 1982) recovered from the fill [128] of drain [129] and the linings [46] and [126] of pits [47] and [131 respectively.

There are numerous examples of horncore-lined pits in this general area, dating from the 17th century, clearly making use of the excessive quantities of tanning waste for building purposes. The availability of such waste would have undoubtedly increased moving into the 18th century as more and more tanning yards were established in Bermondsey (see Rielly 2011).

Phase 4c

The quantity of bones from the active tanning complex deposits was very small, just 7 fragments. There were no cattle horncores, although the single cattle fragment, a skull piece, could conceivably represent tanning waste. The sheep / goat bones include two metapodials which could also equate to tanning waste, although these are perhaps unlikely to derive from the tannery in operation during this phase. The two leather industries, heavy and light, mentioned above in Phase 4a, were strongly advised to work separately, with heavy penalties incurred if a tanner was found to be preparing for example cattle and sheep skins in the same establishment (ibid). As the 19th century Grange Tannery was clearly involved with the heavy side of the industry, it follows that the sheep metapodials found in Phase 4c deposits will have derived from some other tannery specialising in the light leather trade.

Conclusion and recommendations for further work

This site provided a rather small quantity of bones, which can essentially be divided into general domestic waste (Phase 4a), industrial relating to the tanning industry (Phase 4b) and then a probable mixture of these two sources (Phase 4c). It is relatively common, in Bermondsey, for tanning sites to provide very few waste items related to this industry. This is undoubtedly related in part to the vast quantities of waste which could accumulate necessitating clearing out on a regular basis. In addition, a proportion of the various waste parts would have been sent on to associated industries, such as hornworkers, boneworkers and glue manufactures. The quantity of waste also facilitated the construction of features incorporating cattle horncores (as described above) and footbones (more specifically metapodials) i.e. knuckle-bone floors. The horncore-lined pits at this site appear to predate tanning activity on this site, following a general trend whereby such pits are very rarely located on active tanning sites (see Rielly 2011). However, such features clearly offer clues regarding the extent of the nearby tanning enterprises as well as information on the type, size and age of the animals used in this industry. It is notable that while several examples of such pits have been found in Bermondsey, very few horncore collections have been the subject of any serious study. It was mentioned that the initial work on these parts was carried out by Armitage (initially in Armitage and Clutton-Brock 1976 and then in Armitage 1982), but these works (also including West 1995) all feature evidence from sites in the eastern part or just outside the City of London.

In conclusion it is recommended that any further work on this collection features a thorough analysis of the cattle horncores, with reference to the previously mentioned studies north of the river.

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19 APPENDIX 9: ENVIRONMENTAL ASSESSMENT

By Lisa Snape

INTRODUCTION

This report summaries the results of the assessment of the from bulk samples taken during an evaluation at Grange Walk, London Borough of Southwark. Samples were obtained from a series of prehistoric features, early Post-Medieval ditches and agricultural features and 19th century timber-and brick-lined tanning pits. The aim of this environmental assessment was to evaluate the potential of these deposits for understanding the environmental conditions at the site.

METHODOLOGY

Six bulk samples were processed by bucket flotation following Kenward *et al*., 1980. The samples had a noxious odour, and they were processed in a well ventilated area. The small is likely to have derived from the samples originating from waste generated in the process of tanning of animal hides. The flot (light fraction) was captured using a 300micron mesh and the remaining residue (heavy fraction) was collected using a 1mm sieve. The processed samples were dried at room temperature, and sieved through a 4, 2 and 1mm sieve stack to aid the sorting of residues. The residues were scanned 'by-eye' to extract artefacts such as pottery, animal bone and unfloated organic remains such as charcoal and hazelnuts. The abundance of each was recorded from 1-4 on *pro-forma* sheets (1: occasional, 2: fairly frequent, 3: frequent and 4: abundant) and then entered into the database.

RESULTS

The results obtained from these samples are presented in table 1 and are discussed in detail below.

				Flot						Residue													
				Carbonised		Non-carbonised				Carbonised		Non-carbonised											
Sample number	Context number	Context type	Volume of sample processed (litres)	Charcoal	Seeds/cereal grains	Seeds	Wood	Shell	Animal hair	Charcoal	Coal	Animal bone	Marine shell	CBM	Daub	Glass	Pot	CTP	*Fe*	Burnt flint	Clinker	Stone	Lime nodules
<10>	[72]	Fill	10	-	-	-	1	-	2	-	1	1	1	2	-	1	1	1	-	-	-	1	-
<12>	[151]	Fill	7	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	4
<13>	[30]	Fill	23	-	-	3	-	4	-	3	1	1	1	-	-	-	-	1	1	-	-	-	-
<14>	[77]	Fill	7	1	1	2	4	-	-	-	-	-	-	1	-	1	-	-	1	-	-	-	-
<15>	[120]	Fill	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<16>	[146]	Fill	22	1	1	-	-	2	-	3	-	1	1	1	-	-	1	1	1	1	-	-	-
<17>	[164]	Layer	30	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-

Table 1.

DISCUSSION AND CONCLUSION

Phase 2: Prehistoric (Mid Bronze-Age/Late Iron-Age)

Sample <17> from context [164] was taken from an alluvial silty clay layer in (Trench 3/Area of Excavation 1) . Only a few fragments of charcoal were found in the residue, no organic material was preserved in the flot. Features found include a ditch and pit which contained pottery dated to the Mid Bronze-Age/Late Iron-Age. No further datable material was obtained from this sample. A small fragment of daub was found in the residue. Fragments of daub may be derived from various components of buildings or cultural activity on site.

Phase 4a: Post-Medieval

A number of early post-medieval ditch cuts and agricultural features were found. Sample <13> context [30] was taken from a fill of a ditch [31] which was dated to the mid to late 18th century. The flot material produced frequent mollusc remains, charcoal and uncharred seeds along with occasional cereal grains. Charcoal, coal and Fe was extracted from the residue which may be the remnants of industrial processes taking place nearby. Occasional large animal bone and a small limb bone from a field vole/ or mouse (Rielly pers. comm. 2013) and fragments of a clay pipe was also found in the sample. The presence of uncharred material suggests watterlogging preserved this material.

Samples <16> context [146] was obtained from the fill of ditch cut [147]. Organic material was fairly abundant in the flot. Charcoal, charred and uncharred seeds and mollusca was found. The residue produced a range of archaeological material such as charcoal, animal bone, shell, CBM, CTP and burnt flint. The presence of uncharred material suggests watterlogging preserved this material.

Phase 4c: Post-Medieval

Four samples were obtained from the 19th century timber and brick lined tanning pits. Sample <10> context [72] was taken from the lower fill of tanning pit [76] structure [234]. This sample produced wood chips, animal hair, coal, shell, CBM, daub, glass, pot, CTP and stone.

Samples <12> context [151] was taken from the fill of timber box [109] at the base of timber lined tanning pit [119]. L The contents of this timber box drain consisted of a white waxy lime mixture which suggests that this was a ‘lime pit’. Low quantities of organic material was retrieved from the flot, this includes occasional charcoal fragments, uncharred seeds, and wood. In addition, industrial debris such as clinker and calcareous nodules (1-2 cm in size) was found in the residue. The presence of uncharred material suggests watterlogging preserved this material.

Samples <14> context [77] was taken from a fill of a timber sump structure [234]. Organic material in the flot was fairly frequent, seeds, charcoal and wood chips were noted. Other artefactual material obtained from the residue includes coal, animal bone, shell, CTP, glass and Fe.

Samples <15> context [120] is a sub-sample of the lining of tanning pit [119]. This shows the built up of calcareous material over-time when the lime-pit was functioning.

RECOMMENDATIONS

Due to the small number of samples taken from the site, no further work is recommended. However, if fieldwork is planned for the future, our understanding of the environmental conditions of the site and its surroundings will be more thoroughly understood. Sub-samples were retained from all bulk samples processed. These may be analysed in the future to identify geochemical signatures associated with certain tanning processes. The abundance of wood and charcoal would be suitable for analysis and identification. The animal hair found in samples <10> and <12> would have potential for further analysis. Little work has been undertaken on animal hair from tanning pits; this would complement the extensive faunal assemblages found in association with the tanning industry in Bermondsey.

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20 APPENDIX 10: OASIS REPORT FORM

OASIS ID: preconst1-149206

Project details	
Project name	GRANGE WALK, BERMONDSEY SPA, SOUTHWARK, SE16 3QN
Short description of the project	An archaeological investigation (Phase 2) on land at Grange Walk, Bermondsey Spa, London Borough of Southwark SE16, was undertaken by Pre-Construct Archaeology Ltd. on behalf of United House. Natural sands and gravels were recorded from an uppermost elevation of 1.83m OD in the north part of the site. In the south part of the site the natural sands and gravels were found at 1.53m OD. The natural exhibited a general downward northern inclination. The investigation revealed evidence of prehistoric activity (Phase 2) localized in the north part of the site. Evidence of alluvial deposits dated to the early post-medieval period (Phase 3) was identified. Finds dated to the Roman and medieval periods together with artefacts dated to the medieval and post-medieval period were retrieved from this horizon. Evidence of agricultural activity was identified on the study site (Phase 4a). Horticultural cut features and post medieval ditches were observed across the site. Finds dating to mid to late 18th century were recovered from Phase 4a. The investigation revealed significant evidence of post-medieval activity across the site (Phase 4b). Horn core lined pits were observed. Evidence of structures directly associated with the tanning process was identified during the archaeological investigation (Phase 4c). Timber and brick lined pit structures were interpreted as liming and tanning pits associated with the 19th century Grange Tannery complex.
Project dates	Start: 18-06-2012 End: 14-09-2012
Previous/future work	Yes / Not known
Any associated project reference codes	GGK 10 - Sitecode
Type of project	Field evaluation

Site status (other)	Archaeological Priority Zone
Current Land use	Vacant Land 1 - Vacant land previously developed
Monument type	DITCH Late Iron Age
Monument type	PITS Middle Iron Age
Monument type	PITS Post Medieval
Monument type	LAMING TANKS Post Medieval
Monument type	TANNING PITS Post Medieval
Significant Finds	POTTERY Late Iron Age
Significant Finds	POTTERY Middle Bronze Age
Significant Finds	POTTERY Roman
Methods & techniques	"Environmental Sampling","Sample Trenches","Targeted Trenches"
Prompt	Direction from Local Planning Authority - PPS

Project location

Country	England
Site location	GREATER LONDON SOUTHWARK BERMONDSEY ROTHERHITHE AND SOUTHWARK GRANGE WALK, BERMONDSEY SPA, SOUTHWARK
Postcode	SE16 3QN
Study area	105.00 Square metres
Site coordinates	TQ 3381 7922 51 0 51 29 44 N 000 04 19 W Point
Height OD /	Min: 1.00m Max: 2.00m

Depth	

Project creators	
Name of Organisation	Pre-Construct Archaeology Limited
Project brief originator	Pre-Construct Archaeology Ltd
Project design originator	Peter Moore
Project director/manager	Peter Moore
Project supervisor	Ireneo Grosso
Type of sponsor/funding body	Commercial Developer
Name of sponsor/funding body	United House

Project archives	
Physical Archive recipient	LAARC
Physical Contents	"Animal Bones","Ceramics","Environmental","Glass","Metal","Worked stone/lithics"
Digital Archive recipient	LAARC

Digital Contents	"Stratigraphic","Survey"
Digital Media available	"Database","Images raster / digital photography","Spreadsheets","Survey","Text"
Paper Archive recipient	LAARC
Paper Contents	"none"
Paper Media available	"Context sheet","Correspondence","Diary","Drawing","Matrices","Photograph","Plan","Report","Section","Survey "
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	GRANGE WALK, BERMONDSEY SPA, SOUTHWARK, SE16 3QN
Author(s)/Editor(s)	Grosso, I
Date	2010
Issuer or publisher	Pre-Construct Archaeology Ltd
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Entered by	Ireneo Grosso (igrosso@pre-construct.com)
Entered on	29 April 2013

Please e-mail English Heritage for OASIS help and advice

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