Mitigation Report

London Gateway Rail Corridor Broadhope Loop

Mitigation Report

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LONDON GATEWAY
RAIL CORRIDOR MITIGATION
ARCHAEOLOGICAL 'STRIP, MAP AND SAMPLE'
EXCAVATION REPORT

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NON-TECHNICAL SUMMARY

Between 11th and 20th April 2012 Oxford Archaeology, on behalf of DP World London Gateway, carried out archaeological investigations in the western section of the London Gateway Rail Corridor near Mucking, Thurrock, Essex (NGR: TQ 684 816). The mitigation programme utilised the 'strip, map and sample' method to investigate and record archaeological features that would be disturbed during re-alignment of the existing Thameshaven Branch Line of the London, Tilbury and Southend Railway (the re-aligned section is referred to as the 'Broadhope Loop'). The main stripped area formed the middle section of the Broadhope Loop, to the south-west of the Anglian Water Sewage Works (Fig. 2, Area 1- 4500m²). A much smaller excavation took place to the south of Area 1, next to the existing railway line (Fig. 2, Area 2 - 157m²). The two areas were separated and constrained by the Coryton gas pipeline.

A ditch oriented NNW-SSE divided Area 1, with a second curving ditch on a WNW-ESE alignment on its west side. The second ditch contained a single sherd of middle Bronze Age pottery, the first ditch was undated, and there was no relationship between them. In the area surrounded by these ditches was a cluster of 5 pits or postholes, three in a north-south line, with two adjacent to the west. Two among them contained small quantities of middle Bronze Age pottery.

East of the ditch was a line of 4 postholes or very small pits oriented SW-NE, with two larger pits astride the middle of the line. One of the pits contained a little middle Bronze Age pottery, while the other pit had pockets of fire-reddened clay and traces of charcoal at the base. South-east of the line was the base and lower body of a pot set upright into the ground, truncated by ploughing. The base and lower body of a second pot, also set upright, were found in the ploughsoil within 10m of pot 107. Neither pot contained any cremated bone, so these were probably not cremation urns. A further two isolated pits were identified further to the NE, one of which produced a single sherd of pottery, probably Bronze Age.

In Area 2 a third ditch ran WSW-ENE, roughly at right angles to the ditch in Area 1. This was more substantial than the others, but did not contain any finds. A third pot set upright into the ground was found to the north of this. Again, no cremated human remains were found in association with this vessel, but charred flax seeds came from wet-sieving of the fill.

All of the dated features have been assigned to the Middle Bronze Age (c. 1500 - 1200BC) on the basis of 607 potsherds recovered from nine features. Context 142 contained a fragment with an applied cordon decorated with finger-nail impressions, a trait of the Deverel-Rimbury stylistic tradition of the Middle Bronze Age. All of the pottery is made in coarse, flint-tempered, hand-made fabrics typical of this period. The vast majority of the sherds (589) came from the three pots set upright in the ground.

Middle Bronze Age settlements often appear as dispersed unenclosed groups of pits and postholes with few clearly defined structures. In other areas of SE England the land is divided by systems of ditched fields and enclosures, but settlement is often sparsely distributed within them, as at Heathrow (Lewis et al 2010). As none of the ditches here is securely dated, either could be the case here. An extensive system of middle Bronze Age fields was found at Mucking less than 2km to the west, of which this could perhaps be another part.

Pots buried in the ground are better known from late Bronze Age than middle Bronze Age settlements, as at Reading Business Park (Moore and Jennings 1992). A group of three is unusual. In the absence of cremated bone these pots could be interpreted as storage vessels, or possibly as ritual deposits. The discovery of charred flax is significant, suggesting their possible use for seed or food caches. Flax has been found on a number of Bronze Age sites (see Appendix C) and would have been a valued source of edible oil as well as fibre.

The evidence adds to the developing picture of the important Bronze Age settlement and funerary landscapes of the Mucking area. The features uncovered in the Broadhope Loop excavation show the extensive character of Middle Bronze Age settlement and agricultural land-use in the vicinity of Mucking Creek in the mid-late 2nd Millennium BC.

1 INTRODUCTION

1.1 Project planning background

1.1.1 This report details the results of archaeological mitigation arising from the development by DP World London Gateway of a rail connection to serve the London Gateway Port and Park development, in Stanford-le-Hope and Mucking, Essex (Fig. 1).

1.1.2 The Rail Corridor comprises part of the London Gateway development and its potential impact on cultural heritage was assessed as part of the Environmental Statement presented at Public Inquiry in 2002. The outline planning approval (OPA) for the London Gateway park was granted in May 2007 by the then Secretary of State. Secretary of State's approval for the related port development was also issued in May 2007 under Harbour Empowerment Order (HEO) procedures following the same Public Inquiry, and this came into force in May 2008.

1.1.3 Areas that lie within the OPA and HEO boundaries are covered by the London Gateway Archaeological Mitigation Framework (AMF). Compliance with the AMF is a condition attached to planning consent for the HEO and Reserved Matters for the OPA. The scope of the mitigation in relation to the Rail Corridor was defined in a site specific Archaeological Project Design (APD) produced by OA in March 2012, as required by the AMF. This report describes the results of mitigation in the Broadhope Loop section of the Rail Corridor.

1.1.4 The Secretary of State's policy on archaeological remains and how they should be preserved or recorded, is set out in Planning Policy Statement 5. It indicates the need to take account of known archaeology in development proposals and to ascertain the extent of further archaeological remains which may be affected by the proposed development.

1.1.5 The guidance states that in the case of nationally important archaeological remains the presumption should be in favour of their preservation *in situ*. Where preservation *in situ* is not justified it advises that it is reasonable for planning authorities to require the developer to make appropriate and satisfactory provision for excavation and recording of remains.

1.2 Location and scope of work

1.2.1 The Broadhope Loop lies in famland at the western end of the London Gateway rail corridor, in the parishes of Stanford-le-Hope and Mucking, Essex (NGR: TQ 684 816, Figs 1 and 2).

1.2.2 The rail route for the most part follows the line of the existing Thames Haven Branch of the London, Tilbury and Southend Railway. Previous assessment (OA March 2012) established that the ground within the existing rail corridor had been extensively disturbed by previous railway construction, and that the ground levels were to be extensively built up within the floodplain areas of the London Gateway development. There were therefore no significant archaeological impacts anticipated along most of the rail route, except for the Broadhope Loop and Mucking Creek sections where the route was to be realigned (Fig. 2). This report presents the interim results of archaeological mitigation - comprising a 0.46 Ha 'strip, map and sample' excavation - in the

Broadhope Loop section. Monitoring work at the crossing of Mucking Creek is still ongoing, and will be the subject of an updated report when complete.

1.2.3 The archaeological mitigation was carried out using the 'strip, map and sample' excavation method with the aim of recording any heritage assets that may have been affected by the development.

1.3 Geology and topography

1.3.1 The site is located on undifferentiated head deposits (Fig. 2, based on British Geological Survey (BGS) digital mapping). The head deposits were formed in either the late Wolstonian glacial period or the Ipswichian interglacial period. The overlying soils were formed in the Holocene period and were found to be c. 0.5 thick.

1.3.2 Both areas were generally level ground. Area 1 lay at 6.48m aOD at the north-east end, and rose to 8.21m aOD at the south end. Area 2 lay at 8.09m aOD at the north end, dropping to 7.68m aOD at the south end.

1.4 Archaeological background

1.4.1 A full archaeological and historical background was included in the project design prepared by Oxford Archaeology (OA 2012). The rail route as a whole crosses a variety of geological/ topographical zones, each with different characteristics and archaeological potential. For assessment purposes the route was divided into 'mitigation zones' defined on the basis of BGS mapping.

1.4.2 The Broadhope Loop excavation lies entirely in an area of head deposits (Mitigation Zone 1), which have the potential to contain geoarchaeological features dating from the Palaeolithic onwards. Handaxes were recorded in a gravel pit in the vicinity in the late nineteenth century. There are no other recorded archaeological sites in this zone in the immediate vicinity of the rail route. The potential for unexpected discoveries was considered moderate. Historic patterns of settlement in the area appear to favour locations on the adjacent areas of river terrace gravels rather than the clay soils predominant in areas of head, although this may in part be a matter of differential archaeological visibility. Archaeological sites which have formed on the head deposits since the end of the last ice age lie at shallow depth and have typically been eroded by ploughing in recent centuries.

1.4.3 The Taplow Gravel formation (Mitigation Zone 2) is mapped by BGS in areas adjacent to the Broadhope Loop site and partly within it (although in fact no gravel was encountered in the strip, map and sample area). The river terrace gravels in general have the potential to contain palaeolithic remains and appear to have been favoured as settlement locations since at least the Bronze Age. The extensive multi-period remains found at Mucking, during excavations from 1965-78, in the western side of the parish (c.1.5km to the south-west of the Broadhope Loop), conform to this general pattern (Clark 1993). Neolithic/ Bronze Age features included traces of burial mounds and a late Bronze Age settlement enclosure - Mucking South Ring. Another late Bronze Age enclosure - Mucking North Ring - was excavated in 1978 on the same gravel terrace, on high ground overlooking Mucking Creek (Bond 1988), c. 1km to the south-west of the Broadhope Loop.

1.4.4 Recorded archaeological sites on river terrace deposits in the immediate vicinity of the Broadhope Loop include finds from a Roman burial, found in 1886 c.100 metres north of Mucking Church, comprising a flask, a bowl and a beaker, dated to the 2nd century AD (OA 6, Fig. 3). A group of historic buildings within Mucking

village, c. 400m south of Broadhope Loop, also lie on terrace gravels. These include the 12th century parish church (OA 129), the vicarage (OA 128) and Mucking Hall (OA 130).

1.4.5 Most of the surface gravel deposits in the vicinity were quarried away during the 20th century - without archaeological record. The boundaries of the quarried areas were generally apparent on the ground in the surrounding fields as sharp drops in elevation which are marked on Ordnance Survey mapping (see Fig. 3). The adjacent Anglian Water Sewage Works appears to been built in a previously quarried area.

2 EXCAVATION AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The mitigation aims were:

1. To determine and/or confirm the general nature of any remains present.
2. To determine and/or confirm the approximate date or date range of any remains, by means of artefactual or other evidence.
3. To assess the depth and extent of archaeological deposits.

2.2 Methodology

2.2.1 The methodology was detailed in a site-specific Archaeological Project Design developed within the context of the Archaeological Mitigation Framework (AMF) (OA, last updated March 2012). The investigation strategy was determined in consultation with Gill Andrews, the London Gateway Archaeological Liaison Officer (ALO), and the local authority archaeological advisor, Richard Havis (ECC Historic Environment Branch), to ensure compliance with the aims and methods of the AMF.

2.2.2 The mitigation areas were excavated by two 13 ton 360º mechanical excavators, fitted with toothless ditching buckets. The mechanical excavation was carried out under the archaeological supervision of experienced archaeological staff. The areas were excavated to a depth of up to 0.6m.

2.2.3 Archaeological deposits were excavated by hand to assess their depth and extent. All excavated deposits were recorded through digital photography, drawn and written records. Where appropriate environmental samples were retained for investigation. All excavations were surveyed using a GPS to accurately record the position of the excavations in the landscape.

3 RESULTS

3.1 Presentation of results

3.1.1 The deposits revealed through the excavations are listed in Appendix A. A general description of the ground conditions and the distribution of archaeological deposits is provided below.

3.2 Conditions and extent of fieldwork

3.2.1 The overall ground conditions on the site were moderate to poor. Heavy rainfall made working conditions difficult, but at no point was the site flooded, so the wet conditions did not substantially impede the mitigation. Ephemeral prehistoric archaeological features, including boundary ditches, postholes and buried pots were successfully identified and investigated.

3.2.2 Area A was the main stripped area, which extended from the Anglian Water Sewage Works as far as the Coryton Gas Pipeline. Area 2 was a narrow trench excavated between the gas pipeline and the existing railway.

3.2.3 With the agreement of the local authority archaeological advisor Richard Havis, soil stripping was not carried out in the narrow southern strip of the Anglian Water Access Road strip, alongside the existing railway, as the density of archaeological features discovered further was very low, and access along the strip had to be maintained for construction traffic.

3.3 Soil sequence

3.3.1 The overlying deposits across the area consisted of 0.1m – 0.2m of turf overlying a firm mid to dark greyish brown clayey silt up to 0.4m thick (see Plates 7 and 8). This soil had clearly been mixed by cultivation, but one of the buried Bronze Age pots was recovered partially intact from this layer (Plate 1), indicating limited disturbance from ploughing (the land is currently under pasture). Below this was a sandy clay with frequent gravel inclusions. The underlying geology consisted of orange-brown clay Head Deposits.

3.4 Archaeological features in Area 1 (Fig. 3)

3.4.1 This area was divided by a ditch that ran NNW-SSE across the area, with a group of pits and/or postholes to either side. The western group of features was bounded on the south by a second, slightly curving ditch on an ESE-WNW alignment. This ditch terminated within the excavation on the south-east, but continued beyond it on the north-west. The western group of features consisted of 5 possible postholes in north-south lines, the eastern group comprised a line of postholes oriented SW-NE, with two pits along the same line, and an outlying posthole to the south-east. Two isolated pits were found towards the north end of the area.

3.4.2 Ditch 121 was oriented NNW-SSE (Fig. 4b). It was up to 0.59m wide but only survived 0.09m deep. The fill (122) was a friable dark brownish grey silty clay with small stone inclusions. No artefactual evidence was recovered.

3.4.3 The second ditch (104) was located to the south-west of this ditch. This was oriented WNW-ESE with a depth of 0.23m and a width of up to 0.75m (Fig. 4a). The fill (105) comprised a compact mid greyish brown sandy silt with small stone inclusions (Plate 5), as well as pottery of Middle Bronze Age date.

3.4.4 In the area between these two ditches there were five discrete sub-circular or circular pits or postholes (Fig 5a-e). Three of these formed a north-south line over a distance of just over 4m, with two others 1.5m to the west (Fig. 3). Of these, four (numbers 123,125, 129 and 130) were all very similar in plan and in profile (Fig. 5a-d). They ranged from 0.45m to 0.7m in diameter with depths ranging between 0.2m and 0.25m. All had steep sides and flat bases (Plate 4). The fifth pit (132) was shallower than the others with a more concave base (Fig. 5e). All had single fills with the exception of 129, which contained a sequence of three fills. Worked flint was recovered from the fill of 123, whilst pottery of middle Bronze Age character was recovered from the fills of 125 and 130.

3.4.5 A roughly linear arrangement of postholes and pits was observed to the NE of ditch 121. This consisted of four probable postholes (110. 111, 112 and 127) aligned SW to NE over a distance of 6m, and two possible pits (109 and 128) in the middle of the line (Figs. 6a-f). All of the postholes were sub-rectangular in plan and of similiar diameter (0.22-0.3m) but ranged in depth from 0.08m to 0.27m. The fills of these features were broadly similar, comprising greyish brown silty or sandy clays. No finds were recovered to assist in dating.

3.4.6 In the same cluster of features were two sub-circular pits. Pit 109 (Fig. 6a) was 0.92m long, 0.76m wide and 0.14m deep. The fill (114) was a compact mid to dark

brownish grey clayey sand with small stone inclusions. At the very base there were traces of reddening in the natural, and very thin and barely descernible traces of charcoal across part of the base and up the lower sides (Plate 3). The second pit 128 (Fig. 6f) was more substantial and measured 0.84m by 0.74m and survived to a depth of 0.32m. It contained a single fill (138) similar to that in pit 109 and contained fragments of pottery of middle Bronze Age character.

3.4.7 In addition to the features described above, two buried pots were recovered in this area. The base and lower body of a vessel (107), which was buried upright (Plate 2) came from pit or posthole (113), which lay 2m east of pit 128. This was very similar to the possible postholes just to the north-west, being sub-rectangular, 0.25m across and surviving to 0.10m deep (Fig. 7a). The base and lower body of a second vessel (106), again buried upright, was recovered from within the subsoil less than 10m from feature 113. No cut was observed for this vessel, which was cut through during machining, as a result of being within the ploughsoil (Plate 1).

3.4.8 In the northern corner of Area 1 a small sub-circular posthole (100) was revealed, measuring 0.4m x 0.35m and 0.22m deep (Fig. 8a). It contained no artefactual evidence in its fill. A small pit (102 Fig. 8b)ed a single sherd of pottery of similar character to the middle Bronze Age material.

Area 2

3.4.9 In this area a small oval pit (141) was observed, which contained the remains of a buried pot. The pit was 0.4m by 0.3m across, and survived to a depth of 0.14m (Fig. 7b). The fill (142) comprised a friable dark brownish grey silty clay with small stone inclusions. Sherds from a coarse ware vessel of middle Bronze Age character were recovered.

3.4.10 To the south of this pit a WSW--ENE aligned ditch (139) was revealed (Fig. 4c). The ditch was 1m wide, 0.4m deep, and was observed over a length of 2m, continuing in both directions beyond the limits of excavation. The fill (140) was compact dark greyish brown sandy clay with small stone inclusions (Plate 6). No finds were recovered from the fill.

3.5 Finds summary

3.5.1 A total of nine features contained an assemblage of 607 pottery fragments allowing a confident estimate of age. The vast majority of the sherds derived from three separate vessels: Pot 107 was found in pit 113; pot 142 was found in pit 141; Pot 106 was found in the ploughsoil and had no discernible pit cut). A number of pottery fragments were also recovered during soil stripping which could not be directly related to any particular feature. All of the sherds were made from a coarse fabric and were flint tempered. The entire assemblage appears to date from the middle Bronze Age.

3.5.2 A single fragment of fired clay, possibly briquetage, was recovered from the fill of pit 130. Worked flint was recovered from two features (123 and 233) which were both pits within the same group in Area 1.

3.6 Environmental summary

3.6.1 Two environmental samples were recovered - Sample <100> was taken from context 108, the fill of a buried pot found within cut 113. Sample <101> was taken from context 142, and was likewise taken from a pot fill, from within cut [141]. Both pots have been dated to the middle Bronze Age on typological grounds. The

samples were taken primarily to establish whether any cremated bone was present. A third buried pot was recovered from the ploughsoil in a highly fragmented and disturbed state and could not be sampled.

3.6.2 The two samples were processed to assess charred plant remains, bone and small artefacts. Both samples were found to contain small quantities of abraded pottery. No cremated bone was observed in either of the samples.

3.6.3 Both samples contained numerous modern roots, in addition to the following plant remains:

3.6.4 Sample <100> contained occasional items of charcoal greater than 2mm in diameter. Seeds included one charred example of Lotus type. An uncharred poppy seed and a fragment of Chenopodium type seed (goosefoot) may be modern intrusions.

3.6.5 Sample <101> produced numerous charred flax seeds. A very small number of charcoal fragments were also observed, but were rarely above 2mm in diameter. The large size of the flax seeds suggests that they are of a cultivated variety and the relatively high concentration of seeds (around 50 individual seeds) in a small volume of soil (2.5L), together with the fact there was little other material within the vessel fill, may indicate that the seeds represent a deliberate deposit, although the reason for charring is unclear and later intrusion cannot be ruled out. The only way of establishing whether the seeds are contemporaneous with the pot would be to obtain an AMS radiocarbon date on the seeds, and this would certainly be possible. Flax was cultivated during the Bronze Age - Seeds have been recorded in Bronze Age contexts from Runnymede Bridge, for example (Grieg 1991, 259).

4 DISCUSSION

4.1 Reliability of field investigation

4.1.1 The methodology employed allowed an accurate understanding of the deposits encountered. Despite poor weather conditions and the resultant weathering, ephemeral prehistioric archaeological features were successfully identified, sampled and recorded.

4.2 Objectives and results

4.2.1 The project objectives were to determine or confirm the general nature of any remains present, to establish the date of any remains, by means of artefactual or other evidence. These aims were largely achieved as far as possible given the limitations of the archaeological data. The ditches identified were not successfully dated as they produced insufficient artefacts, and no organic charred material suitable for radiocarbon dating was recovered from them. There is some potential for post-excavation analysis of the buried pot deposits, in particular to confirm and refine the date of the buried pot deposits through radiocarbon dating.

4.3 Interpretation

4.3.1 The features located within the site, whilst relatively sparsely distributed, provide significant evidence for activity during later prehistory. The vast majority of the pottery recovered, from pit deposits and ditches, belongs to the Deverel-Rimbury style, which is characteristic of the Middle Bronze Age (1500-1200 BC).

4.3.2 Three ditches were recorded - two in Area 1 and one in Area 2. Ditches 121 in Area 1 and 139 in Area 2 were approximately at right angles to one another, so could possibly belong to one system of fields, but neither was dated. The ditch in Area 2 was however markedly more substantial than that in Area 1. The two ditches in Area 1 were more difficult to detect and shallower than the ditch in Area 2, and possibly represent a different phase of enclosure. The difference in depth is unlikely to be explained by differential plough erosion in Areas 1 and 2, as the buried Bronze Age pots in the same areas exhibited similiar degrees of truncation.

4.3.3 The excavated slot across ditch 104 produced a small assemblage of middle Bronze Age pottery, and its proximity to the group of middle Bronze Age pits, and the slight curve suggesting that it enclosed them, could indicate that they were contemporary. Since ditch 121 was undated, and the alignments of ditches 104 and 121 are dissimilar, it is difficult to determine any association between the two ditches, or to suggest that they enclosed the group of pits or postholes between them. The group of pits or postholes between ditches 104 and 121 were not aligned in relation to ditch 121.

4.3.4 Three of these features formed a short north-south line, but none of the other features in this group form significant patterns. Slightly more ephemeral features could have been lost to plough truncation so it is unclear whether the line represents part of a built structure. One of the two western features (132) was much more irregular, and shallower, than the others, and may have been a natural rather than a man-made feature.

4.3.5 The alignment of small pits or postholes (110, 111, 112 and 127) lay east of ditch 121, and was aligned diagonally to it. Two of the buried pots lay adjacent. The

posthole arrangement may suggest a temporary structure such as a fence or hurdle. If so, the pits were clearly not contemporary, as they were situated astride the line. The fills of these pits did not indicate their purpose; there was limited reddening of the natural (115) in the bottom of pit 109, and a very thin layer of charcoal, possibly suggesting limited *in situ* burning or the dumping of the remains of a fire in the open pit.

4.3.6 The vast majority of the pottery sherds derived from three separately buried pottery vessels. Deverel-Rimbury vessels are most commonly found as cremation burial vessels, but this does not appear to be the case here. Despite the high degree of truncation, such that only the base and lower body of the vessels survived, some fragments of charred human bone would be expected if these had been cremation urns. None of the three vessels produced any evidence for cremated bone, either during hand excavation or wet-sieving of soil samples.

4.3.7 Vessels set into the ground within settlements are more common in the late Bronze Age, as for instance at Reading Business Park (Moore and Jennings 1992), and these are usually interpreted as storage vessels. Examples of middle Bronze Age Bucket Urns set into the ground without cremated bone are however known in the middle Thames Valley at Dorney (Allen et al. forthcoming). The discovery of a substantial assemblage of charred flax seeds within vessel 142 here is particularly significant, perhaps indicating the sorts of foods that were stored, whether for consumption or as seed for sowing. Flax is a source of edible oil as well as fibre, and is known to have been cultivated in Britain in the Bronze Age (see Brossler 2004 and Appendix C.1).

4.3.8 It is also possible that these vessels indicate a repeated ritual act of deposition, perhaps related to the agricultural cycle. This might explain why the flax seeds were charred, but this remains speculative, and is not currently paralleled in Southern Britain.

4.4 Requirements for further work

4.4.1 This report serves as an interim record of the fieldwork results from the London Gateway Rail Corridor. It does not include firm recommendations for post-excavation analysis and reporting at this stage. The AMF requires that significant results be published in an appropriate academic format, but the London Gateway construction programme is at a comparatively early stage and the most appropriate form for publication of the rail corridor work is not clear at present. The results are not sufficiently extensive to justify a free-standing publication. The results from previous London Gateway excavations, of Iron and Roman salterns found at Stanford Wharf Nature Reserve, are to be published shortly as a monograph (due November 2012). There is insufficient connection between the Broadhope Loop and Stanford Wharf material to justify inclusion of the results in that publication. It is most likely that the results will be analysed and published alongside results from future mitigation work, such as planned excavations along the Main Port and Park Access Road.

4.5 Acknowledgements

4.5.1 Oxford Archaeology would like to thank Marcus Pearson, Chris Webb and Emma Pearson of DP World London Gateway, and Gill Andrews (ALO), for facilitating the works, and Richard Havis (Essex County Council Historic Environment Branch) for monitoring and advice during the fieldwork.

4.5.2 Brian Dean (Field Supervisor) supervised the fieldwork on behalf of OA, under management of Stuart Foreman. Emily Plunkett and Ian Cook assisted with the excavation.

4.6 Location of archive

4.6.1 The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with the Thurrock District Museum in due course.

APPENDIX A – CONTEXT INVENTORY

Area 1

General Description:
This area was located in the northeast of the corridor and represents the majority of the corridor to be investigated.

Orientation: NE-SW

Average Depth: 0.5m

Width: 20m

Length: 225m

Contexts

Context No.	Type	Width (m)	Depth (m)	Comment	finds	date
100	Cut	0.36	0.24	Cut of posthole	-	-
101	Fill	0.36	0.24	Fill of posthole 100	-	-
102	Cut	0.78	0.16	Cut of pit	-	-
103	Fill	0.76a	0.16	Fill of pit 102	Pottery	BA-IA
104	Cut	0.75	0.23	Cut of ditch	-	-
105	Fill	0.75	0.23	Fill of ditch 104	Pottery	MBA
106	Pottery	-	-	Buried pot	Pottery	MBA
107	Pottery	-	-	Buried pot	Pottery	MBA
108	Fill	0.27	0.1	Fill of pit 113	Pottery	MBA
109	Cut	0.76	0.14	Cut of pit	-	-
110	Cut	0.24	0.08	Cut of posthole	-	-
111	Cut	0.31	0.27	Cut of posthole	-	-
112	Cut	0.22	0.16	Cut of posthole	-	-
113	Cut	0.27	0.1	Cut of pit (containing buried pot 107)	-	-
114	Fill	0.76	0.14	Fill of pit 109	-	-
115	Layer	0.76	0.16	Natural deposit	-	-
116	Fill	0.24	0.08	Fill of posthole 110	-	-
117	Fill	0.31	0.27	Fill of posthole 111	-	-
118	Fill	0.22	0.16	Fill of posthole 112	-	-
119	Layer	-	-	Head deposits	-	-
120	Layer	-	0.6	Ploughsoil	Pottery	MBA
121	Cut	0.59	0.09	Cut of ditch	-	-
122	Fill	0.59	0.09	Fill of ditch 121	-	-
123	Cut	0.65	0.21	Cut of pit	-	-
124	Fill	0.65	0.21	Fill of pit 123	Flint	
125	Cut	0.5	0.25	Cut of pit	-	-
126	Fill	0.5	0.25	Fill of pit 125	Pottery	MBA
127	Cut	0.24	0.23	Cut of posthole	-	-
128	Cut	0.7	0.32	Cut of pit	-	-
129	Cut	0.54	0.2	Cut of pit	-	-
130	Cut	0.7	0.23	Cut of pit	-	-
131	Fill	0.7	0.23	Fill of pit 130	Pottery	MBA
132	Cut	0.7	0.15	Cut of pit	-	-
133	Fill	0.7	0.15	Fill of pit 132	Flint	-
134	Fill	0.46	0.06	Fill of pit 129	-	-
135	Fill	0.54	0.06	Fill of pit 129	-	-
136	Fill	0.54	0.09	Fill of pit 129	-	-
137	Fill	0.24	0.14	Fill of posthole 127	-	-
138	Fill	0.74	0.32	Fill of pit 128	Pottery	MBA

Area 2						
General Description: This area was located in the south of the corridor and consisted of a narrow strip.						
Orientation: N-S						
Average Depth: 0.5m						
Width: 3.5						
Length: 45m						
Contexts						
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Comment**	**finds**	**date**
119	Layer	-	-	Head deposits	-	-
120	Layer	-	0.6	Ploughsoil		
139	Cut	1	0.4	Cut of ditch	-	
140	Fill	1	0.4	Fill of ditch 139	-	-
141	Cut	0.4	0.14	Cut of pit	-	-
142	Fill	0.4	0.14	Fill of pit 141, containing buried pot 142	Pottery	MBA

APPENDIX B – FINDS REPORTS

B.1 Pottery

By Lisa Brown

The prehistoric pottery assemblage consists of 607 sherds weighing 3230g. This total includes a single fragment (2g) of fired clay, possibly a fragment of briquetage from salt production. The material was recovered from nine contexts, including one designated 0 to indicate surface finds. The entire assemblage appears to date to the middle Bronze Age, and is in the Deverel-Rimbury tradition of jars and urns of southern England.

The pottery is all flint-tempered, the most common variety incorporating common to abundant very coarse calcined flint pieces up to 4mm in size. A thick base and lower body wall of a very large jar or urn in this fabric was recovered as 60 joining sherds from context 106. Examination of the vessel in relation to its context may determine whether this was part of a burial deposit. A very similar base in a corresponding coarse flint-tempered ware was recovered from context 6672 of The London Gateway site. Context 142 yielded, amongst some 29 thick, coarse body sherds, a fragment with an applied cordon decorated with finger-nail impressions, a type consistent with the Deverel-Rimbury stylistic tradition of the middle Bronze Age. Some 500 sherds (1305g) of body sherds, most likely belonging to a single large vessel from context 107 are particularly fragmented, some down to crumb size. This contrasts to the otherwise very good condition of this robust ware from the other deposits.

The second variety of flint-tempered fabric has inclusions of much finer, well-sorted flint pieces up to 2mm (Table 1). Altogether 2 sherds weighing 16g were recovered, one each from contexts 103 and 105. A thin-walled vessel of uncertain form from context 103 apparently had a well-smoothed surface, though this is severely abraded. The plain upstanding rim of a small urn in this finer flint fabric was recovered from context 105. This vessel can also be dated to the middle Bronze Age.

Context No.	No. of Sherds	Weight (g)	Fabric	Date	Comments
0	6	38	v. coarse flint	MBA	
103	1	7	moderate grade flint	BA	Thin walled vessel, surface eroded
105	1	9	moderate grade flint	MBA	Plain rim of urn
106	60	1603	v. coarse flint	MBA	1 vess: Flat base and lower body . Possibly cremation urn
107	500	1305	v. coarse flint	MBA	1 vess very fragmented , down to crumb size
126	1	13	v. coarse flint	MBA	
131	5	88	v. coarse flint	MBA	
131	1	2	fired clay	MBA	? Briquetage
138	3	165	v. coarse flint	MBA	
142	29	890	v. coarse flint	MBA	Dec sherd applied body cordon fingernail imp

Table 1 Pottery Quantification and characterisitcs

APPENDIX C – ENVIRONMENTAL REPORTS

C.1 An assessment of two pot fills taken from London Gateway rail corridor.

Julia Meen, Kath Hunter and Rebecca Nicholson

Introduction

This report comprises an evaluation of the entire fills of two Bronze Age vessels recovered during the strip, map and sample in April 2012. Sample <100> was taken from context 108, the fill of a buried pot found within cut [113]. Sample <101> was taken from context 142, and was likewise taken from a pot fill, from within cut [141]. Both pots have been dated to the middle Bronze Age. The samples were taken primarily to establish whether any cremated bone was present. Sample <100> was a 7.5YR 5/4 brown silty loam, with some fine sand. Sample <101 was a sticky, 2.5Y 5/4 light olive brown clay loam.

Methodology

The entire vessel contents were processed by bucket flotation (washover), comprising 3L for sample <100> and 2.5L for sample <101>. The flots were collected on a 250µm mesh and the heavy residues sieved to 500µm and dried in a heated room, after which the residues were sorted by eye for artefacts and ecofactual remains. The dried flot was scanned for plant remains using a binocular microscope at approximately x15 magnification. Nomenclature for the plant remains follows Stace (2010).

Results

Charred Plant Remains

Sample <100> produced a flot of 50ml, approximately 75% of which was scanned. It contained abundant modern root. Occasional items of charcoal greater than 2mm in diameter were noted. Several seeds were observed, including one charred example of *Lotus* type, and also an uncharred seed of *Papaver* sp. (poppy) and a fragment of *Chenopodium* type seed (goosefoots), both of which may be modern intrusions.

Sample <101> produced a flot of 25ml, 100% of which was scanned. Modern root was present. Numerous *Linum* cf. *usitatissimum* L. seeds (flax) were present. A very small number of charcoal fragments were also observed, but these were rarely above 2mm in size and are therefore unlikely to be further identifiable.

Finds

Both samples were found to contain small quantities of abraded pottery. No cremated bone was observed in either of the samples.

Discussion and Recommendations

The presence of numerous charred flax seeds within pot fill 142 is potentially significant. The large size of the flax seeds recovered from sample <101> suggests that they are of a cultivated variety and the relatively high concentration of seeds (around 50 individual seeds) in a small volume of soil (2.5L), together with the fact there was little other material within the vessel fill, may indicate that the seeds represent a deliberate deposit, although the reason for charring is unclear and later intrusion cannot be ruled out. The only way of establishing whether the seeds are contemporaneous with the pot would be to obtain an AMS radiocarbon date on the seeds, and this would certainly be possible. Flax was cultivated during the Bronze Age and seeds are known from Runnymede Bridge, for example (Grieg 1991, 259).

If further excavation is undertaken at this site in the future, standard 40L bulk samples should be taken from a range of potentially datable features across the site and should be in accordance with the most recent sampling guidelines (English Heritage, 2011). Should any additional vessels be discovered within pits, it would be important to collect a sample of the surrounding fill to compare with the pot contents**.**

APPENDIX D - BIBLIOGRAPHY AND REFERENCES

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APPENDIX E – SUMMARY OF SITE DETAILS

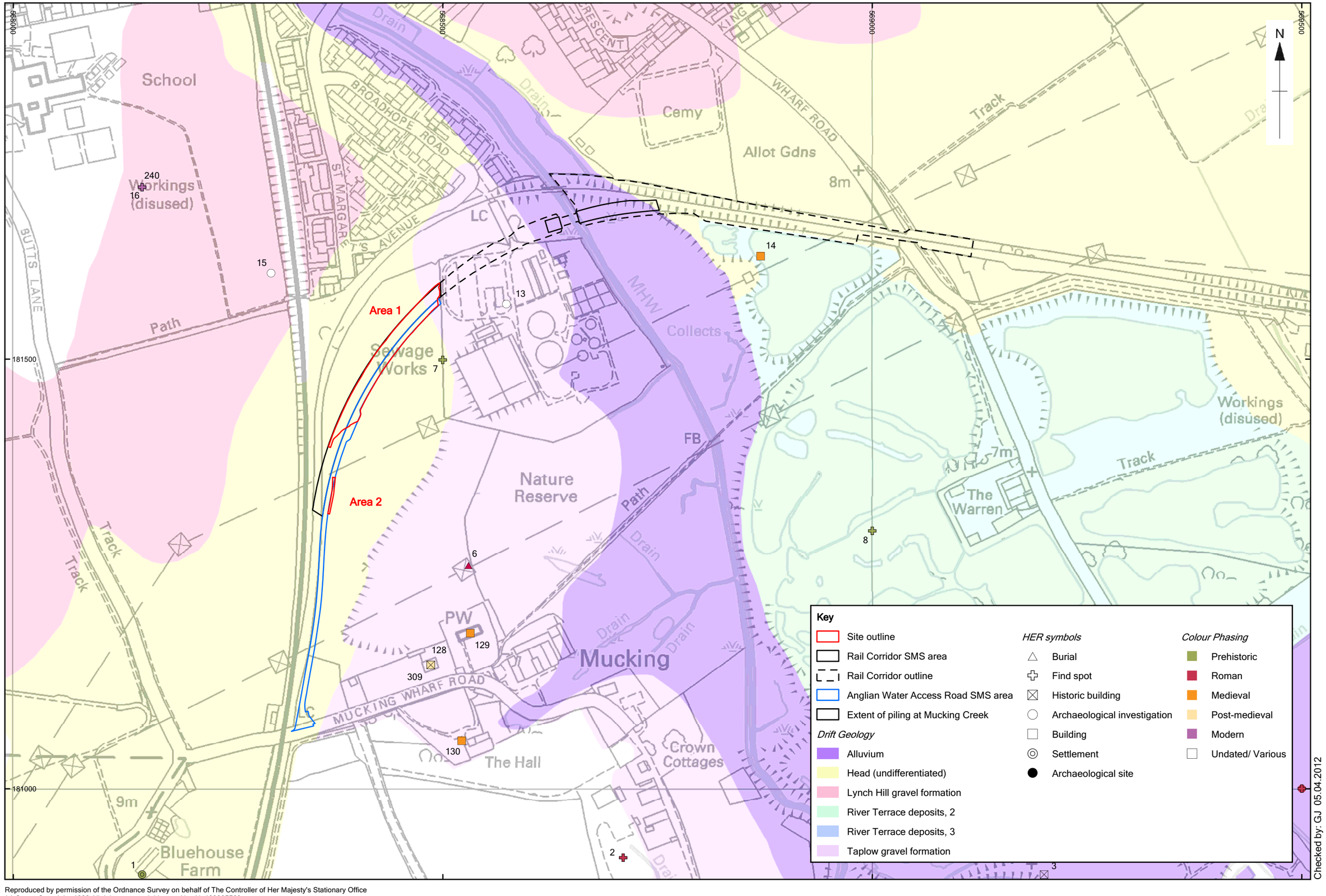
Site name:	London Gateway Rail Corridor Mitigation
Site code:	COMWR 12
Grid reference:	TQ 684 816
Type:	Strip, map and sample
Date and duration:	11th to 20th April 2012
Area of site:	4657m²

Summary of results: Between 11th and 20th April 2012 Oxford Archaeology, on behalf of DP World London Gateway, carried out archaeological investigations within the route of the Broadhope Curve rail corridor near Mucking, Thurrock, Essex (NGR: TQ 684 816). This involved a strip, map and sample strategy to investigate the main areas of impact. An area of 0.45h was stripped in the north-east of the route (Area 1) and an area of 157m² in the south (Area 2).

The excavation revealed the presence of a series of small postholes, a small cluster of shallow pits and three linear ditches. All of the pottery was of middle Bronze Age date.

Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with the Thurrock Museum in due course, under the OA Site code COMWR12.

Figure 1: Site location

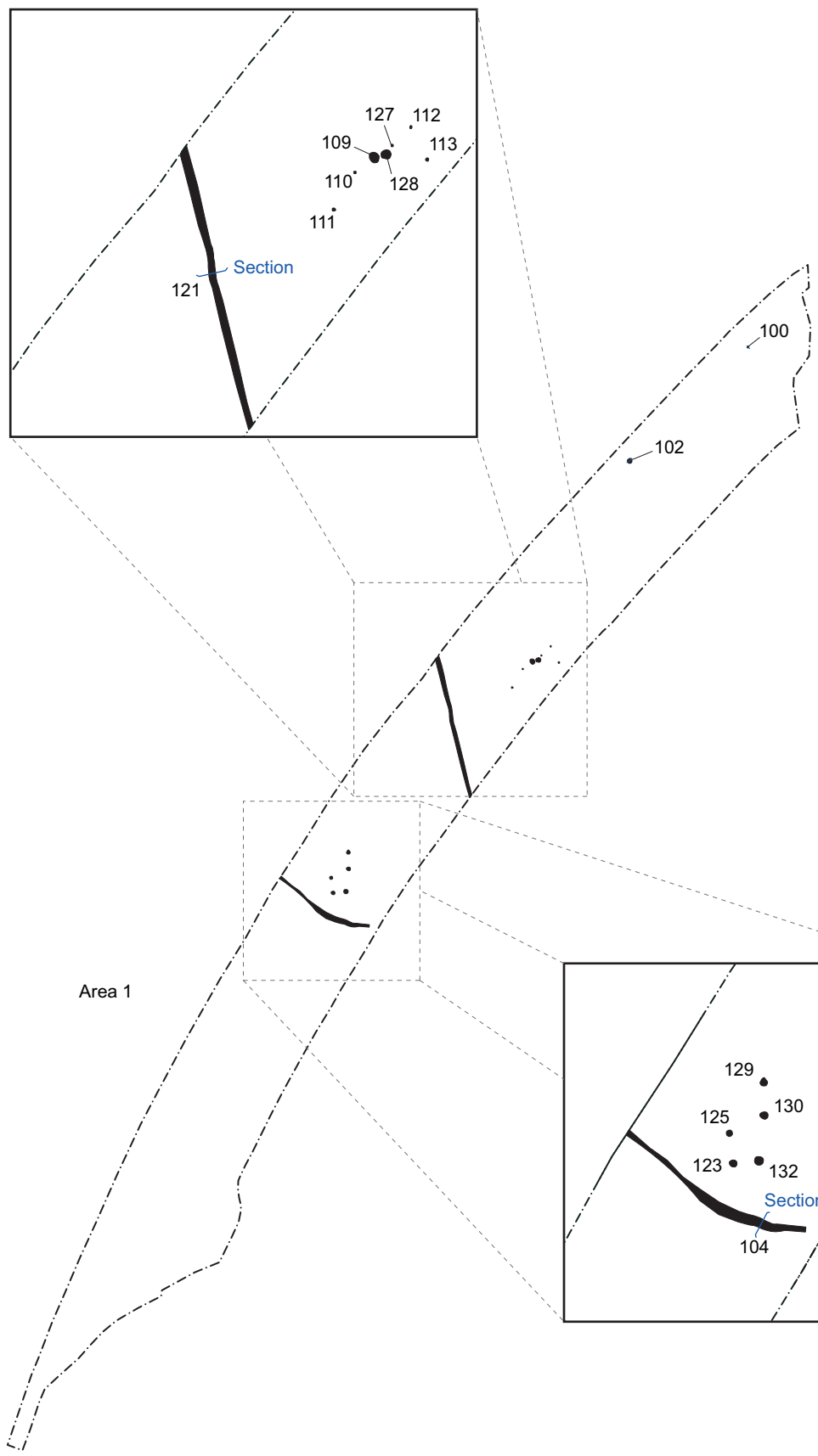


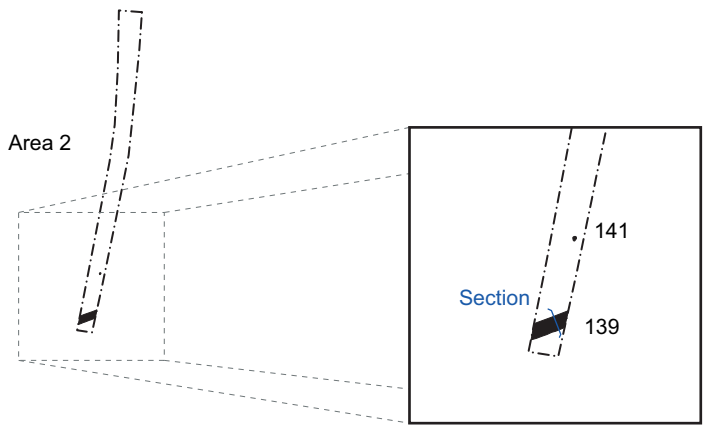
X:\LG2007\03_Geomatics\GIS\ArcGIS\current\001 projects\Arcview 3 projects\LG Rail Corridor Archaeological Project Design_040412\LG_Rail_Corridor_PD_Fig3_050412\Leo Heatley\05.04.2012

Checked by: GJ 05.04.2012

0 1:4,000 @ A3 250 m

Figure 2: Rail Corridor: Broadhope Curve Archaeological Areas - Drift geology and HER sites





104 Context / section number
Feature
Site outline
Section line

0 50 m
Overall plan 1:1000

0 20 m
Detail plans 1:500

Figure 3: Survey plan of excavated areas

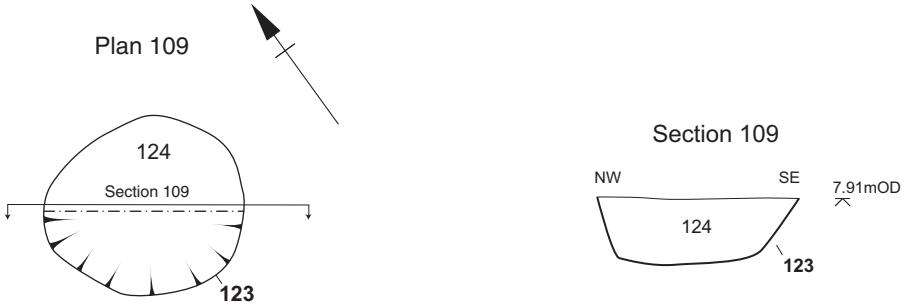
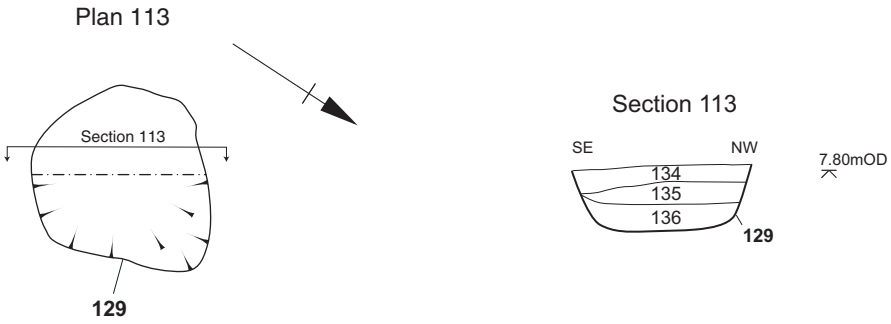


Figure 4a

Figure 4b



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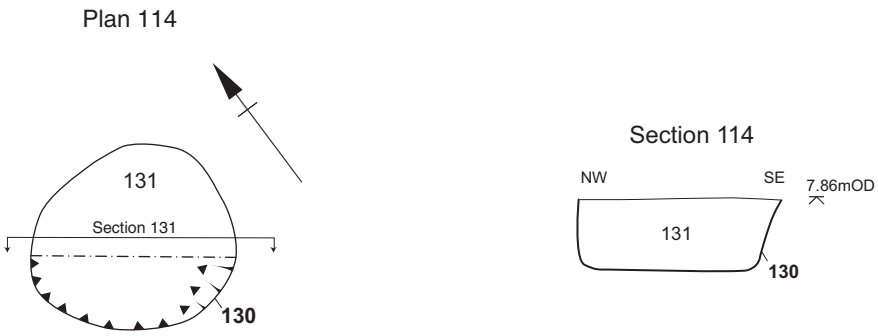


Figure 4d

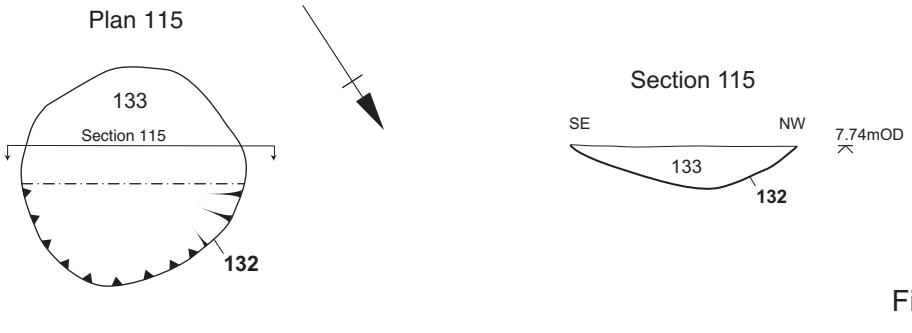


Figure 4e

0 1 m

1:25

Figure 4: Pit group: plans and sections

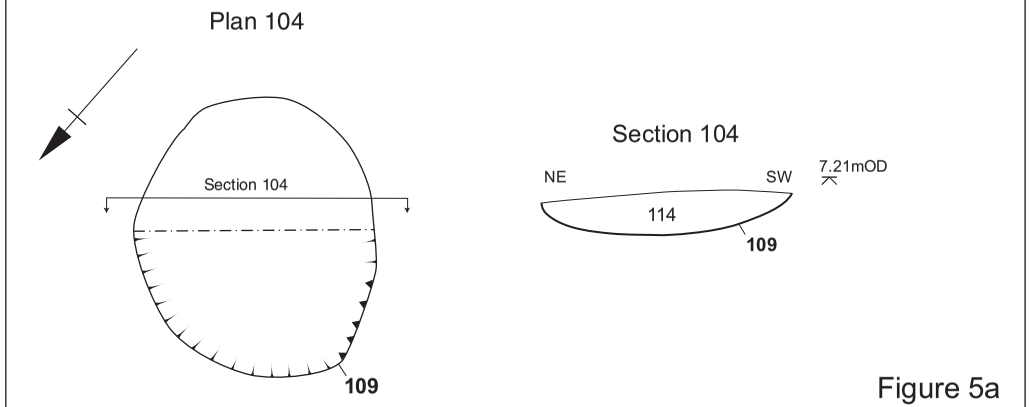


Figure 5a

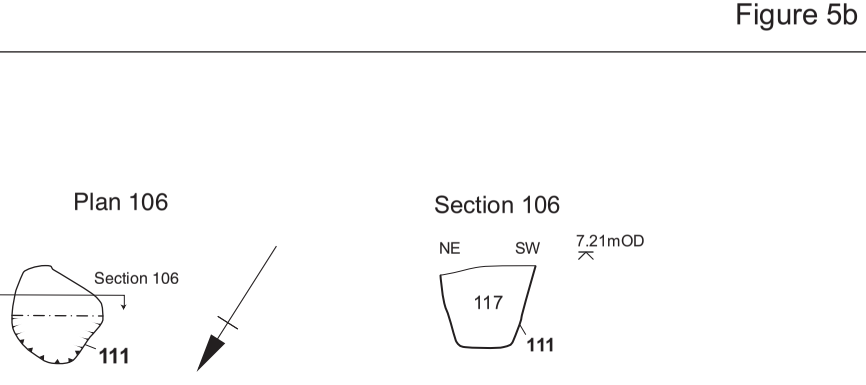


Figure 5b

Figure 5c

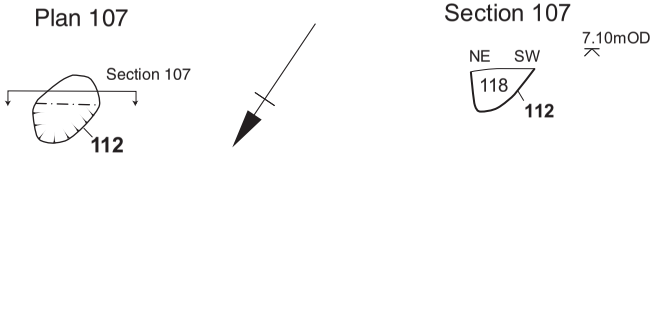
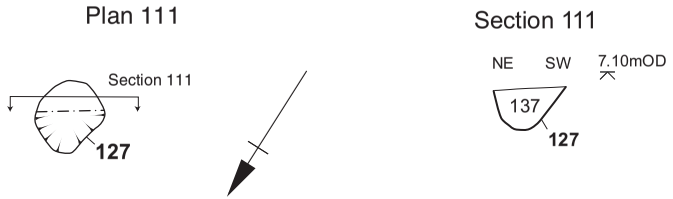


Figure 5d



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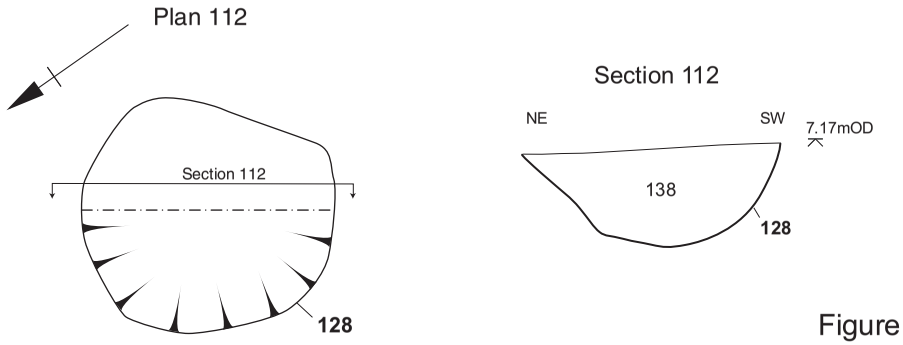

Figure 5f

0 1 m

1:25

Figure 5: Posthole alignment and associated pits: plans and sections

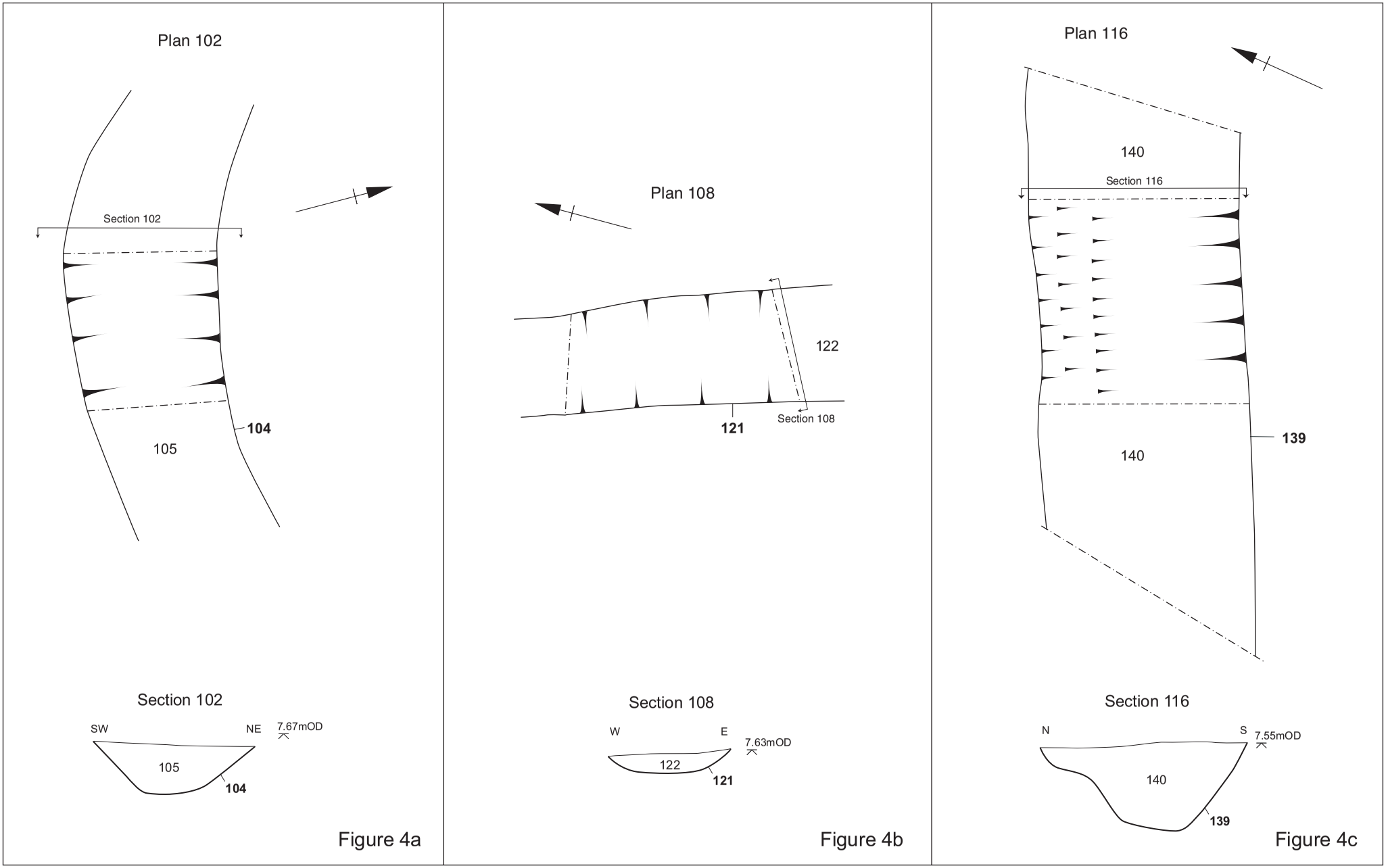

Figure 4: Ditches: plans and sections

Figure 7a

Figure 7b

0 1 m

1:25

Figure 7: Pits containing buried pots: plans and sections

Figure 8a

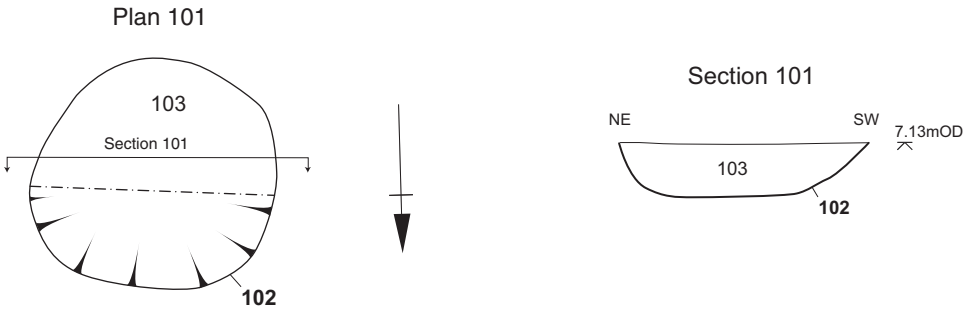

Figure 8b

0 1 m

1:25

Figure 8: Isolated posthole and pit: plans and sections

Plate 1: Middle Bronze Age buried pot 106

Plate 2: Middle Bronze Age buried pot 107

Plate 3: Pit 109 showing traces of burnt material at the base (uncertain date)

Plate 4: Pit 130 (Middle Bronze Age date)

Plate 5: Ditch 104 (Middle Bronze Age date)

Plate 6: Ditch 139 (uncertain date)

Plate 7: General view illustrating soil stripping conditions Area 1

Plate 8: General view illustrating soil stripping conditions Area 2

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