

K VILLAGE, KENDAL, CUMBRIA

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SUMMARY

In response to a proposed redevelopment of K Village, Lound Road, Kendal, Cumbria (SD 5174 9180), Cumbria County Council Archaeology Service (CCCAS) have advised that an archaeological investigation of the site be undertaken to further inform the planning process as the site lies within the designated Hazard Area for medieval Kendal (SMR 2076). EC Harris, on behalf of The Farningham McCreadie Partnership Ltd, commissioned OA North to undertake the archaeological assessment of the site. The initial phase of work comprised an archaeological desk-based assessment, which was undertaken by Oxford Archaeology North (OA North 2004) in November 2004. The results of this informed the position of evaluation trenches at the K Village site.

The desk-based assessment highlighted two sites within the proposed development area as worthy of further investigation, the site of a tannery dating back to at least 1787 (OA North 2004) and the site of a factory first shown on maps of 1833 (*ibid*). A programme of archaeological trial trenching was undertaken by OA North in December 2004, to determine the quality, extent and importance of any archaeological remains on the site.

The evaluation consisted of 13 trenches, equating to approximately 5% of the presently available area of the site, consisting mainly of customer and staff car park and areas of soft landscaping. The results of the evaluation have shown that pits relating to the post-medieval tannery survive at the north-western end of the site, along with the remains of walls, which may also relate to buildings associated with the tannery. Walls relating to various stages of the development of the factory site, dating back to at least 1833, were encountered in the central part of the site. The potential for earlier remains to be encountered on the site is suggested by the survival of remnant plough-soils in different areas across the site.

Current plans of the proposed development include a basement car park on two levels with overlying retail and other buildings. Consequently, all but the present offices fronting Lound Road will be demolished. The proposed development will therefore have an impact on the known archaeological remains recorded in the evaluation; comprising complete removal of below ground remains and demolition of the earliest standing buildings on the site seen on cartographic evidence from 1787.

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1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 In response to a proposed redevelopment of K Village, Lound Road, Kendal, Cumbria (SD 5174 9180) (Fig 1), Cumbria County Council Archaeology Service (CCCAS) recommended that an archaeological investigation of the site was necessary to further inform the planning process. The first stage of this work comprised an archaeological desk-based assessment (OA North 2004), which informed the second stage of work comprising a trial trench evaluation at the K Village site. The scheme affects an area of archaeological interest, recorded on the County Sites and Monuments Record as the hazard area for Kendal (SMR 2076).
- 1.1.2 The desk-based assessment was undertaken in November 2004 (OA North 2004) and concluded that there was high potential for archaeological remains associated with the post-medieval tannery and factory, and, to a lesser extent, medieval features along the eastern side of the site which fronts onto the road shown on Speed's map (1611). Consequently, due to the site being within an area of archaeological potential, an assessment of the impact of the proposed development on any archaeological remains was required. A project design (*Appendix 1*) was prepared in accordance with the CCCAS brief.
- 1.1.3 Oxford Archaeology North (OA North) was commissioned by EC Harris, on behalf of The Farningham McCreadie Partnership Ltd, to undertake the archaeological evaluation in December 2004. Results of the fieldwork are presented in the form of a report outlining the results of findings followed by a statement of the archaeological potential of the area, and an assessment of the impact of the current development proposals.

1.2 LOCATION, GEOLOGY AND TOPOGRAPHY

- 1.2.1 Kendal is situated in the valley floor to the west of the River Kent, within the old county of Westmorland, and is now part of modern-day Cumbria (Fig 1). The area of Kendal, in which the K Village site is located, lies at the base of the Fells and is on a slight crest of land, at c42m OD.
- 1.2.2 The proposed development site is situated to the south of the centre of medieval Kendal, on the eastern side of the River Kent, and is located immediately to the south of the eastern end of Nether Bridge, occupying land between Lound Road and the River Kent (Fig 2).
- 1.2.3 The solid geology comprises Silurian Slates and Kirkby Moor Flags with overlying drift deposits of glacial material, such as gravel and boulder clay, which is known to be varied and convoluted in nature and to contain pockets of peat in post-glacial holes (Countryside Commission 1998). The soils underlying the town of Kendal are classified as 'urban' by the Soil Survey of England and Wales (1983) but the surrounding areas are all typical Brown Earths and, therefore, should there be any surviving soils, they are likely to be of this type.

1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 1.3.1 The following is intended as only a brief background to the site, a fuller and more comprehensive background is presented in the archaeological desk-based assessment report (OA North 2004).
- 1.3.2 The development of Kendal through the medieval period can be seen through records documentary and small-scale interventions. The settlement of Kirkland, at the southern end of the medieval town, and just to the north of the K Village site, is recorded in Domesday Book (as Chechebi, 1086), from which it may be inferred that the mother church of the area had developed here (Faull and Stinson 1986). The settlement became the centre of a Norman barony in the later eleventh century, although there is evidence in Domesday Book of an earlier estate centred further north (probably on either Strickland Ketel or Strickland Roger). Richard I granted a Saturday market in 1189, and at some time between 1222 and 1246 William of Lancaster III, the lord of the manor, confirmed borough status on a settlement which seems to have been encouraged to the north of Kirkland (Munby 1985). The document implies that it simply confirmed an existing situation and that, by the date of the charter, the inhabitants of Kendal considered themselves burgesses of a fully functioning urban centre (ibid).
- 1.3.3 By 1390 the layout of the town was clearly defined with 52 burgages. With a pre-urban nucleus around the Church of the Holy Trinity and Castle Howe, an urban settlement was planned to the north. This is evident in the early maps (Speeds map of 1611 being the earliest). The contrast between the winding course of the settlement Kirkland, around the church (and the presumed site of the pre-Norman settlement), and the long straight streets of Highgate, Stricklandgate and Stramongate, further north, is striking. These streets demonstrate all the attributes of deliberate urban planning of Kendal, with narrow burgage plots extending back from the street frontage (*ibid*).
- 1.3.4 The medieval period saw the emergence of industry in Kendal, particularly cloth by the early thirteenth century (*ibid*). However, during the late medieval and early post-medieval periods the outbreaks of plaguehad a significant economic effect (Phillips 1994). By the late seventeenth century the economy was in recovery and the rural population migrated to the town. This led to a continuing expansion of Kendal in the eighteenth century (Bingham 1995). It was at this time, during the late eighteenth century, that activity on the K Village site was documented (Todd 1787), with a tannery and associated pits (OA North 2004), in the north of the site. The remainder of the site was still farmland with some orchards. It was not until Wood's map of 1833 that the first factory buildings appear in the centre of the site, attributed to Thomas Wilson and Son (*ibid*). The factory was developed over time and by 1911 it was double its original size and named as a 'Boot Factory' (*ibid*), eventually K Shoes with which Kendal became synonymous.

2. METHODOLOGY

2.1 THE FIELDWORK

- 2.1.1 The work undertaken followed the method statement detailed in the project design (*Appendix 1*) and complied with current legislation and accepted best practice, including the Code of Conduct and the relevant professional standards of the Institute of Field Archaeologists (IFA). The fieldwork methodology in the project design was adhered to in full.
- 2.1.2 **Evaluation:** initially, eleven trenches measuring 20m in length were required (Appendix 1). However, following a site meeting with the client and Centre Manager, it was necessary to divide the total length of trenching between thirteen individual trenches across the site. These comprised nine trenches measuring 20m by 1.7m and four trenches measuring 10m by 1.7m (Fig 3). The trenches were located so as to obtain the maximum coverage of the site whilst causing minimal disruption to the car park and business. The positioning of the trenches was approved by CCCAS prior to the commencement of the work.
- 2.1.3 As accurate service plans could not be provided, each trench was scanned with a U-Scan device prior to excavation in order to avoid any unknown live services. Consequently, during the course of the fieldwork it became necessary to slightly alter the lengths and alignments of some trenches in order to avoid live services (Fig 3). Furthermore, Trench 11 could not be excavated due to the presence of numerous services, and Trench 6 had to be abandoned due to the discovery of an unknown contaminant. Therefore, an additional trench (Trench 14) was excavated in the northernmost area of the site to compensate. All alterations were discussed with CCCAS during site visits.
- 2.1.4 The trenches were excavated under constant archaeological supervision using a mechanical excavator fitted with a 1.7m wide toothless ditching bucket to the level of the natural geology or to first archaeological deposits. Where archaeological deposits were encountered, the trenches were hand cleaned and the deposits excavated manually in order to assess their date, character and extent. The trenches were accurately located by taped measurements from existing buildings.
- 2.1.5 **Recording:** a complete record of all features and horizons was made, comprising of a full description and preliminary classification of features or structures revealed on OA North *pro-forma* sheets, and their accurate location in plan. A photographic record in colour slide and monochrome formats was also compiled.
- 2.1.6 *Palaeoenvironmental assessment:* ten litres of each of the four samples were hand-floated, the flots were collected on 250-micron mesh and air-dried. The flots were scanned with a Leica binocular microscope and plant material was recorded and provisionally identified. Botanical nomenclature follows Stace (1991). Plant remains were recorded on a scale of abundance of 1-4, where 1 is

rare (less than 5 items) and 4 is abundant (more than 100 items). The components of the matrix were also noted.

2.2 THE ARCHIVE

2.2.1 A full professional archive has been compiled in accordance with the project design (*Appendix 1*) and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The archive will be deposited in the Cumbria Record Office with a copy of the report sent to the Cumbria SMR.

3. RESULTS

3.1 EVALUATION TRENCHING

- 3.1.1 Thirteen trenches were excavated, all measuring between 10m and 20m in length (Fig 3). All the trenches were 1.7m wide, except Trench 13 which was 2.1m wide. Full trench summaries are presented in *Appendix 2*.
- Trench 1: the presence of services around Trench 1 (Fig 4, Plate 1) restricted 3.1.2 its length to 13.6m. It was positioned towards the northern extremity of the site. The excavation revealed that under modern deposits of tarmac and hardcore, a stone wall, 101, was present in the western end of the trench. It was constructed of roughly-dressed facing stones with a rubble core. The wall ran for 1.6m from north-west to south-east before turning through 90° and running a further 4m to the north-east. The wall had only two courses surviving, 0.5m in depth. The foundation cut for the wall, 100, could be clearly seen through deposit 107, a dark-grey brown soil which appeared to be a former garden soil. No dating evidence was recovered from either 101 or 107. However, foundation cut 100 also cut into the upper fill of a large pit, 108, that extended the full width of the trench and measured at least 6m long. Only the eastern edge of the pit was seen due to its western edge extending under wall 101. The base of the pit was not seen as it extended below the level of safe excavation (1.2m from the surface). The fill from 108 was a single large deposit of brick and stone rubble, 102, from which pottery dating to between the late seventeenth and early twentieth centuries was recovered. However, the majority of the pottery (eight out of ten sherds retrieved) could be more closely datable to between the late eighteenth and early twentieth centuries.
- 3.1.3 At the eastern end of Trench 1 were two additional large pits, 109 and 110, (Figs 4 and 5). The full dimensions of these two pits are not known as they extended beyond the limits of the evaluation trenches to both the north and south. Pit 109 measured 3.3m in length and was filled with a deposit of stone and brick rubble, 105. Finds recovered from 105 comprised pottery and animal bone, the pottery dated to between the late seventeenth and early twentieth centuries, although, as with 102 the majority of the sherds could be dated more specifically to between the late eighteenth and early twentieth centuries. Pit 110 was extending beyond the easternmost end of the trench and, therefore only a small part of the western edge of the pit was revealed. As with the other pits in this trench the fill of 111 was a dump of brick and stone rubble and no dateable finds were recovered.
- 3.1.4 The stratigraphic relationships between the three pits, 108, 109 and 110, could not be discerned due to the similar nature of the fills. The bases of the three pits could not be reached by hand excavation as they extended beyond the safe working limit of 1.2m below ground level. However, before the trench was backfilled, pits 109 and 110 were removed by machine and shown to reach a depth of 1.7m below ground level.

- 3.1.5 **Trench 2:** Trench 2 was restricted to a length of 12.8m due to the presence of services and was located in the northern area of the site. Excavation of the trench revealed that the southernmost 8m were devoid of archaeological features. Tarmac and hardcore overlay a 0.25m thick deposit, **206**, comprising a mid-grey-brown silty-clay, probably a relict plough-soil, from which pottery, clay pipe and animal bone were recovered. The pottery, for the most part, dates to between the late seventeenth and early twentieth centuries although one sherd has a date range of between the fifteenth and seventeenth centuries. Layer **206** was found to overlie natural deposits of orange clayey silt.
- 3.1.6 The northern part of Trench 2 was found to contain four archaeological features (Fig 6), two pits (201 and 206), one linear cut (203) and a wall (205). Both 201 and 203 were found to contain demonstrably modern finds and so are not discussed further. Pit 206 was cut away to the north by wall 205 and extended beyond the limits of excavation to the west but appeared to be subcircular in plan and back-filled with a dumped deposit of gravel, 207. The pit was not excavated and so its full depth remains unknown, but it could be seen to cut plough-soil layer 208. Wall 205 (Plate 2) was aligned from north-east to south-west and was constructed of roughly-dressed facing stones with a rubble core. The wall could be seen to cut both pit 206 and plough-soil layer 208.
- 3.1.7 *Trench 3:* Trench 3 (Fig 7) measured 20m in length and was situated in the northern area of the site. A deposit of possible remnant plough-soil (309) 0.25m thick was observed underlying the tarmac and hardcore overburden; however, this deposit overlay 310, a re-deposited layer of gravel, presumably used as a levelling deposit and thus implying that 309 was also a levelling deposit rather than in situ plough-soil. Deposit 309 sealed all of the four archaeological features revealed in the trench, which comprised three pits (301, 306 and 312) and two walls (303 and 304). Pit 301 measured 0.78m across by 0.3m deep. Deposit 308 was the lower fill of pit 301 and comprised a thin layer in the base of the pit formed by the eroded material from the pit sides, indicating that it was left open for some time before being back-filled. The upper fill of 301 was a dumped deposit of gravel, 302, used to purposely back-fill the pit. Pottery dating to between the nineteenth and twentieth centuries was recovered from this layer.
- 3.1.8 The second pit to be encountered in Trench 3 was pit 306, which measured 1.5m in diameter and 0.25m deep. This pit contained a single deposit of sandy gravel representing deliberate back-fill of the feature. This deposit, 307, contained finds of mortar, shell, bone, clay pipe, and pottery. The latter two have been dated to between the late eighteenth to twentieth centuries.
- 3.1.9 The final pit to be encountered in this trench was *312*, which measured 3.2m in diameter by 0.35m deep and, as with the other pits in this trench, had been back-filled with a dump of gravel, *313*. No finds were recovered from *313*.
- 3.1.10 Wall 303 was aligned from south-east to north-west and constructed of roughly dressed, dry-bonded stones with a rubble core. The western end of wall 303 butts the southern end of wall 304 which was aligned north/south, and constructed in a similar fashion to that described for 303 but bonded with lime mortar. The exact relationship between the two walls is not certain but

- wall 303 may be the later of the two, as it appeared to be overlying the foundation cut (305) of wall 304.
- 3.1.11 *Trench 4:* Trench 4 measured 9.3m in length and was located in the small staff car park and delivery bay opening out onto Lound Road. Tarmac and hardcore were seen to overlay levelling deposits of stone rubble and gravel, which sealed deposits of natural gravel. A large modern soak-away and culvert were observed in the centre of the trench, both of which had been cut from just below the hardcore, otherwise no archaeological features were encountered in the trench.
- 3.1.12 *Trench 5:* Trench 5 measured 20m in length but was excavated in two sections measuring 14m and 6m, respectively, as the working space for the mechanical excavator was restricted by extant buildings. The trench was located on the grass verge to the north of the main entrance to the K Village complex. No archaeological features were encountered other than modern drains; however a 0.25m thick deposit of relict plough-soil *506*, was encountered below 0.3m of topsoil and hardcore and above natural gravel. No finds were recovered from this trench.
- 3.1.13 *Trench 6:* Trench 6 was located on the grass verge to the south of the main entrance to the site of Lound Road. A 3m length of the trench was excavated before deposits containing asbestos waste were encountered at a depth of approximately 0.6m. As a consequence, this portion of the trench was immediately back-filled and excavation recommenced 4m further to the north west. However, the same deposit containing an unknown contaminant was encountered, and as a result, the trench was back-filled and there was no further attempt to excavate in this area.
- 3.1.14 **Trench 7:** Trench 7 was restricted to a length of 12.8m due to the presence of services and the need to retain access to the loading bay. The only features seen in this trench were a modern brick-built wall with concrete footings and part of a concrete floor extending to the south of the wall, along with two modern service trenches. Nevertheless, a relict plough-soil **703**, 0.3m thick, from which a sherd of late medieval pottery was recovered, was seen across the full length of the trench underlying 0.45m of modern made ground.
- 3.1.15 *Trench 8:* Trench 8 was 10.8m in length and was situated on the raised grass area at the western edge of the site. The position of the trench had to be moved slightly to the south and on a different alignment to the originally proposed position in order to avoid damage to trees. The stratigraphy in this trench comprised topsoil and a layer of rubble and cinders to a depth of 0.44m overlying a substantial stone built wall, *806*, which was aligned from northeast to south-west towards the southern end of the trench (Fig 8). Unfortunately, this wall had been heavily disturbed by the insertion of a modern drain and, consequently, could only be recognised in section (Fig 9). The wall was 0.9m wide and constructed of large roughly-dressed stone blocks measuring up to 0.7m by 0.7m by 0.2m, which were dry bonded and the gaps infilled with smaller angular stones. Wall *806* was constructed in foundation trench *807* that cut through two layers of re-deposited gravel (*802* and *803*) and a deposit of relict plough-soil, *804*, to a depth of 1m below ground level.

- The relict plough-soil, **804**, extended for the full length of the trench, between the depth of 0.98m and 1.2m at which point natural gravel was encountered.
- 3.1.16 *Trench 9:* Trench 9 (Fig 10, Plate 3) was 10.6m in length and was positioned in the western extremity of the central part of the site. The excavation of this trench revealed that modern levelling deposits to a depth of 0.9m sealed two walls, three stone-lined culverts/drains and a pit. Wall *901* extended from the southern end of the trench and along the eastern edge for 4m where it abutted wall *903*, which crossed the trench on a north-east to south-west alignment. Both walls were constructed of roughly-dressed stone blocks with a rubble core and were cut into the underlying natural to a depth exceeding 1.05m. It was not possible to ascertain the stratigraphic relationship between the two walls.
- 3.1.17 Approximately 1.5m to the north of wall **903** was a stone-built drain/culvert **905**. This feature was 0.6m wide and lined with roughly-dressed stone, and capped with a combination of flat stone and slate. Drain/culvert **905** cut through the centre of a sub-circular pit, **906**, which measured 1.5m in diameter by 0.25m deep, and had been filled with a single dumped deposit of gravelly sandy-clay. The infill, **906**, was found to contain pottery fragments dating to between the late seventeenth and early twentieth centuries.
- 3.1.18 To the north of pit *906* were two further stone-lined drains/culverts. The first of these was *911*, which measured 0.45m wide and was capped with slates. The final drain/culvert to be seen in Trench 9 was constructed of two stone walls (*908* and *910*) 0.6m apart, the capping of the culvert had been removed or destroyed and the culvert was filled with stone, brick and slate rubble (*909*). No dating evidence was recovered from any of the walls or culverts in the trench.
- 3.1.19 *Trench 10:* Trench 10 measured 10m in length and was situated close to the main building, under the disabled parking bay. No archaeological features were encountered. Concrete and hardcore to a depth of 0.36m overlay natural deposits comprising sandy-gravel in the eastern end of the trench and silty-clay in the west.
- 3.1.20 *Trench 11:* Trench 11 was to be located within the main car park adjacent to the building but could not be excavated due to the quantity of live services in the area and the lack of a suitable alternative position.
- 3.1.21 *Trench 12:* Trench 12 measured 20m in length and was positioned in the centre of the main car park. Excavation of the trench revealed a surface layer of reinforced concrete to a depth of 0.22m which directly overlay natural deposits of sand and gravel. In the southern end of the trench natural deposits of sand were noted which might have been deposited within a palaeochannel or from some other form of post-glacial deposition.
- 3.1.22 *Trench 13:* Trench 13 (Plate 4) measured 19m by 2.1m and was situated adjacent to the buildings to the south of the central part of the site (Fig 3). The trench had to be moved slightly to the south of its proposed location and its alignment altered due to the presence of live services. Immediately under the

tarmac and hardcore overburden was a modern brick built wall with concrete foundations observed running from south-east to north-west along the entire length of the centre of the trench. Consequently, it was only possible to excavate to any depth on the eastern side of the wall. These excavations revealed modern levelling deposits to a depth of 0.5m that sealed a relict plough-soil 1302, which appeared to have been slightly disturbed as evidenced by occasional patches of brick and concrete rubble. The plough-soil, 1302, was 0.18m thick and overlay 1304 which appeared to be formed by the ploughing of the interface 1302 and the underlying natural 1304, encountered at a depth of 0.8m.

- 3.1.23 *Trench 14:* Trench 14 (Figs 11-12, Plate 5-6) measured 11.8m in length and was excavated in the southern end of the staff car park (Fig 3). The excavation revealed modern levelling deposits to a depth of 0.6m which partly butted and partly sealed a modern wall, 1429, which was brick built with concrete foundations (Fig 12). Seven pits and a tree-throw were also encountered in the trench. The pits can be divided into three stratigraphic phases. The earliest of these phases is represented by pits 1410, 1416 and 1423. All three pits are subrectangular in plan, pit 1423 was not excavated, but 1410 and 1416 both had flat bases, steep sides and were approximately 0.6m deep. All three pits were back-filled with gravel deposits and the two excavated examples show that they were maintained as no material from the sides of the pits had accumulated in the bases. Pottery from 1409, the fill of 1410, dated to between the late eighteenth and early twentieth centuries. A piece of rolled window glass which can only date to after the 1920's was also recovered from 1409, but it is thought that this must be intrusive. Pottery was also recovered from 1415, the fill of 1416, dating to between the late seventeenth to early twentieth century. After these pits had been back-filled the whole area, rather than just individual pits, was sealed with a layer of re-deposited natural clays, 1408 and 1417, which were essentially the same deposit.
- 3.1.24 Pits 1414 and 1420 represent the second phase of pitting seen in the trench. Both pits are sub-rectangular in plan, between 0.4m and 0.5m deep, cut from the same level and cut through the layer of re-deposited natural (1417). These pits do not seem to have been maintained as well as their predecessors (3.1.23 above). Pit 1414 was filled with a dark silty deposit 1413, from which seventeenth to twentieth century glass and some animal bone were recovered. This deposit was then sealed by a layer of pea-grit gravel, 1412, and a thin layer of cinders, 1411. Pit 1420 contained a basal deposit of light green-grey sandy-silt, the colour of which is indicative of being in contact with cess. Pottery recovered from 1419 has been dated to between the late seventeenth to early twentieth centuries, with a bias towards a date of late eighteenth to twentieth centuries. A fragment of horse rib was also recovered from this deposit. Following the accumulation of 1419 in pit 1420, the pit was then back-filled with a single large dump of gravel, 1418, after which a dump of sandy silt was laid over the area around the western end of the trench. This deposit, 1407, does not extend as far as pit 1420, but it is not clear if the deposit has been truncated to the east. An irregular-shaped hollow, 1425, which has been interpreted as a tree-throw would also appear to belong to this phase of activity as its fills are also sealed by 1407.

3.1.25 The third phase of pitting is shown by pits 1406 and 1422. Pit 1406 was located at the western end of the trench, through layer 1407. It appeared to be sub-rectangular in plan but had a slightly irregular, concave base and a depth of 0.6m. This pit had been back-filled with deposits of brick rubble and cinders before being capped with compacted pea-grit gravel. Pit 1422 was located at the eastern end of the trench and cut through the fills of pit 1420. Again, this pit was sub-rectangular in plan with a flat base and a depth of 0.56m, and was entirely filled with brick and stone rubble. Both pits belonging to this phase were eventually sealed with modern levelling deposits. No datable finds were recovered from pits 1406 & 1422.

3.2 THE FINDS

3.2.1 *Introduction:* in total, 125 artefacts and ecofacts were recovered from the evaluation, the majority of which was pottery. Smaller quantities of clay tobacco pipe, copper alloy, glass, mortar, bone, and shell were also recovered. The finds were retrieved from unstratified deposits, plough soil and the fills of pits within Trenches 1, 2, 3, 7, 9, and 14. The type of finds recovered particular to each trench is summarised in Table 1, and the type according to context is shown in Table 2, below. All the artefacts have been dated to the late medieval or post-medieval period, and are listed in *Appendix 3*.

Material	Tr 1	Tr 2	Tr 3	Tr 7	Tr 9	Tr 14	Total
Bone	1	2	5	0	0	5	13
Clay tobacco pipe	0	2	2	0	0	2	6
Copper alloy	0	0	0	0	0	1	1
Glass	1	0	0	0	0	2	3
Mortar	0	0	12	0	0	0	12
Pottery	41	12	9	1	2	23	88
Shell	0	0	1	0	0	1	2
Total	43	16	29	1	2	34	125

Table 1: Type of finds from different trenches

3.2.2 **Pottery:** late medieval fully-reduced greenware, dated to the fifteenth to seventeenth century, was the earliest pottery type to be recovered from the site. A single jug rim was recovered from plough soil 703, which produced no other finds, and a body fragment was recovered from unstratified deposits in Trench 2. Of a slightly later date was a coarseware crock or jar rim of brownglazed beige earthenware with a red slip coating. It was dated to the late seventeenth to early eighteenth century and was recovered from plough soil 102, which also produced late eighteenth to twentieth century pottery. A blue painted tin-glazed earthenware plate or dish fragment was retrieved from pit fill 1419, which, like the majority of the other pit fills from the evaluation, also produced late eighteenth to twentieth century pottery.

3.2.3 With the exception of the earlier pottery detailed above, the bulk of the assemblage comprised a mixture of brown-glazed red earthenware kitchenware vessels, and white earthenware tableware vessels. The kitchenwares included crocks or jars, and bowls or pancheons, and were dated to the late seventeenth to early twentieth century. Contemporary coarseware fabrics were also recovered in much smaller quantities: brown-glazed grey-bodied stoneware, self-glazed beige earthenware, and unglazed red earthenware.

Material	Unstratified (Trench 2)	Plough soil (102 and 703)	Pit fills (105, 302, 307, 703, 912, 1409, 1413, 1415, and 1419)	Total
Bone	2	0	11	13
Clay tobacco pipe	2	0	4	6
Copper alloy	0	0	1	1
Glass	0	1	2	3
Mortar	0	0	12	12
Pottery	12	11	65	88
Shell	0	0	2	2
Total	16	12	97	125

Table 2: Type of finds from different contexts

- 3.2.4 The tableware, dated to the late eighteenth to twentieth century, included dinner plates decorated with relief-moulded, painted, and transfer-printed patterns, such as feather edge and blue shell edge. The commonest transfer-printed patterns of the nineteenth century (Willow (Coysh and Henrywood 1982, 402), Broseley (*op cit*, 62), and Asiatic Pheasants (*op cit*, 29)) were all present. In addition, the border of a transfer-printed pattern given the provisional title 'Exotic Birds' (illustrated in Coysh and Henrywood 1989, 102) was also identified from plough-soil *102*. The overall assemblage from the pit fills can be dated using the tablewares, which are much more diagnostic than the kitchenwares (Draper 1984, 5), to the late eighteenth to twentieth century.
- 3.2.5 Clay tobacco pipe, bottle glass, and copper alloy: five unmarked clay tobacco pipe stem fragments were recovered from pit fills and unstratified deposits, and were dated to the seventeenth to early twentieth century. A single clay pipe bowl, with moulded ridges and a pedestal spur, was retrieved from pit fill 307, and was dated to the eighteenth to early twentieth century. It was associated with pottery of late eighteenth to twentieth century date.
- 3.2.6 An eighteenth to nineteenth century dark olive green wine bottle fragment was retrieved from plough soil 102, which also contained late eighteenth to twentieth century pottery. The only metal find from the evaluation was a copper alloy tag from pit fill 1419, which also contained some late eighteenth to twentieth century pottery.

- 3.2.7 *Mortar and window glass:* two different types of mortar were retrieved from pit fill 307. They presumably represent demolition debris, and can be dated to the late eighteenth to twentieth century based on the pottery recovered from the same fill. A light blue window pane fragment, dated to the seventeenth to twentieth century, was the only closely dateable find from pit fill 1413, and a colourless window pane fragment, dated to the nineteenth to twentieth century, was associated with pottery of late eighteenth to twentieth century date in pit fill 1409.
- 3.2.8 **Bone and shell:** the 13 bones present were from sheep or goat, calf, horse, domestic fowl, and indeterminate medium and large mammals. Eleven bones were recovered from the fills of pits, dated to the seventeenth to twentieth century (1413) and the late eighteenth to twentieth century (105, 307, and 1419). Two fragments of marine bivalves were also retrieved: an oyster from pit fill 307 and a cockle from pit fill 1409. It is likely that the shells represent food waste. However, the bones are likely to be associated with the known tanning activities on the site, particularly given their retrieval from pits.
- 3.2.9 *Conclusions:* the earliest pottery recovered from the site was present in the plough soil and unstratified deposits, and indicates activity of a fifteenth to seventeenth century date. A small domestic assemblage, which was largely pottery-based, was recovered from pit fills. It was dated to the late eighteenth to twentieth century, and is a typical assemblage in terms of the tablewares and kitchenware present. Pit fills *1413* and *1419* were both stratigraphically later than pit fill *1415*, and it would have been interesting if the finds could have dated these three fills accurately. The absence of tablewares in fills *1413* and *1415*, however, means that they can only be broadly dated to the seventeenth to twentieth century.

3.3 PALAEO-ENVIRONMENTAL ASSESSMENT

- 3.3.1 *Quantification*: four environmental bulk samples were taken from the fills of three pits and one layer in Trench 14 for the assessment of charred plant remains (see Table 4). Ten litres from each of the four samples were processed for environmental assessment. A small sample (20g) was taken from the fill of pit *1420* to access at a future date for the presence of the pollen of *Quercus* (oak), which if present might suggest that the pit was used in the tanning process.
- 3.3.2 **Results of environmental assessment**: the results of the assessment are shown in Table 4. A small amount of charcoal, some coal, and cinder were recorded in the flots from the four samples. A single charred cereal grain of *Avena* (oats) was identified in the fill of pit **1420** and from layer **1417** and a charred weed seed of *Plantago lanceolata* (ribwort plantain) was recorded in the sample from layer **1417**. Uncharred *Sambucus* (elderberry) and *Rubus* (blackberry) seeds were identified in the fills of pits **1420**, **1415** and layer **1417**. Industrial residues were also noted in the three samples from these pit fills. Modern roots, wood and seeds were noted in all samples.

Sample	Context	Feature	Period
1	1419	Pit 1420	Post medieval
2	1415	Pit 1416	Post medieval
3	1413	Pit <i>1414</i>	Post medieval
4	1417	Layer	Post medieval

Table 3, Environmental samples

3.3.3 **Discussion of environmental assessment**: this assessment has demonstrated that a few charred plant remains were preserved in the fills of the post medieval pits **1420**, **1416**, **1415** and **1408**. Occasional charred oat grains and a single charred ribwort plantain seed were identified but the samples contained no other charred seeds although uncharred elderberry and blackberry seeds were present in three samples. These seeds may be modern or, because they are woody, may have been preserved in conditions when other seeds are destroyed. The identification of charcoal fragments, coal, and cinder suggest that both wood and coal were being used as fuel sources.

Sample	Context	Feature	Flot Description	Plant Remains	Potential
1	1419	Pit 1420	<20ml, charcoal 2, coal 4, cinder 4, molluscs 1, industrial residues 3, modern roots and wood 3.	Cereal 1, (Avena), waterlogged Sambucus and Rubus seeds	None
2	1415	Pit 1416	<10ml, charcoal 1, coal, molluscs 1, modern roots		None
3	1413	Pit 1414	20ml, charcoal 2, coal 2, bone 1, industrial residues 1, earthworm egg cases, modern roots and wood.	Corylus nut shell (partly charred) 1, waterlogged Sambucus and Rubus seeds	None
4	1417	Layer	40ml, charcoal 2, industrial residues 2, coal, cinder, modern roots, seeds and wood.	Cereal 1, (Avena), charred Plantago lanceolata seed 1	None

Table 4: Assessment of charred plant remains.

Key 1-4 where 1=rare less than 5 items) and 4=abundant (more than 100 items)

3.3.4 The results of the assessment of the four samples for charred plant remains are inconclusive. No organic remains, which suggest that they were tanning pits, were identified.

3.3.5 *Environmental Potential*: there is no potential for any further environmental analysis of the fills of the post-medieval pits *1420*, *1416*, *1415* and layer *1417* based on present evidence. However, it has been demonstrated that some charred plant remains have been preserved in the deposits on the site. If further archaeological work is undertaken it is recommended an environmental sampling strategy should be included. In addition, detailed analysis of the fill of pit *1420* may provide tanning evidence in the form of *Quercus* pollen or similar.

4. CONCLUSION AND IMPACT

4.1 DISCUSSION

- 4.1.1 The earliest evidence for activity on the site is in the form of two late medieval to early post-medieval pottery sherds, both recovered from deposits believed to be relict plough-soils. Five trenches revealed relict plough-soil deposits (Trenches 2, 5, 7, 8 and 13) suggesting that pockets of relatively undisturbed ground exist across the site, which have the potential to contain and/or mask archaeological features that are medieval or earlier in date.
- The results of the evaluation trenching have identified a number of structures relating to the buildings identified from cartographic evidence (OA North 2004). A corner of a probable building was revealed in Trench 1 (101), which initially appears to relate to the tannery building first seen on Todd's map of 1787 (*ibid*). However, the finds from the excavation showed that it had been constructed over pits identified with a later date than 1787. This suggests later rebuilding or an extension, which may be that seen on the Ordnance Survey (OS) Second Edition map of 1911 (*ibid*). The wall (205) revealed in Trench 2 is likely to be the boundary wall depicted on Todd's map, thought to be the southern boundary to the tannery and yard. This was in existence until the twentieth century (ibid). In Trench 14, the wall (1429) towards the west end may be attributable to a small unidentified building likely to be associated with the tannery being seen for the first time on Todd's map (*ibid*). This building can be traced through cartographic sources to the OS First Edition map of 1858, after which time it is demolished. The two walls seen in Trench 3 (303) and 304) are more problematic in their identification, as there is no evidence of their existence in the cartographic sources up to 1911 (*ibid*). Unfortunately, OS maps of the twentieth century were unavailable from the County Record Office but data from the 1980's (Fig 2) suggests that these walls may belong to a modern but demolished building.
- Todd's map (1787) also shows a number of small, discrete, regularly-aligned 4.1.3 features thought to represent tanning pits. This was confirmed by evidence from Trenches 1, 2, 3 and 14. Interestingly, the main concentration of pits were found in Trench 14 south of the tannery boundary wall shown on Todd's map. This may indicate an expansion of the tannery not recorded in the cartographic evidence, into the orchard and hence the tree-throw (1425). The three phases of pitting revealed in Trench 14 indicate that they were periodically back-filled, capped and new pits dug. Unfortunately, the pottery recovered from these pits is only broadly dateable to a two or three hundred year period, and, therefore how long each pit or each phase of pitting was in use cannot be ascertained. Environmental evidence from these pits has added little to our understanding of their function. Furthermore, no remains to suggest that the pits were in use as part of the tanning process were identified in the environmental samples. However, the pits were backfilled at the end of their use, meaning that these deposits were not necessarily related to the use of the pit and therefore can not be expected to produce entirely indicative material of that use.

- 4.1.4 This whole area of the northern end of the site, which is currently under the staff car park, has a very high potential for containing further features relating to the post-medieval tannery due to the structural evidence and pitting so far encountered.
- 4.1.5 Development of the site in the nineteenth century to the south of the tannery is first shown by Wood's map of 1833. Factory buildings are known to have been constructed in 1825 by 'Tommy' Wilson (*ibid*). Wall *903*, Trench 9 is likely to be the southernmost wall of the south-western corner of the factory buildings. Wall *901*, which extends to the south of wall *903* may relate to a dividing wall shown on the OS First Edition of 1858 (*ibid*).
- 4.1.6 The wall uncovered in Trench 8, **806**, is difficult to identify with any certainty as it may belong to the boundary wall running parallel, and to the south of, Wilson's buildings (Wood's map of 1853). This boundary was in existence until some time after the OS First Edition map of 1858. By the time of the OS Second Edition of 1911 the boot factory was developing, to which the wall could also be attribute.
- 4.1.7 Brick-built walls with concrete footings were encountered in Trenches 7, 13 and 14 and are taken to be of modern origin due to the methods of construction. In addition, there was no evidence on the cartographic sources up to the early twentieth century.

4.2 POTENTIAL

- 4.2.1 In conclusion, the evaluation has demonstrated that there is a potential for post-medieval or earlier remains to be found on the site. This applies to the areas where the evaluation has shown there to be minimal disturbance, modern or otherwise. This is evidenced by the presence of pockets of relict plough-soil deposits.
- 4.2.2 The main areas of potential, however, are those associated with the post-medieval tanning industry at the northern end of the site and the early factory buildings. Both pits and structures relating to the tanning industry have been shown to survive as sub-surface features. The later development of the site as evidenced from cartographic sources (*ibid*) has been further supported by the remains found and the potential for more of these remains to be found in any further work on the site is high.

4.3 IMPACT

4.3.1 Remains relating to both the tannery site and the early factory site are deemed to be of local significance. However, the concentration of services around the present K Village buildings and the construction and demolition of these and associated buildings in the last century suggests this central area has been significantly disturbed. The exact extent of the disturbance on below ground archaeological remains was difficult to ascertain due to the presence and restriction of live services. Nevertheless, elsewhere across the site the

proposed development, of most importance here being the basement car park, would have a significant impact upon the archaeological resource of the site, in terms of destroying any archaeological remains or deposits. This impact would be lessened with an appropriate mitigation strategy in relation to the proposed construction details.

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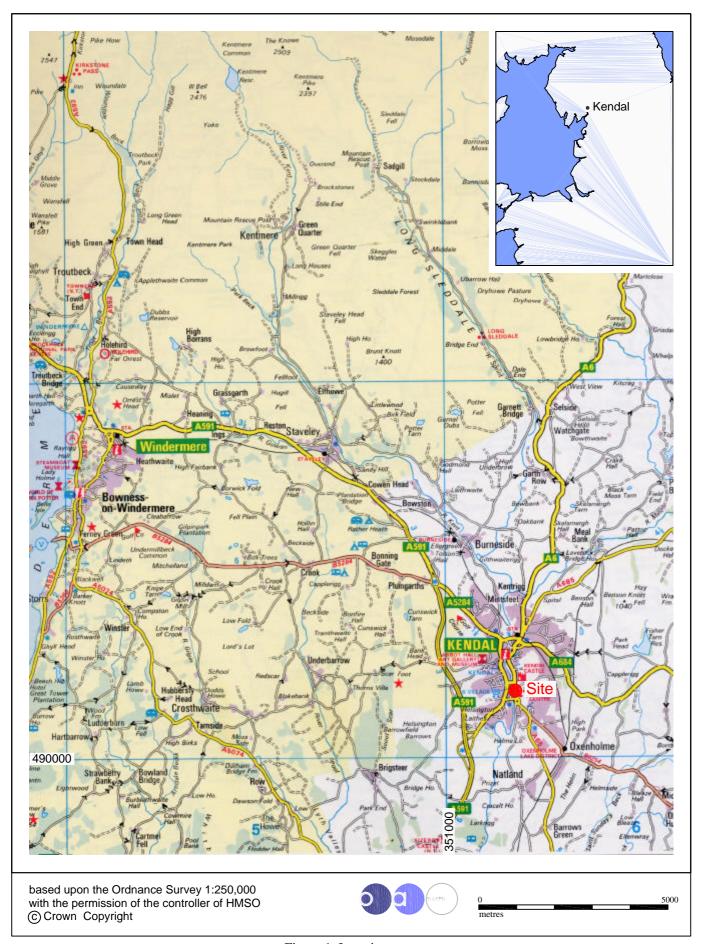


Figure 1: Location map

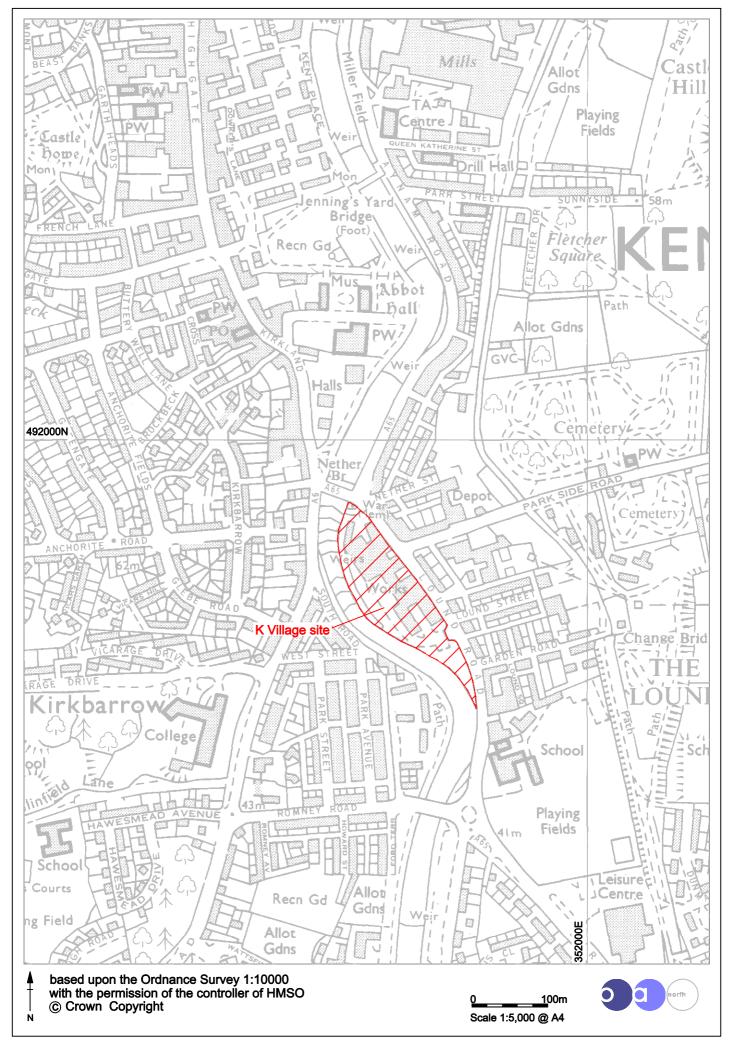


Figure 2: Detailed site location plan

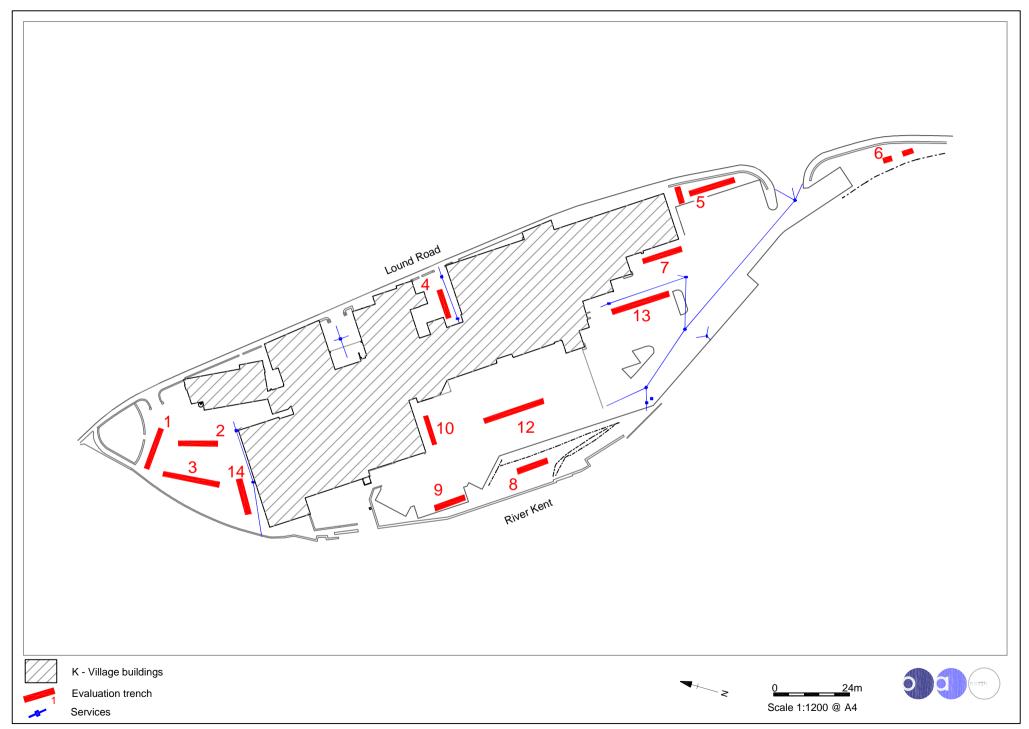


Figure 3: Trench location plan

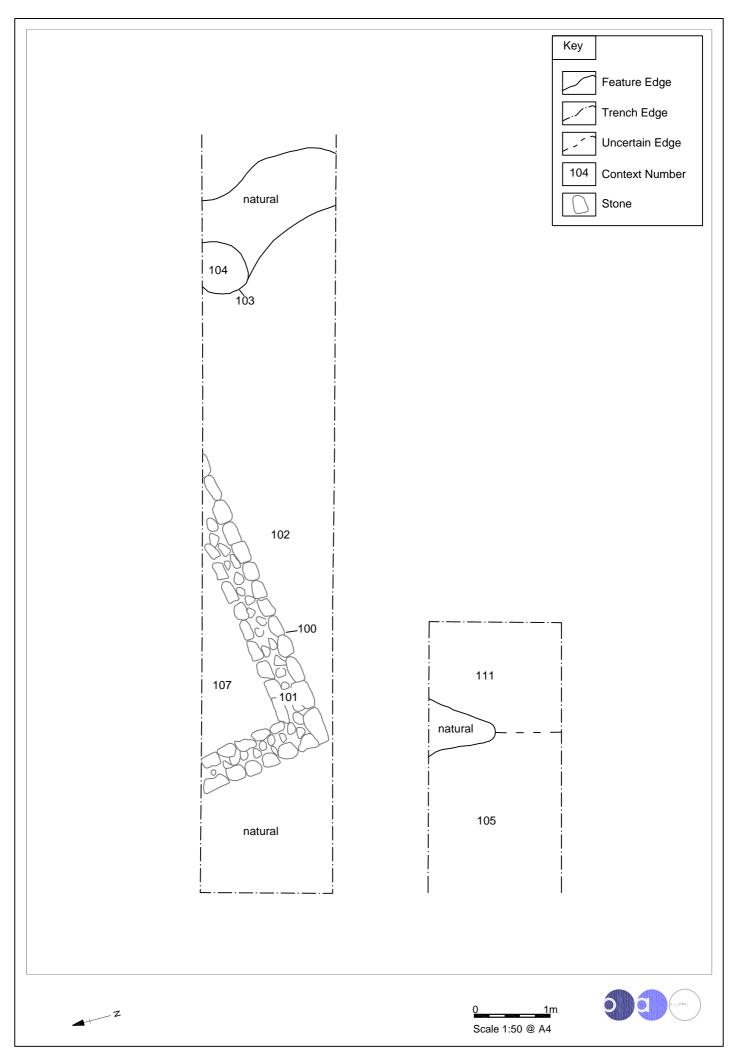


Figure 4: Plan of Trench 1

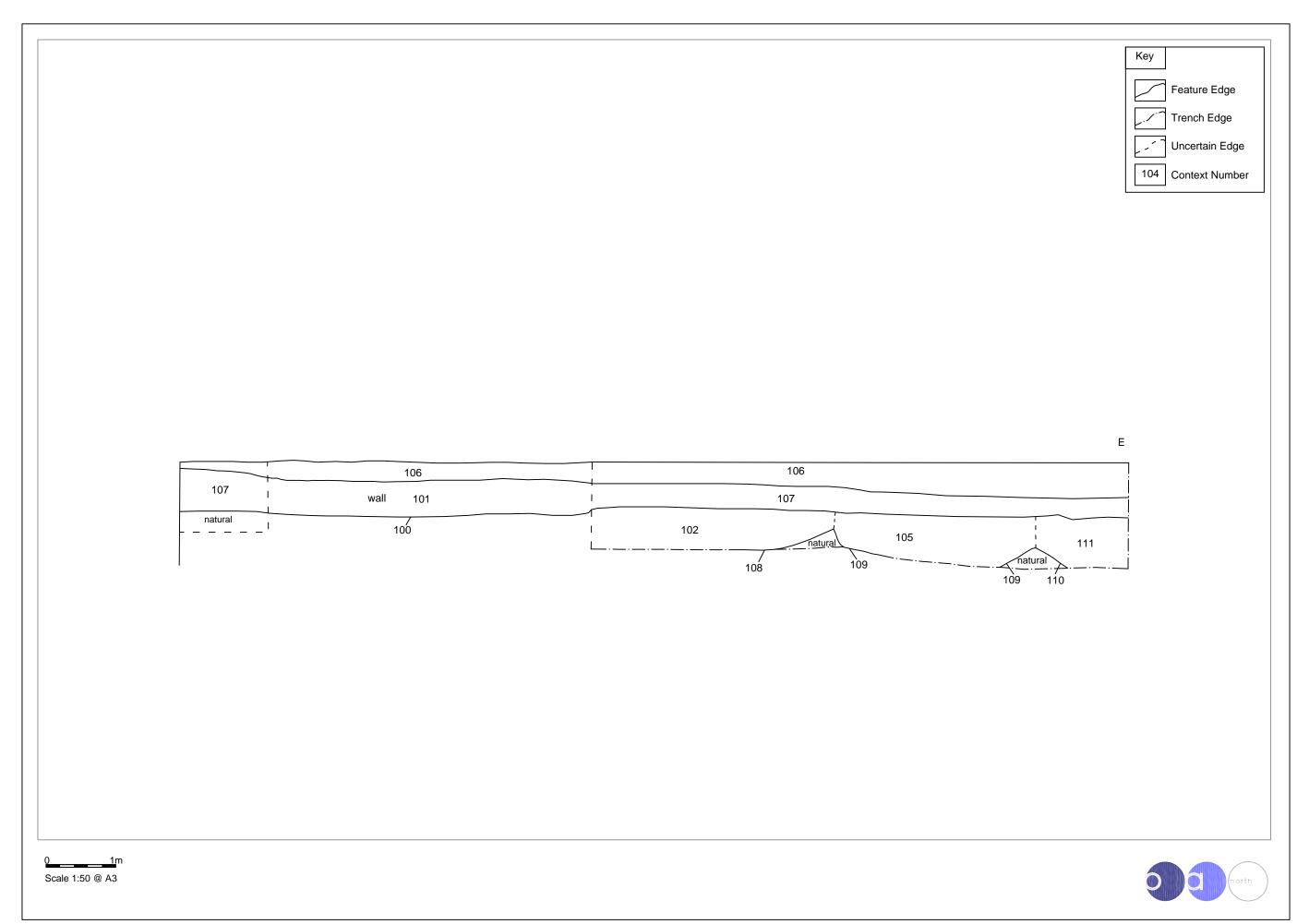


Figure 5: South-facing section of Trench 1

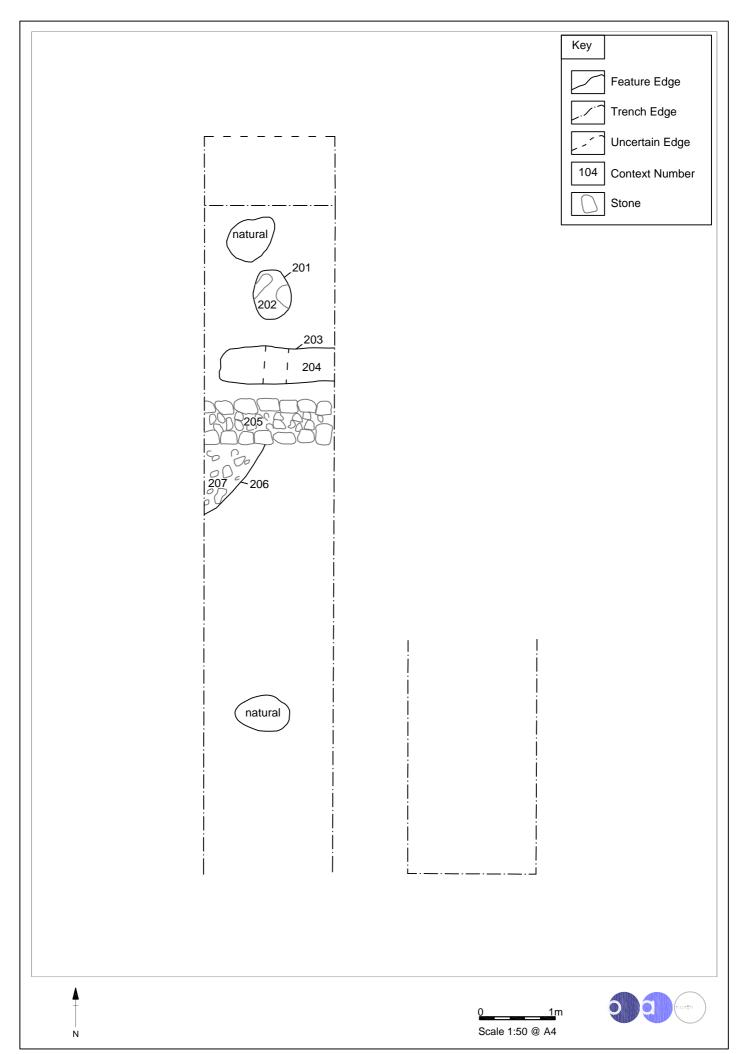


Figure 6: Plan of Trench 2

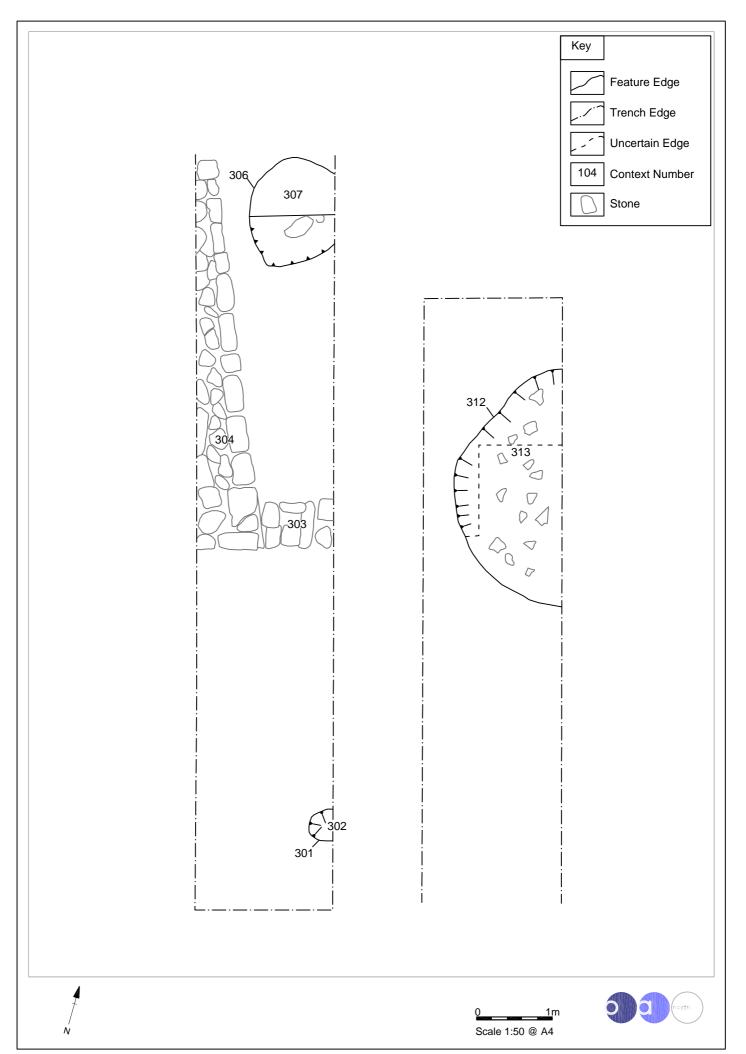


Figure 7: Plan of Trench 3

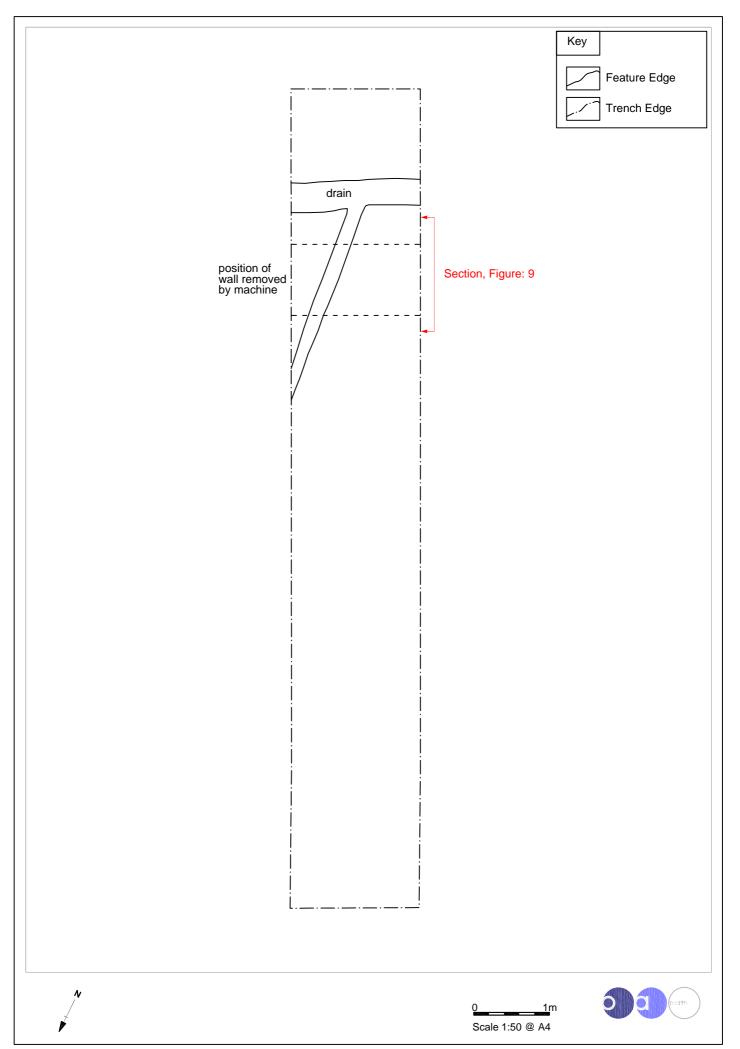


Figure 8: Plan of Trench 8

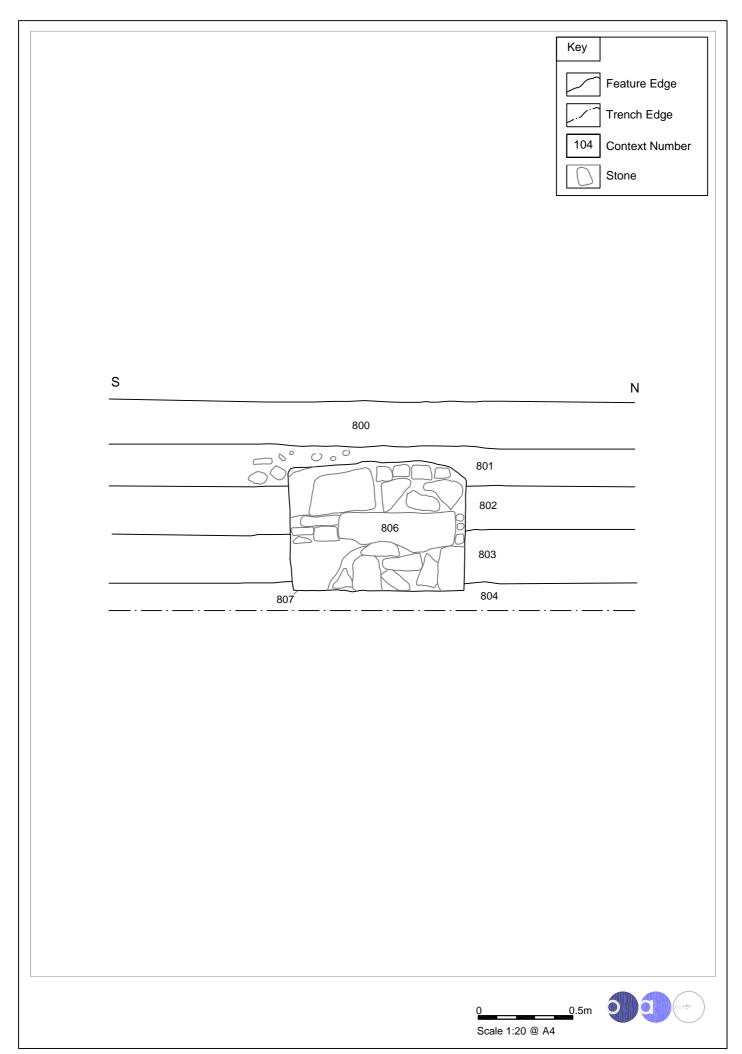


Figure 9: East-facing section of wall 806 in Trench 8

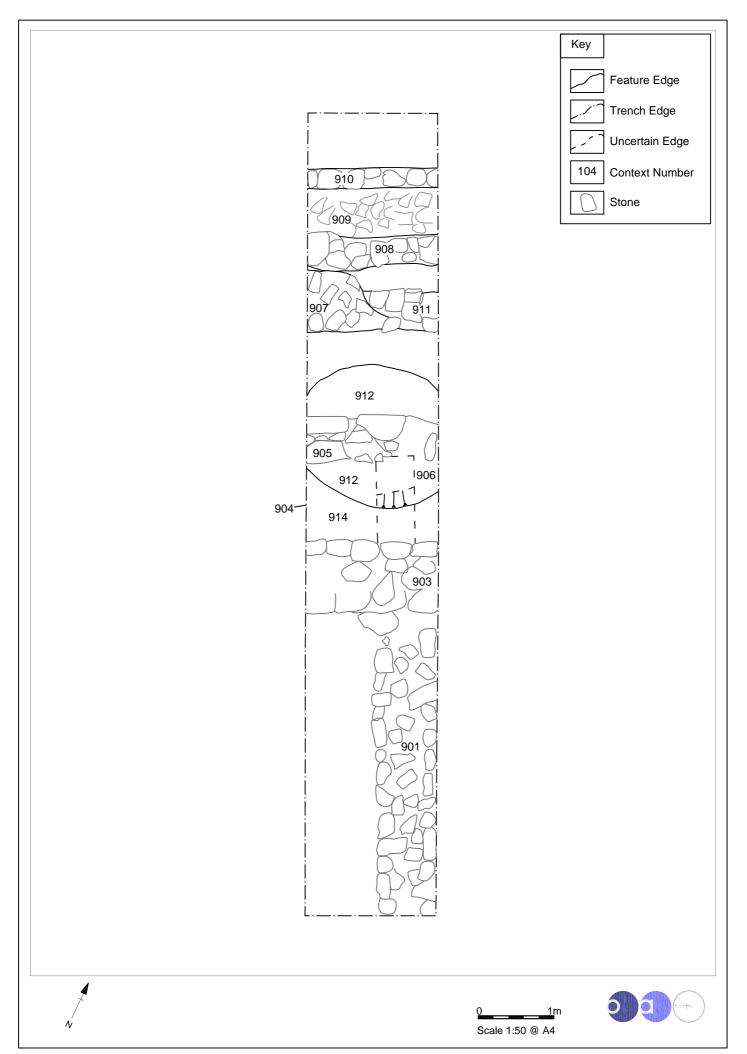


Figure 10: Plan of Trench 9

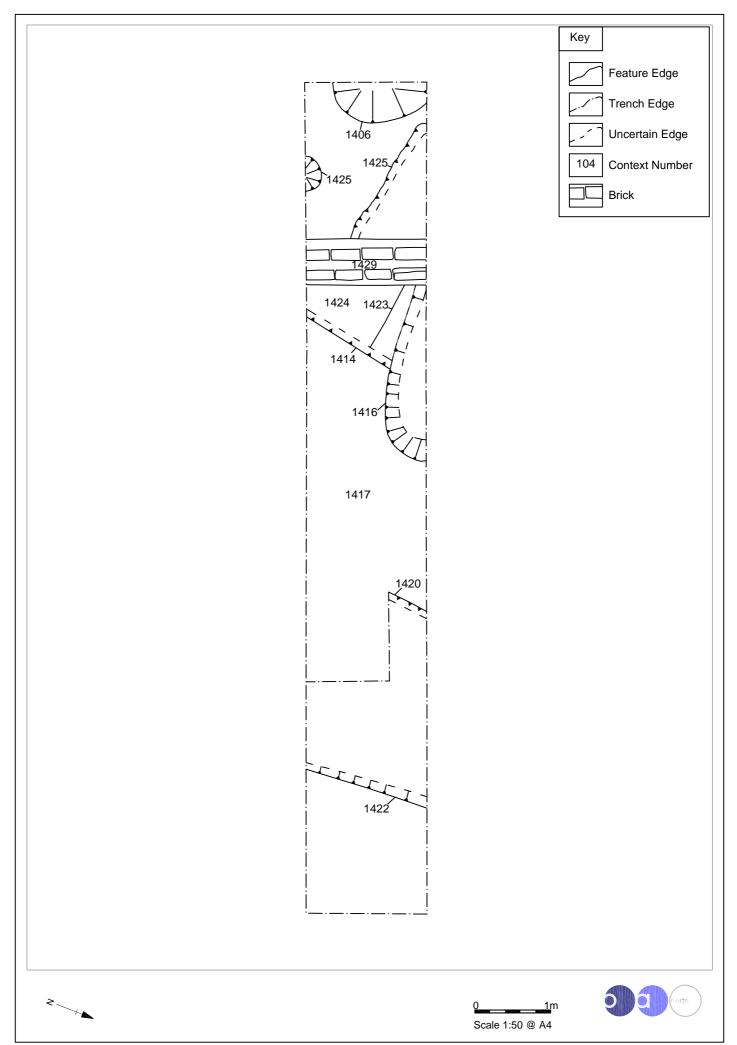


Figure 11: Plan of Trench 14

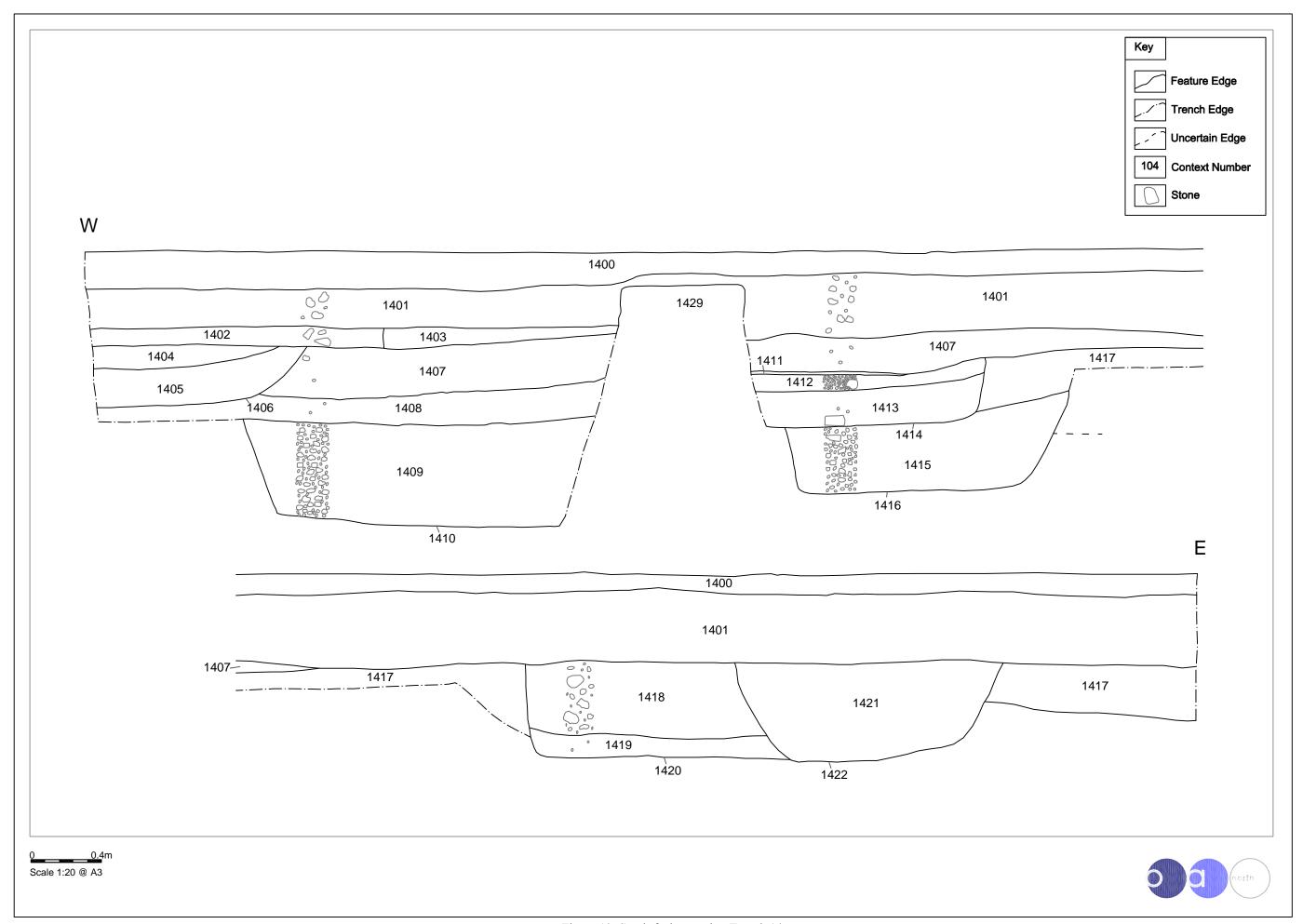


Figure 12: South-facing section Trench 14



Figure 13: Plan of walls and pits identified during the evaluation



Plate 1: Trench 1 viewed from the south-west



Plate 2: Wall 205, Trench 2



Plate 3: Trench 9 viewed from the south-east



Plate 4: Trench 13 viewed from the south-east



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Plate 6: Pits 1414, 1416 and 1423, viewed from the south-east

APPENDIX 1: PROJECT DESIGN

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Cumbria County Council's Archaeology Service (CCCAS) has been consulted by South Lakeland District Council regarding a planning application for the redevelopment of K Village, Lound Road, Kendal, Cumbria (SD 5174 9180). The scheme affects an area of archaeological interest, recorded on the County Sites and Monuments Record (ref. 2076). Consequently, CCCAS has recommended that an archaeological investigation of the site is necessary to further inform the planning process. This will take the form of a desk-based assessment and evaluation. The following document represents a project design originally compiled in July 2002 and revised for resubmission of the planning application at the request of The Farningham McCreadie Partnership Ltd (hereafter the client).

1.2 ARCHAEOLOGICAL BACKGROUND

- 1.2.1 The development of Kendal through the medieval period can be seen through fragmentary documentary records and small-scale archaeological interventions. The settlement of Kirkland, at the southern end of the medieval town, is recorded in Domesday (as *Chechebi*, 1086), from which it may be inferred that the mother church of the area had developed here. The settlement became the centre of a Norman barony in the later eleventh century, although there is evidence in Domesday Book of an earlier estate centred further north (probably on either Strickland Ketel or Strickland Roger). Richard I granted a Saturday market in 1189, and at some time between 1222 and 1246 William of Lancaster III, the lord of the manor, confirmed borough status on a settlement which seems to have been encouraged to the north of Kirkland. The document implies that it simply confirmed an existing situation and that, by the date of the charter, the inhabitants of Kendal considered themselves burgesses of a fully functioning urban centre.
- 1.2.2 The morphology of the settlement as seen in early maps (the earliest is Speed of 1611) suggests that there was a considerable element of deliberate planning of the streets of the medieval town. The contrast between the winding course of Kirkland, round the church (and the presumed site of the pre-Norman settlement), and the long straight streets of Highgate, Stricklandgate and Stramongate, on the northern side of the Blind Beck, is striking. These streets demonstrate all the attributes of deliberate urban planning, with narrow burgage plots extending back from the street frontage.
- 1.2.3 Nether Bridge to the north of the development area is medieval in origin, whilst Speed's map of 1611 depicts the area as open fields. Todd's map of 1787 shows some buildings on the site close to Nether Bridge and the same area is marked as 'Tannery Elleray' and 'Netherfield' on Wood's map of 1833. Remains of buildings, some potentially of early post-medieval date, could survive on the site.

1.3 OXFORD ARCHAEOLOGY NORTH

- 1.3.1 Oxford Archaeology North (OA North) has considerable experience of excavation of sites of all periods, having undertaken a great number of small and large scale projects throughout Northern England during the past 20 years, including work in Carlisle, Appleby, Kendal, Penrith, and other towns in Cumbria. Evaluations, assessments, watching briefs and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables. OA North is an **Institute of Field Archaeologists (IFA) registered organisation, registration number 17**, and all its members of staff operate subject to the IFA Code of Conduct.
- 1.3.2 OA North has particular experience of the archaeology of Kendal, having undertaken most of the archaeological assessments, evaluations, excavations and watching briefs in and around the town, including *inter alia* excavations in Highgate, on the site of the Westmorland

Shopping Centre, 65 and 110 Stricklandgate, at Elephant Yard, Chapel Lane, Kirkbarrow House and the on-going work at the Westmorland Gazette/Booths Supermarket site off Stricklandgate.

2. OBJECTIVES

2.1 The following programme has been designed to evaluate the archaeological deposits affected by the proposed development of the site. The required stages to achieve these ends are as follows:

2.2 Desk-Based Assessment

To undertake a desk-based survey of the existing resource including primary and secondary maps and documents.

2.3 Archaeological Evaluation

To undertake initial evaluation trenching of c 5% of the available area (an area of c 385m²) to determine the quality, extent and importance of any archaeological remains on the site. An additional 340m² may be required (equating to a total of 5% of the whole proposed development area) subject to the initial evaluation results.

2.4 Post-Excavation and Report Production

An evaluation report will be produced for the client within eight weeks of completion of the fieldwork. A site archive will be produced to English Heritage guidelines (1991) and in accordance with the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990).

3. METHODS STATEMENT

3.1 **DESK-BASED ASSESSMENT**

- 3.1.2 The following will be undertaken as appropriate, depending on the availability of source material, to set the evaluation results in their geographical, topographical, archaeological and historical context. The level of such work will be dictated by the time scale of the project.
- 3.1.3 Documentary and Cartographic Material: this work will comprise a desk-based survey of the existing resource. It will include collation and assessment of the Cumbria Sites and Monuments Record (SMR), and any photographic material lodged in the SMR or County Record Office will also be studied.
- 3.1.4 Published documentary sources will also be examined and assessed including national, regional and local journals, together with unpublished documents to include, where appropriate, reports by heritage conservation professionals and student theses. The study will examine place and field name evidence for the site and its environs.
- 3.1.5 Any cartographic material relevant to the study area as may be reasonably available will be assessed. This will include appropriate sections of County histories, early maps (printed and manuscript), and primary documentation such as tithe and estate plans etc. Particular emphasis will be upon the early cartographic evidence in the form of field and place names, which has the potential to inform the post-medieval occupation and land-use of the area; including old boundaries and trackways especially when relating to estate and parish boundaries, woodlands and any early buildings. These often provide important evidence of archaeological activity and transformation of the historic landscape. However, more recent cartographic analysis will also reveal the potential extent of intrusive development and disturbance on the site.

- 3.1.6 This work will involve visits and or correspondence searches of the following repositories: Cumbria Sites and Monuments Record in Kendal, County Records Office in Carlisle, Lancaster University Library and the OA North research archive.
- 3.1.7 **Aerial Photography:** an assessment of the extant air photographic cover will be undertaken. Any relevant photographic material held by Cumbria County Council will be studied. This may indicate the range and survival of archaeological and structural features in the designated area no longer visible at ground level.
- 3.1.8 **Physical Environment:** a rapid desk-based compilation of geological (both solid and drift), pedological, topographical and palaeoenvironmental information will be undertaken. It will be based on published geological mapping and any local geological surveys in the possession of the county council or the client. This will serve not only set the archaeological features in context but also serves to provide predictive data, that will increase the efficiency of the field inspection.
- 3.1.9 An assessment of any ground engineering survey information or geotechnical data for the site (e.g. borehole data or test pits), must be taken into account where available. This will provide information on the condition and status of buried deposits. The relevant logs will be included as an appendix to the report.

3.2 SITE VISIT

3.2.1 Following the desk-based assessment the site will be visited in order to relate the existing landscape to research findings, and acquire an understanding for areas of impact by the proposed redevelopment. The survey will note any features of potential archaeological interest, any areas of potentially significant disturbance, and hazards and constraints to undertaking further archaeological work on site (including the siting of live services and Tree Preservation Orders). This will enable a more informed plan of the position of the evaluation trenches to be compiled.

3.3 ARCHAEOLOGICAL EVALUATION

- 3.3.1 The programme of archaeological evaluation will involve trial trenching to determine the presence or absence of any previously unsuspected archaeological deposits and, if established, will then test their date, nature, depth and quality of preservation.
- 3.3.2 The evaluation is required by to examine c 5% area of the available area of site, equating to 385m^2 . This would normally entail the excavation of individual trenches measuring 1.7m x 20m, in this case approximately 11 trenches in total. The location of these trenches will be determined by the results of the desk-based assessment in approval with CCCAS.
- 3.3.3 Subject to these results an additional 340m² of trenching may be required to quantify the findings. This would therefore equate to 5% evaluation of the whole site proposed for redevelopment. This would amount to a further 10 trenches measuring 1.7m x 20m, or equivalent. This will take place upon consultation with CCCAS and the client.
- 3.3.4 The topsoil and recent overburden deposits will be subject to careful mechanical excavation (with a toothless ditching bucket) down to the depth of the first significant archaeological deposits under constant archaeological supervision. The deposits will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. Thereafter, all excavation will proceed by hand in a stratigraphic manner. The trenches will not be excavated deeper than 1.20m to accommodate health and safety constraints; any requirements to excavate below this depth will involve recosting.
- 3.3.5 Trenches will be located by use of GPS equipment which is accurate to +/- 0.25m, altitude information will be established with respect to Ordnance Survey Datum.

- 3.3.6 Any investigation of intact archaeological deposits will be exclusively manual. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features, which appear worthy of preservation *in situ*.
- 3.3.7 All information identified in the course of the site works will be recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology Service of English Heritage, with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Primary records will be available for inspection at all times.
- 3.3.8 Results of all field investigations will be recorded on *pro forma* context sheets. The site archive will include both a photographic record and accurate large scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration.
- 3.3.9 *Environmental Sampling:* environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). An assessment of the environmental potential of the site will be undertaken through the examination of suitable deposits by the in-house palaeoecological specialist, who will examine the potential for further analysis. The assessment would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits. The costs for the palaeoecological assessment are defined as a contingency and will only be called into effect if good deposits are identified and will be subject to the agreement of CCCAS and the client.
- 3.3.10 Advice will also be sought as to whether a soil micromorphological study or any other analytical techniques will enhance the understanding of the site formation processes, including the amount of truncation to buried deposits and the preservation of deposits within negative features. Should this be required the costs for analysis have been provided as a contingency.
- 3.3.11 *Faunal remains:* if there is found to be the potential for discovery of bones of fish and small mammals a sieving programme will be carried out. These will be assessed as appropriate by OA north's specialist in faunal remains, and subject to the results, there may be a requirement for more detailed analysis. A contingency has been included for the assessment of such faunal remains for analysis.
- 3.3.12 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. The CCCAS Archaeologist and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Home Office license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations.
- 3.3.13 *Treatment of finds:* all finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines.
- 3.3.14 *Treasure:* any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures

- relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.
- 3.3.15 All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum's archive curator.
- 3.3.16 **Reinstatement:** it is understood that there will be no requirement for reinstatement of the ground beyond backfilling. Following completion of the evaluation, the trench will be backfilled with the material removed in its excavation. Any other form of land reinstatement will be the responsibility of the client.
- 3.3.17 **Contingency plan:** a contingency costing may also be employed for unseen delays caused by prolonged periods of bad weather, vandalism, discovery of unforeseen complex deposits and/or artefacts which require specialist removal, use of shoring to excavate important features close to the excavation sections etc. This has been included in the Costings document and would be in agreement with the client.
- 3.3.18 The evaluation will provide a predictive model of surviving archaeological remains detailing zones of relative importance against known development proposals. In this way, an impact assessment will also be provided.

3.4 POST-EXCAVATION AND REPORT PRODUCTION

- 3.4.1 **Report:** one bound and one unbound copy of a written synthetic report will be submitted to the client, and a further three copies submitted to the Cumbria SMR within eight weeks of completion. The report will include;
 - a site location plan related to the national grid
 - a front cover to include the planning application number and the NGR
 - the dates on which the fieldwork was undertaken
 - a concise, non-technical summary of the results
 - a description of the methodology employed, work undertaken and results obtained
 - the report will also include a complete bibliography of sources from which data has been derived.
 - a copy of the CCCAS project brief in the appendices should a revised copy be issued
 - a copy of this project design in the appendices, and indications of any agreed departure from that design
 - any relevant geotechnical data
- 3.4.2 This report will be in the same basic format as this project design; a copy of the report can be provided on CD, if required.
- 3.4.3 Archive: the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (Management of Archaeological Projects, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. It will include summary processing and analysis of all features, finds, or palaeoenvironmental data recovered during fieldwork, which will be catalogued by context. All artefacts will be processed to MAP2 standards and will be assessed by our in-house finds specialists.

- 3.4.4 The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct. OA North conforms to best practice in the preparation of project archives for long-term storage. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the Cumbria SMR (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects with the appropriate County Record Office. The material archive (artefacts and ecofacts) will be deposited with Kendal museum following agreement with the client
- 3.4.5 *Collation of data:* the data generated will be collated and analysed in order to provide an assessment of the nature and significance of the known surface and subsurface remains within the designated area. It will also serve as a guide to the archaeological potential of the area to be investigated, and the basis for the formulation of any detailed field programme and associated sampling strategy, should these be required in the future.
- 3.4.6 The Arts and Humanities Data Service (AHDS) online database project *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.
- 3.4.7 *Confidentiality:* all internal reports to the client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project brief and project design, or for any other explicit purpose, can be fulfilled, but will require separate discussion and funding.

4. HEALTH AND SAFETY

- 4.1 OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A risk assessment will be completed in advance of any on-site works and copies will be made available on request to all interested parties.
- 4.2 Any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client or main contractor on site to ensure all procedures can be met.
- 4.3 Similarly, any drawings or knowledge of live cables or services that may pose a risk to OA North staff during evaluation must be made known to the project manager of OA North before site work. This will ensure the risk is dealt with appropriately. The site will be scanned using a Cable Avoidance Tool (CAT) in advance of the commencement of the site works using the known service location plans.
- 4.4 Should areas of previously unknown contamination be encountered on site the works will be halted and a revision of the risk assessment carried out. Should it be necessary to supply additional PPE or other contamination avoidance equipment this will be costed as a variation.

5. WORK TIMETABLE

- 5.1 **Desk-Based Assessment;** this element is expected to take approximately six days to complete, including the site visit and preparation of notes to be included in the final evaluation report. A plan of the proposed location of trenches will be compiled and forwarded to CCCAS.
- 5.2 **Archaeological Evaluation;** it is anticipated that this element will require approximately eight days to complete, including machining and backfilling.

- 5.3 **Post-Excavation and Report Production;** an evaluation report will be submitted within eight weeks of the completion of the fieldwork. However, should an interim statement be required this can be issued within two weeks but instruction must be received from the client prior to completion of the fieldwork.
- 5.4 **Written Instruction;** OA North can execute projects at very short notice once written confirmation of commission has been received from the client. Two weeks notice would be sufficient to allow the necessary arrangements to be made to commence the task.

6. PROJECT MONITORING

- 6.1 **Access:** liaison for site access during the site visit and evaluation will be arranged with by the client unless otherwise instructed prior to commencement of the archaeological investigation.
- Whilst the work is undertaken for the client, the County Archaeologist will be kept fully informed of the work and its results, and will be notified a week in advance of the commencement of the fieldwork. Any proposed changes to the project design will be agreed with CCCAS in consultation with the client.

7. STAFFING PROPOSALS

- 7.1 The project will be under the direct management of **Emily Mercer BA (Hons) MSc AIFA** (OA North senior project manager) to whom all correspondence should be addressed.
- 7.2 All elements of the archaeological investigation will be supervised by either an OA North project officer or supervisor experienced in this type of project. Due to scheduling requirements it is not possible to provide these details at the present time. All OA North project officers and supervisors are experienced field archaeologists capable of carrying out projects of all sizes.
- Assessment of the finds from the evaluation will be undertaken under the auspices of OA North's in-house finds specialist **Christine Howard-Davis BA MIFA** (OA North project officer). Christine has extensive knowledge of all finds of all periods from archaeological sites in northern England. However, she has specialist knowledge regarding glass, metalwork, and leather, the recording and management of waterlogged wood, and most aspects of wetland and environmental archaeology.
 - 7.4 Assessment of any palaeoenvironmental samples which may be taken will be undertaken by **Elizabeth Huckerby MSc** (OA North project officer). Elizabeth has extensive knowledge of the palaeoecology of the North West through her work on the English Heritage-funded North West Wetlands Survey.

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SCAUM (Standing Conference of Archaeological Unit Managers), 1991 *Health and Safety Manual*. Poole

United Kingdom Institute for Conservation (UKIC), 1990 Guidelines for the preparation of archives for long-term storage

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APPENDIX 2: TRENCH SUMMARIES

Trench 1	Dimensions 13.6m by 1.7m	Orientation north-west/s	south-east
Context	Description		Depth
100	Cut for wall foundation 101.		0.25-0.75m
101	Wall built of dressed stone on outer faces	with a rubble core.	0.25-0.75m
102	Fill of large pit <i>108</i> . Dark grey-brown, s amounts of brick rubble.	andy-silt containing large	0.65-1.25m+
103	Cut of modern post-hole.		0.25-1.2m
104	Fill of modern post-hole 103.		0.25-1.2m
105	Fill of large pit 109. Dark grey-brown, sandy-silt containing large amounts of brick rubble.		0.65-1.25m+
106	Tarmac and hardcore.		0.0-0.5m
107	Dark grey-brown sandy-silt. Possibly a remnant plough/garden soil.		0.5-0.75m
108	Cut of large pit, filled with 102.		0.65-1.25m+
109	Cut of large pit, filled with 105.		0.65-1.25m+
110	Cut of large pit, filled with 111.		0.65-1.25m+
111	Fill of large pit <i>110</i> . Dark grey-brown, s amounts of brick rubble.	andy-silt containing large	0.65-1.25m+

Trench 2	Dimensions 12.8m by 1.7m	Orientation north-east/se	outh-west
Context	Description		Depth
200	Tarmac and hardcore		0-0.25m
201	Modern pit, 0.5m in diameter.		1m+
202	Fill of pit 201 contains modern iron brackets. Not excavated.		1m+
203	Modern rectangular cut only 0.04m deep with very steep sides.		1-1.04m
204	Fill of 203, mid brown silty-clay with 5% sub-angular stone.		1-1.04m
205	Wall constructed of roughly dressed facing stones and rubble core.		0.25-1.0m
206	Pit cut.		0.25-0.65m

207	Fill of 206 , dark brown sandy-silt containing approximately 70% medium to large, angular to sub-angular stone.	0.25-0.65m
208	Mid grey-brown silty-clay, possible buried plough-soil.	0.25-0.5m
209	Natural orange-brown clayey-silt with very few inclusions.	0.5m+

Trench 3	Dimensions 23m by 1.6m	Orientation north-west/s	south-east
Context	Description		Depth
300	Tarmac and hardcore.		0.0-0.2m
301	Pit cut, 0.8m in diameter, filled with 302 ar	nd <i>308</i> .	0.5-0.8m
302	Mid brown clay containing 50% gravel in 301.	clusions, upper fill of pit	0.5-0.8m
303	East-west aligned wall constructed of d with a rubble core.	ressed sandstone blocks	0.2-0.5m
304	North-south aligned wall constructed of dressed sandstone blocks with a rubble core.		0.2-0.55m
305	Foundation cut for wall 304.		0.3-0.55m
306	Pit cut measuring 0.95m in diameter, filled with 307.		0.5-0.76m
307	Dark brown silty-clay with 50-60% stone inclusions. Fill of pit 306.		0.5-0.76m
308	Mid brown silty fill of pit 301.		0.8-0.9m
309	Mid grey silty-clay, probably an old plough	n-soil.	0.2-0.45m
310	Bands of re-deposited light and dark gravel in a clay matrix.		0.45-0.6m
311	Natural, orange-brown silty-clay.		0.6m+
312	Cut of large pit measuring 3m in diameter. Filled with 313.		0.5-0.83m
313	Mid brown silty-clay with 50% stone inclu	sions. Fill of pit 312.	0.5-0.83m

Trench 4	Dimensions 9.3m by 1.7m	Orientation north-east/se	outh-west
Context	Description		Depth
400	Tarmac and hardcore.		0-0.22m
401	Dump of large stone blocks extending the entire length of the trench.		0.22-0.38m
402	Mid grey, sandy-silt with frequent small gr	ravel inclusions.	0.38-0.62m

	Levelling deposit.	
403	Natural gravel.	0.62m+
404	Modern culvert/drain.	0.22-0.62m+
405	Large stone lined soak-away filled with cinders.	0.22-0.62m+

Trench 5	Dimensions 20m by 1.7m	Orientation north-east/se	outh-west
Context	Description		Depth
500	Topsoil and turf. Mid grey-brown sandy-si	lt with sparse inclusions.	0-0.2m
501	Natural, light orange-brown sandy-clay, with occasional sub-rounded pebbles. Cut by plough marks running north/south.		0.35m+
502	Modern drain.		0.2-0.9m+
503	Modern drain.		0.2-0.9m+
504	Modern drain.		0.2-0.9m+
505	Hardcore.		0.2-0.3m
506	Dark grey-brown silt-loam. Possible remnant plough-soil.		0.3-0.55m
507	Natural. Orange-brown silty-clay with inclusions.	20-30% small gravel	0.55m+

Trench 7	Dimensions 12.8m by 1.7m	Orientation north-west/s	south-east
Context	Description		Depth
700	Tarmac.		0-0.08m
701	Hardcore.		0.08-0.24m
702	Mixed rubble consisting of large stones and brick.		0.24-0.45m
703	Dark yellow-brown clay-silt with 20% gravel inclusions. Remnant plough-soil.		0.45-0.72m
704	Natural. Orange-brown silty-clay with 50-60% small gravel inclusions.		0.72m+
705	Thin brick built wall with concrete foundations.		0.24-0.5m
706	Concrete floor extending for 0.5m south of	wall 705 .	0.3-0.35m

Trench 8	Dimensions 10.8m by 1.7m	Orientation north-west/s	south-east
Context	Description		Depth
800	Topsoil and turf.		0-0.24m
801	Layer of rubble and cinders.		0.24-0.44m
802	Dark grey silt with 50% gravel inclusions.		0.44-0.68m
803	Red-brown silty-sand with 80% small gravel inclusions. Levelling deposit.		0.68-0.96m
804	Mid grey sandy-silt with 10% gravel. Remnant plough-soil.		0.96-1.2m
805	Natural gravel.		1.2m+
806	Wall foundations constructed of large stone blocks up to 0.7m by 0.7m; dry bonded with smaller stones filling the gaps.		0.3-1.0m
807	Foundation cut for wall 806.		0.3-1.0m

Trench 9	Dimensions 10.6m by 1.7m	Orientation north-west/s	south-east
Context	Description		Depth
900	Tarmac and hardcore.		0.0-0.66m
901	Stone built wall aligned from north-west to of the wall are in dressed stone blocks with		0.66-1.05m
902	Foundation cut for wall 901.		0.66-1.05m
903	Stone built wall aligned from north-east to of the wall are in dressed stone blocks with		0.66-1.05m
904	Foundation cut for wall 903.		0.66-1.05m
905	Stone lined drain/culvert.		1.05m+
906	Pit cut sub-circular, cut away to north by wall drain/culvert 905. Filled with 912.		1.05-1.3m
907	Rubble dump of brick stone and slate.		1-1.1m
908	Stone wall forming southern side of culvert.		1.05m+
909	Rubble infill of culvert. Un-excavated.		1.05m+
910	Stone wall forming northern side of culvert.		1.05m+
911	Slate covered culvert. Un-excavated.		1.05m+
912	Mid brown sandy-clay with 50% gravel in	clusions. Fill of pit 906 .	1.05-1.3m

Trench 10	Dimensions 10m by 1.7m	Orientation north-east/so	outh-west
Context	Description		Depth
1000	Concrete and hardcore.		0.0-0.36m
1001	Natural, Mid brown sandy-silt with 80% gravel inclusions.		0.36m+
1002	Natural, light orange-brown sandy-clay rounded pebbles.	, with occasional sub-	0.36m+

Trench 12	Dimensions 20m by 1.7m	Orientation north-west/s	south-east
Context	Description		Depth
1200	Concrete slab.		0.0-0.22m
1201	Light pink-grey, clayey-sand with 20% small rounded stone. Seen in southern end of trench only. Fill of possible palaeochannel.		0.22-0.35m
1202	Mid yellow-brown coarse sand. Seen in southern end of trench only. Fill of possible palaeochannel.		0.35-0.58m
1203	Natural gravel with some large stones up to	0.7m across.	0.35m+

Trench 13	Dimensions 19m by 1.7m Orientation north-west/s		south-east	
Context	Description	Depth		
1300	Tarmac and hardcore.	0.0-0.3m		
1301	Red brown cinders containing stone and br	0.3-0.5m		
1302	Dark grey-brown sandy-silt with sparse i brick rubble.	0.5-0.68m		
1303	Dark yellow-brown silt with sparse inclus of layers 1302 and 1304.	0.68-0.8m		
1304	Natural, orange-brown clay silt.	0.8m+		
1305	Brick built wall on concrete foundations trench.	0.3-0.8m+		

Trench 14	Dimensions 23m by 1.6m Orientation north-east/south-west		
Context	Description	Depth	
1400	Tarmac and hardcore.	0.0-0.2m	
1401	Dark grey silt with 40% rounded grav deposit.	0.2-0.43m	
1402	Layer of rubble and lime mortar.		0.43-0.56m
1403	Dark grey sandy-silt containing 70% pea gr	rit gravel.	0.43-0.56m
1404	Compacted grey sandy-silt containing 80-9	0% pea grit gravel.	0.56-0.65m
1405	Layer of black cinders and brick rubble. Up	oper fill of pit 1406.	0.56-0.68m
1406	Sub-circular pit cut.		0.56-1.2m
1407	Layer of mid-grey sandy-silt with 2% stone	e inclusions.	0.56-0.82m
1408	Dark yellow brown silty-clay with sparse natural.	0.82-1.0m	
1409	Dump of gravel filling pit 1410.	1-1.56m	
1410	Sub rectangular flat bottomed pit, filled wit	1-1.56m	
1411	Thin layer of cinders filling pit 1414.	0.68-0.7m	
1412	Light grey sandy-silt with 80-90% pea grit	0.7-0.8m	
1413	Dark grey-brown silt with sparse inclusions	0.8-1.0m	
1414	Sub-rectangular, flat bottomed pit cut. Fil. 1413.	0.68-1.0m	
1415	Dump of gravel filling pit 1416.	0.8-1.18m	
1416	Sub rectangular flat bottomed pit, filled wit	th 1415.	0.8-1.18m
1417	Layer of re-deposited natural silty-clay. Policy 1408.	0.6-0.9m	
1418	Dump of gravel filling pit 1420.	0.5-0.92m	
1419	Light green-grey sandy-silt. Lower fill of p	0.92-1.04m	
1420	Sub-rectangular flat bottomed pit, filled wit	0.05-1.04m	
1421	Dump of brick rubble filling pit 1422.	0.5-1.06m	
1422	Sub-rectangular flat bottomed pit, filled wit	0.5-1.06m	
1423	Sub-rectangular pit, filled with 1424. Un-ex	1.0m+	
1424	Dump of gravel filling pit 1423.	1.0m+	

1425	Irregular shaped pit with an undulating base. Probable tree throw.	0.9-1.12m
1426	Dark grey-brown silty-sand with 80% gravel inclusions. Dump of material in pit <i>1406</i> .	0.74-1.02m
1427	Mid brown silty-clay. Fill of 1425.	0.98-1.12m
1428	Layer of dark brown sandy-silt.	0.82-0.9m
1429	Brick wall on concrete foundation.	0.24m+

APPENDIX 3: FINDS SUMMARY

Trench	Context	Quantity	Material	Description	Date range
1	102	1	Glass	Dark olive green wine bottle	Eighteenth -
					nineteenth century
1	102	8	Pottery	White earthenware, including 'Willow' transfer-printed plate rim, 'Broseley' transfer-printed bowl rim, blue shell edge plate rim, and factory-made slipware bowls	Late eighteenth - twentieth century
1	102	1	Pottery	Brown-glazed red earthenware crock or jar	Late seventeenth - early twentieth century
1	102	1	Pottery	Brown-glazed red slip-coated beige earthenware rim of crock or jar	Late seventeenth - early eighteenth century
1	105	7	Pottery	Brown-glazed red earthenware, including bowl base	Late seventeenth - early twentieth century
1	105	22	Pottery	White earthenware, including blue shell edge plate rim and feather edge creamware plate rim	Late eighteenth - twentieth century
1	105	1	Pottery	Brown-glazed red earthenware fineware	Late seventeenth - twentieth century
1	105	1	Pottery	Red earthenware	Late seventeenth - twentieth century
1	105	1	Bone	Large mammal rib	Not closely dateable
2	U/S	2	Clay tobacco pipe	Stems, with wide bore and narrow-medium bore	Seventeenth - early twentieth century
2	U/S	7	Pottery	White earthenware, including creamware custard cup rim	Late eighteenth - twentieth century
2	U/S	4	Pottery	Brown-glazed red earthenware	Late seventeenth - early twentieth century
2	U/S	1	Pottery	Green-glazed fully reduced	Fifteenth - seventeenth century
2	U/S	2	Bone	Right tibia from young calf, and rib from medium mammal	Not closely dateable
3	302	1	Clay tobacco pipe	Stem with medium bore	Seventeenth - early twentieth century
3	302	3	Pottery	White earthenware vessel base, all with 'Asiatic Pheasants' transfer print	Nineteenth - twentieth century
3	302	1	Pottery	Self-glazed beige earthenware hollow-ware vessel	Late eighteenth - twentieth century
3	307	8	Mortar	Lumps with white matrix	Not closely dateable
3	307	4	Mortar	Lumps with white matrix and dark grey inclusions	Not closely dateable
3	307	1	Shell	Oyster valve	Not closely dateable
3	307	1	Clay tobacco pipe	Bowl with moulded ridges	Eighteenth - early twentieth century

Trench	Context	Quantity	Material	Description	Date range
3	307	2	Pottery	White earthenware	Late eighteenth -
					twentieth century
3	307	3	Pottery	Red earthenware, possibly from large flower pots or similar vessels	Late seventeenth - twentieth century
3	307	5	Bone	Medium mammal rib, domestic fowl right femur, two medium mammal bones (indeterminate), indeterminate bone	Not closely dateable
7	703	1	Pottery	Late medieval fully reduced greenware jug rim	Fifteenth - seventeenth century
9	912	2	Pottery	Brown-glazed red earthenware	Late seventeenth - early twentieth century
14	1409	5	Pottery	Brown-glazed red earthenware	Late seventeenth - early twentieth century
14	1409	1	Pottery	White earthenware	Late eighteenth - twentieth century
14	1409	1	Pottery	Brown-glazed red earthenware fineware vessel handle terminal, decorated with silver lustre	Late seventeenth - twentieth century
14	1409	1	Pottery	Red earthenware factory-made slipware jug	Late eighteenth - twentieth century
14	1409	1	Clay tobacco pipe	Stem fragment	Seventeenth - early twentieth century
14	1409	1	Shell	Cockle valve	Not closely dateable
14	1409	1	Glass	Flat and colourless, from window pane	Nineteenth - twentieth century
14	1409	1	Bone	Left tibia from sheep or goat	Not closely dateable
14	1413	1	Glass	Flat and light blue, from window pane	Seventeenth - twentieth century
14	1413	3	Bone	Right radius from sheep or goat, unfused epiphysis from right proximal tibia of sheep or goat, vertebra from large mammal	Not closely dateable
14	1415	5	Pottery	Brown-glazed red earthenware	Late seventeenth - early twentieth century
14	1415	2	Pottery	Red earthenware	Late seventeenth - early twentieth century
14	1415	1	Clay tobacco pipe	Stem with narrow-medium bore	Seventeenth - early twentieth century
14	1419	1	Pottery	Tin-glazed earthenware plate or dish with blue painted decoration	Eighteenth century
14	1419	4	Pottery	White earthenware	Late eighteenth - twentieth century
14	1419	2	Pottery	Brown-glazed red earthenware, including possible pancheon base	Late seventeenth - early twentieth century
14	1419	1	Pottery	Brown-glazed grey-bodied stoneware with green-glazed interior	Eighteenth - twentieth century

Trench	Context	Quantity	Material	Description	Date range
14	1419	1	Copper	Corroded tag	Post-medieval
			alloy		
14	1419	1	Bone	Horse rib	Not closely dateable