



YORK ARCHAEOLOGICAL TRUST



**SEWAGE ATTENUATION TANKS,
28-40 BLOSSOM STREET,
YORK**

EXCAVATION ASSESSMENT REPORT

by I.D. Milsted

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Registered Office: 47 Aldwark, York, UK, YO1 7BX

Phone: +44 (0)1904 663000 Fax: +44 (0)1904 663024

Email: archaeology@yorkat.co.uk Internet: <http://www.yorkarchaeology.co.uk>

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Abbreviations

AOD	Above Ordnance Datum
CBM	Ceramic building material
OSA	On-site Archaeology
YAT	York Archaeological Trust

ABSTRACT

An excavation at 28-40 Blossom Street conducted between 30th June and 14th August 2009 encountered natural glacial deposits overlain by six phases of Roman activity dating from the late 1st to the late 4th centuries AD, 3 phases of medieval deposits and 2 phases of post-medieval and modern activity.

Roman activity consisted of 1st/2nd century ditches and a small road, mid 2nd / early 3rd century levelling and possible industrial and funerary activity, major 3rd century levelling and possible structures and a mid/late 4th century clearance and building. Of specific interest are the early ditches which have potential parallels nearby, the possibility of mid 2nd / early 3rd century funerary features given the proximity of the site to known cemeteries, and the apparent lack of any trace of the main road from Eboracum to Calcaria, thought to lie immediately north-west of the excavation.

Post-Roman, medieval and modern activity was limited to evidence of 11th-13th century 'back-land' agricultural activity, overlain by 1m of medieval ploughsoil and the remains of nineteenth century buildings demolished in the 1960s.

1. INTRODUCTION

An archaeological excavation was carried out on behalf of The Blossom Street Venture in advance of the installation of two sewage attenuation tanks in the car park to the rear of the former Prudential Insurance offices at 28-40 Blossom Street, York. This operation formed part of the refurbishment of the office building into a hotel. The excavation ran from 30th June to 14th August 2009. The site had been previously evaluated by MAP in 2000, when evidence for Roman cobbled surfaces and structures was identified, along with medieval pits and nineteenth century foundations (MAP, 2000, 3).

2. METHODOLOGY

The trench was aligned south-west / north-east and measured 9.6m x 6.25m. After insertion of the steel sheet shoring, the workable dimensions of the trench were 9.4m x 6m. The trench outline was cut through the concrete with a stone saw, after which the 0.10m thick concrete and 0.25m thick crushed limestone make-up were mechanically removed. A 1m wide trench was then machine-excavated under archaeological observation around the interior perimeter to insert the hydraulic shoring brace. Due to the pronounced slope of 0.40m from south-east to north-west across the car park, this trench was 0.30m deep on the south-eastern side and 0.70m deep on the north-western side (see below).

Following the insertion of the sheet shoring and installation of the brace, the remaining overburden was mechanically removed. Twentieth and 19th century structures and overburden were encountered at 0.30m BGL and were rapidly recorded before being mechanically removed, in accordance with the project specification. At approximately 0.95m BGL, a post-medieval culvert was recorded and removed. Below this was a 0.60-0.80m thick deposit interpreted as agricultural soil. Due to the homogenous nature of this deposit, it was sampled and mechanically removed with a 2m ditching blade under observation until a distinct change was identified at 1.40-1.70m BGL. Deposits below this probable agricultural soil were hand excavated from this point.

On commencement of hand-excavation, it was apparent that a modern test pit cut from the surface in the south-western corner of the trench had passed through the entire sequence of deposits in that corner, revealing a further 1.2m of stratified deposits in its section below the agricultural soil. This was significantly more material than originally anticipated and informed changes in the excavation methodology as the site progressed.

During the excavation, several large deposits of homogenous accumulated soils were identified. In the light of the greater than anticipated depth of archaeology referred to above, these deposits were half-sectioned by hand along the long central axis of the trench, with the remaining half removed in shallow spits by mechanical excavator. This measure was employed to ensure sufficient project time remained to record and hand-excavate more clearly differentiated deposits with appropriate care; even with this approach, with the kind co-operation of our client, the excavation had to be extended by one week.

The final formation level of the trench contained a 0.40m step along the central axis of the trench, with the south-eastern side excavated to a depth of 13.29m AOD (2.83m BGL) and the north-western side excavated to 12.88m AOD (2.84m BGL), taking into account the significant slope across the surface at the top of the trench. Natural deposits were only encountered in the deeper, north-western half of the trench, and so in the south-eastern half some archaeological deposits remained *in-situ* (plate 24). These were recorded in plan and in section.

The standard YAT single-context recording procedure was employed throughout the excavation (YAT 2009) and all contexts were individually photographed. Samples were taken when appropriate, consisting of 30 litre bulk sieve samples and 10 litre GBA samples. Finds and samples were regularly removed to the YAT facilities throughout the project to ease the pressure on space and improve the long-term conservation potential of the artefacts. All the archive records are held by YAT under the accession code YORYM: 2009.156. The YAT project number was 5244.

3. LOCATION, GEOLOGY AND TOPOGRAPHY

The site was located at NGR SE 5963 5137 on the north-western side of Blossom Street (figure 1), in a former car park behind the building formerly known as Prudential House. The former Odeon cinema building overlooked the site from the south-west, with the modern Jarvis building forming the north-western boundary and the refurbished former Prudential House constituting the north-eastern and south-eastern boundaries of the area (figure 2).

The drift geology of the area consists of boulder clays and sand overlying solid geological layers of Bunter and Keuper Sandstone (Geological Survey, 1963). Previous investigations in the area had located natural drift deposits at around 12.70m AOD (Clarke 1991, 8).

The area had been used as a car park, and was surfaced with concrete. There was a pronounced slope running from 16.12m AOD at the south-eastern limit of excavation to 15.72m at the north-western limit of excavation. This was a fall of 0.40m over 6m, or a ratio of approximately 1:15.

4. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The site is located close to the projected line of the Roman road designated 10 by the Royal Commission on Historical Monuments (RCHMY1, 3; figure 2). This was the main approach road to the fortress from the south-west, connecting *Eboracum* with *Calcaria* (Tadcaster) (Brinklow *et al* 1986, 101), and correlates fairly closely with the modern A64 (Ottaway 2004, 50), and with the modern A1036 Tadcaster Road, which runs parallel to and slightly to the south-east of Road 10. The alignment of the road is based on observations made from near the probable bridgehead across the Ouse (observed during the Wellington Row excavations; Ottaway 2004, 93), several antiquarian and nineteenth century sightings within the *colonia* walls (RCHMY1, 3; Ottaway 2004, 92) and from several encounters in Blossom Street itself, discussed below. Approximately a mile to the south-west, the road was located during the 2003 excavations on the site of the former Starting Gate pub, near the junction of Tadcaster Road and St Helen's Road (Ottaway 2004, 50; McComish 2003).

Ground-works at 1 The Crescent, just south-west of the current site, encountered cobbles interpreted as Road 10 in the 1870s and it was also recorded beneath the Odeon cinema in the 1930s (RCHMY1, 3; Raine 1955, 312). Excavations conducted by LP Wenham between 1953-1955 identified cobbled surfaces which were interpreted as Road 10, along with a junction with a road leading into the Holgate area (Wenham 1965, 527) just 100m to the north-east of the current A1036/A59 junction (figure 2). Excavations conducted by YAT at 14-20 Blossom Street covered some of the area investigated by L.P. Wenham but although metalled surfaces were encountered, they did not accord with the scale of those identified in the 1950s (Clarke 1991, 13). There remains, then, some doubt as to the precise location of this thoroughfare which the current fieldwork had the potential to clarify.

Also located during LP Wenham's excavations was a small road-side building, tentatively interpreted as a 'wayside shrine' (Wenham, 1965, 541). This building had five identifiable phases which seem to span the Roman presence in York; the major detail of note was a change of alignment from the main road in phases 1 and 2 (1st – 2nd century) to the 'new' spur road in phases 3-5 (late 2nd/early 3rd century to possibly early 5th) (Wenham 1965, 541). Some evidence for further buildings was encountered during the 1991 YAT

excavations (Clarke 1991, 10), and ephemeral structural traces were also recorded by MAP during evaluation ahead of the construction of the Jarvis building that overlooks the current site from the north-west (MAP 2000, 10). There was therefore clearly some potential for further buildings and associated surfaces to occur in the current works, which lay immediately to the south-west of the area investigated by Wenham and latterly by YAT.

The wider area of the current excavations is also known for the presence of Roman burials, most notably beneath the current railway station (RCHM1, 76) and at 35-41 Blossom Street, directly opposite the current site, where a 3rd-4th century cemetery and mausoleum complex was excavated by YAT in 1989-90 (Oakey 1992, 18-35; 1990, 10-17). Fragments of head pots found at 14-20 Blossom Street were interpreted as evidence for disturbed burials (Clarke 1991, 11), and several cremations in cinerary urns were discovered at the side of Road 10 in the 1950s (Wenham 1965, 531). Of equal interest was the evidence at 35-41 Blossom Street for extensive alterations of land-use in the area, with a period of extensive dumping identified between the main phases of burial (Oakey 1992, 57). Large amounts of dumping were also found at 14-20 Blossom Street and during Wenham's excavations, and interpreted as an accumulation of 'rubbish dumped at the roadside' (Wenham 1965, 531) and the development of agricultural soil during the Roman period (Clarke 1991, 27). At 35-41 Blossom Street there was also evidence for an early ditched enclosure with military characteristics (Oakey 1992, 15), after which the area seems to have been systematically cleared and undergone several dramatic alterations of use. The excavations at 28-40 Blossom Street had therefore significant potential to contribute to a broad range of issues concerning Roman activity in this area.

There is little evidence for Anglian or Anglo-Scandinavian activity in this area. The name 'Ploxwangate' or 'street of the ploughman' is recorded by 1241 and seems to have become 'Blossom Street' by the 17th century (Palliser 1972, 6). The gradual development of the street with houses from the 13th to the 19th centuries can be traced through maps of the area (Oakey 1992, 9) with the land behind them remaining largely agricultural. The 1961 OS map (detail included in figure 2) shows properties occupying the area of the excavation which were built in the mid 18th century, in particular 40 Blossom Street which was demolished in 1964 (RCHMY3, 65), prior to the construction of the office building currently subject to refurbishment.

5. RESULTS

5.1 PHASE 1: NATURAL DEPOSITS

Phase 1 consisted of natural glacial deposits, comprising a mixed, compact, off-white and dark orange clayey sand with occasional green mottles (1138) with an overlying patch of compact white clayey sand with dark green streaks (1141).

Natural deposits were identified across the deeper, north-western side of the trench at 13.22m AOD at the south-western end, sloping gently down to the north-east to around 13.06m AOD.

5.2 PHASE 2: LATE 1ST – MID 2ND CENTURY ACTIVITY

Overlying natural deposits was 1134, an accumulated friable clayey-sand soil that was identified in the more deeply excavated north-western half of the trench and was assumed to extend across the whole trench. The surface of 1134 sloped from around 13.35m AOD in the south-west to 13.10m AOD in the north-east, reflecting the sloping trend of the underlying natural sand. The pottery indicated a date no later than AD 100-120 with a possible start-point of AD 71-100, and environmental assessment of 1134 found charcoal derived from local mixed woodland sources, and a suggestion of turf-burning, with some traces of cess material.

Cut into soil 1134 were a north-south aligned 0.30m deep ditch, 1137, and the remains of a possible bank, 1135, which survived as a spread of friable, dark grey-orange, sandy clay up to 0.60m wide. 1135 was visible for around 4.6m running north from the south-western limit of excavation before petering out (figure 3, plate 1).

The ditch and bank were sealed by a spread 1131, a firm to friable, mid orange-grey silty clay sand that contained the remains of several shoes in the form of iron hobnails, along with a large amount of pottery and ceramic building material, dated to AD 120+. There were also a few fragments of human bone present, suggesting that the deposit had been sourced from areas where burials had been disturbed. 1131 was identified at 13.53-13.36m AOD, with a slight slope from south-west to north-east, and was up to 0.25m thick. It may well have formed part of a similar ground make-up exercise to 1134 beneath it (figure 15); this is discussed in more detail below in **6.2**.

Spread 1131 was cut by a ditch, 1140, up to 0.80m wide and 0.45m deep, aligned north-west – south-east and observed in plan only in the deeper, north-western side of the trench (plate 2). The ditch had a 'V' shaped profile with fairly steep sides and a flattened base at 12.90m

AOD, and was interpreted as a boundary feature. Its fill, 1139, contained Ebor and grey ware fragments. Cut into 1139 were a gully, 1132, and a cobbled surface, 1130, both of which followed the same line as the earlier ditch and seemed effectively to replace it (see **6.2**, figure 4). Gully 1132 was up to 0.50m wide and 0.25m deep, and observed in plan only in the deeper half of the trench (but like 1140 was recorded in section, figure 15). Running along the north-eastern edge of 1132, and at times lying within the cut, was the cobbled surface, 1130. This was up to 1.2m wide and was observed in plan across the entire width of the trench (plates 3 and 4). This was interpreted as a lane or small road, and was up to 0.40m thick, constructed with well compacted large cobbles laid on a bed of smaller stones (figure 15). 1130 also contained a fair quantity of CBM including tegula and imbrex fragments, as well as pottery of a generally AD 120+ date with some earlier, residual material, and a large group of Dressel 20 oil amphora sherds (appendix 1), interpreted as packing or perhaps patching material for the road surface. The gully, 1132, was in-filled with 1129, a compact green-grey slightly silty clay that sealed in the south-eastern edge of road surface 1130 where the latter had slipped into the gully cut. 1129 probably derived from material accrued during the life-time of the road, before it went out of use and was sealed beneath later ground make-up deposits of activity dating from phase 3 (see below).

The final activity identified in phase 2 consisted of two deposits either side of road 1130/gully 1132, both of which may contain useful evidence for contemporary activity in the area. To the north-east lay 1133, a 0.20m thick layer of soft, dark brown sandy silt that had accumulated over the edge of the road and sloped down to the north-east to 13.41m AOD. This contained pottery dated to AD 120+ and a fragment of pipe-clay that may have derived from the remains of a shrine (see **6.2** below). To the south-west of the road, 1127, a 0.20m thick layer of soft, brown-green clay silt at around 13.65m AOD, covered the remainder of the excavated area, producing mainly late 1st / early 2nd pottery and several objects of note, including a possible first - third century dupondius (SF 294, see appendix 6), a glass bangle (SF 253, plate 25) and a bone spoon handle (SF 254, plate 26). Both 1133 and 1127 were interpreted as ground make-up deposits, levelling across the site at around 13.65m AOD, with a slope to the north-east to around 13.40m AOD. The road 1130 may have remained in use during the development of these deposits. This is discussed in more detail below in **6.2**.

5.3 PHASE 3: MID 2ND TO EARLY 3RD CENTURY ACTIVITY

The most north-easterly feature in this phase was a 0.80m wide, 0.40m deep ditch, cut 1115, aligned south-east / north-west with a rounded terminal at the south-eastern end (figure 5, plate 5). The fill, 1110, produced a large quantity of mid 2nd century pottery and amphora sherds, and a fragment of 2nd century unguent bottle (SF 343). This ditch was cut 0.60m south-west of road 1130 and may represent a re-instatement of a boundary (figure 5). All the

other activity in this phase is located south-west of this ditch, reinforcing this suggestion. Three metres south-west of the ditch terminus, the truncated remains of a 1.10m x 0.70m pit, 1126, was sealed beneath a substantial spread of gravelly mid orange silty sandy clay, 1117. This extended across the entire south-eastern half of the trench (figure 15, plate 6) at around 13.80m AOD and produced mid 2nd century pottery, along with a substantial quantity of residual late 1st/early 2nd material. 1117 was interpreted as a make-up deposit, with the presence of a bone hair pin, a possible 2nd/3rd century seal box fragment (SF 224) and traces of glass working waste suggesting a mixed origin for the material including some nearby industrial activity. Industry was again suggested by spread 1116 (figure 15, plate 7), a 0.06m thick gravelly friable black-brown sandy silt which contained frequent charcoal fragments and some hammerscale, and was interpreted as a rake-out of hearth or furnace material across the flat area made-up with 1117.

1116 was cut by a possible isolated post-hole, 1120, a 0.40m deep rubbish pit, 1111, and a 0.20m deep south-east – north-west aligned gully, 1112, all of which produced late 2nd/early 3rd century pottery (figure 5). Of most interest, although not necessarily associated with any of the other cut features, was 1105, a large steep-sided 0.65m deep rectangular pit measuring at least 2.4m x 0.80m and extending beyond the southern corner of the trench (plate 8). This had two fills, 1104 and then 1103, which amongst an assemblage of late 2nd/early 3rd century pottery included a concentration of fine tablewares that may relate to funerary activity. This is discussed below in section 6.3.

5.4 PHASE 4: MID-LATE 3RD CENTURY LEVELLING

The earliest activity in phase 4 was a series of levelling deposits and dumps in the north-east end of the excavation area, which raised the general ground level by approximately 0.30m to around 13.60m AOD (figure 15). Of these, the earliest were 1128 and 1123, containing early-mid 3rd century pottery along with large amounts of residual 2nd century material. A few intrusive artefacts, including a probable medieval bone weaving tool, may be explained by the presence in this area of several large, deep medieval pits. These were cut from much higher up in phase 8, substantially disturbing the area. Additionally, the steel sheet shoring was driven through these later pit backfills, potentially bringing cultural material down with them.

Overlying these levelling spreads were dumps 1107 and 1124, both of which contained re-deposited 2nd century material, but which both gave latest pot dates from the mid-late 3rd century. These included Crambeck vessels post-dating AD 270, and Nene Valley funnel neck beaker fragments which might suggest disturbed burials. This possibility is reinforced by the presence of tazze fragments and is discussed further below in 6.4.

The deposits described above raised the area north-east of the road 1130 (figure 15). The next deposit, 1102, covered the entire north-eastern half of the excavation area, completely sealing the road surface and dumps 1107 and 1124, and stratigraphically sealing the possible industrial spreads discussed in phase 3 (figure 15, plate 9). 1102 contained large amounts of residual 2nd and early 3rd century material, including a 1st/2nd melon bead, but again yielded late 3rd-early 4th century Crambeck wares and also a mid-late 3rd century radiate copy coin (SF 174). As with the earlier make-up deposits, there were intrusive medieval artefacts in the area disturbed by later pit digging. 1102 was sealed by firmly 3rd century deposits, however, including 1101, a major ground make-up deposit covering most of the excavated area at around 13.90m AOD with a slope to the north-east at around 13.75m AOD (figure 6). 1101 produced further evidence for disturbed nearby funerary activity in the form of tazze fragments. Additionally, some of the glass fragments suggest a specialist local source for some of the material being deposited; conjoining sherds of glass bottle with sherds found in deposit 1073 (phase 6) are probably intrusive and represent the difficulty of differentiating similar deposits that overly one another over large parts of their extent as these did (figure 15). The clearly mixed nature of deposit 1101, including eroded animal bone and mixed domestic material, suggests the re-deposition of material from a variety of sources rather than primary dumping, and is discussed further in **6.4**.

In the south-west end of the trench, a similar series of dumps, 1099 and 1100, made up the ground level to around 13.90m AOD in an area where earlier deposits had settled into the large pit 1105 discussed above. The dumps produced 3rd century dates along with earlier material and contribute to the picture of the area being purposefully raised with mixed material from a range of sources.

5.5 PHASE 5: LATE 3RD CENTURY ACTIVITY

Activity in phase 5 was focussed in the south-western half of the excavation area. Two diffuse areas of compacted small cobbles in a gravelly silty sand, 1078 and 1096, were interpreted as the severely truncated remains of a possible yard surface (figure 7, plates 10 and 11). No obvious boundary was observed to the north-east, and the diffuse nature of the context boundary here suggests the surface may have extended further and been eroded away rather than being demarcated at this point. Both surfaces were up to 0.10m thick, creating a level area at around 14.05m AODm, and contained residual material no later in date than the early 3rd century.

The remains of surface 1078 were sealed to the south-west by a substantial dump containing mixed domestic material and early-mid 3rd century pottery, 1095 (figure 15), prior to the digging of two large rubbish pits, 1094 and 1093 (figure 8), the fills of which contained nails,

oyster shell fragments and mid-late 3rd century pottery. At around 13.95m AOD, this area was still lower than the yard surface to the north-east; a large, broadly linear dump of sandy silt with domestic material and mid-late 3rd century pottery, 1077, raised the ground level to around 14.10m AODm, save in the southern corner of the trench, where deposits continued to subside into the depression caused by pit 1105, where a further dump of gravelly sand, 1083, had been deposited to counteract the subsidence.

Two large post-holes in the southern corner of the trench, 1098 and 1082, were cut into the subsiding dumps and the yard surface (figure 9). Of these, 1098 had two distinct hollows in its base (plate 12), filled with under-fired bricks (1097) acting as a post-pad. Both post-holes were up to 0.70m across and between 0.40 and 0.60m deep, suggesting the presence of a fairly substantial structure. A further cluster of three postholes, 1090, 1091, 1092 were cut near the large postholes, the most southerly of which, 1092, cut through post hole 1097/1098. These were sub-oval, between 0.30 – 0.60m wide and up to 0.35m deep, and may represent additional or subsequent structures. Posthole 1080/1082 was sealed beneath successive dumps of sandy silt, 1079 and 1076, containing mid-late 3rd century pottery, which represent continuing efforts to maintain the subsiding area above the large pit 1105 at around 14.05-14.10m AOD.

5.6 PHASE 6: POSSIBLE 4TH CENTURY BUILDING

Three substantial deposits, 1067, 1060 and 1073, were created during this phase which resulted in a trench-wide raising of the ground level, leaving a surface sloping south-west to north-east from 14.22m to 13.82m AOD. The first of these, 1067, was a banked deposit of cobbles packed in sandy clay which sloped sharply down to the north-east (figure 15, plate 13) and may be the leading edge of a platform or ramp extending beyond the south-western limit of excavation. Overlying this deposit was 1060, a firm silty clay with cobbles that may have been intended to lessen the gradient of the slope created by 1067. Almost certainly equivalent to 1060 was 1073, which covered much of the rest of the trench with an extensive levelling deposit of sandy silt with frequent domestic refuse debris mixed with a more specialised glass assemblage suggesting a re-deposition of material from mixed sources (figures 10 and 15). Unfortunately, the relationship between 1060 and 1073 had been completely truncated by a later ditch cut; it seems likely, however, that they formed part of the same ground-raising operation (see 6.6 below). These deposits contained residual mid 3rd and earlier pottery and sherds of late 3rd – mid 4th century in date, including two Ebor ware facepot fragments, a mid-late 4th Crambeck face/neck jar fragment and tazze, all suggesting a nearby funerary source for some of this levelling material. There was also a quantity of medieval pottery that was considered to be intrusive, and which is discussed below in 6.6.

Cut into the area raised by 1073 were four substantial sub-square postholes, (figure 10, plate 14) 1061/1068, 1062/1066, 1063/1065 (plate 15) and 1081/1084, together with a dump of clay, 1064, that may be the heavily truncated remains of a fifth posthole. Cuts 1065 and 1066 were the most substantial, measuring 0.70 – 0.80m across and 0.35 – 0.40m deep and positioned three metres apart, forming a central axis for the group aligned north-west – south-east. Cut 1068 was located 0.60m south-west of 1066, and was heavily truncated by a later ditch. Cut 1084 was 1m north-east of 1065. All four contained packed cobbles up to 70mm across in stiff, clean pink clay forming post pads up to 0.40m thick, and were provisionally interpreted as the footings for a building that would cover an approximate area of 16 square metres within the excavated area. Pottery recovered from the backfills dated from the early 2nd to the mid 3rd centuries and must be assumed to be re-deposited material derived from the disturbance of lower deposits, particularly 1073 and 1101 (figure 15). No evidence for floors or foundation trenches was encountered, and it must be assumed that if they were once present they have been entirely truncated by later activity. The structure formed by these post-holes may have related to the higher level suggested by deposit 1067 beyond the south-western limit of excavation. This is discussed further below in section 6.6.

5.7 PHASE 7: 11TH CENTURY ACTIVITY

The first deposits in phase 7 were two substantial dumps of levelling material, 1059 and 1056. These covered the north-eastern end of the trench, bringing it up to around 14.20m – 14.05m AOD, sloping gently from south-west to north-east (figure 15). Some of phase 6 deposit 1060 may have remained exposed at the same level, although this impression is probably the result of later truncation. The heavy truncation of the phase 6 building suggests a site-wide clearance event prior to the phase 7 levelling. 1059 contained residual late 3rd-mid 4th pottery; 1056 was clearly 11th century in date, producing Gritty wares along with a large amount of residual Roman material including mid 4th-early 5th Huntcliff ware and fragments of head pots and ring stands, again suggesting the disturbance of a near-by cemetery. A large number of other residual Roman artefacts, including 2nd/3rd glass vessel fragments, 2nd, 3rd and 4th century hairpins and ferrous objects suggests a mixed origin for 1056; the presence of an antler burr supports the interpretation of this deposit as at least post-Roman (see appendix 3). At the south-western end of the trench, a mixed spread of cobbles and domestic rubbish with residual 3rd/4th century pottery, 1034, created a linear platform approximately 1m wide at around 14.35m AOD. The profile was probably altered by truncation, but this feature may be a boundary structure or represent disturbance of the underlying phase 6 cobbled surfaces.

The majority of the cut features in this phase cut through 1056 and are therefore medieval despite the relative lack of medieval artefacts recovered from their fills. Two sub-oval pits,

1048/1052 and 1047/1051 up to 1.2m wide and between 0.15-0.40m deep (figure 11), produced pottery from the 3rd to the 9th/10th centuries, along Roman hairpins and hobnails and are interpreted as rubbish pits, although pit 1048/1052 also contained a quantity of packed cobbles and may be a posthole; there is, however, nothing of similar magnitude to associate with it. At the south-western end of the trench, a pit, 1057/1058 and a shallow gully 1054/1055 were cut into phase 6 deposits and produced residual 3rd century pottery along with possible post Roman material. These features were fairly ephemeral and their interpretation is limited by severe truncation.

The final phase 7 activity was a series of 4 small pits or possible postholes arranged in a group, with the western-most cut into pit 1048/1052 (figure 11, plate 16). During the excavation, these were thought to be truncated Roman cremation burials, as their fills (1029-1033 inclusive) were charcoal-rich and contained flecks of burnt bone. Fill 1032 also yielded part of a 4th century jet bracelet (SF 6), which informed a total sampling strategy of the fills for sieving. However, insufficient bone was recovered to confirm the initial interpretation, and later analysis has demonstrated that these pits are cut into medieval levelling deposits. They are now interpreted as a possible fence line, and are discussed further in 6.7 below.

5.8 PHASE 8: 11TH - 13TH CENTURY ACTIVITY

Two dumps of soil with cobbles and residual late Roman material, 1050 and 1040, were deposited over the bank of disturbed cobbles 1034. Cut features in this phase were differentiated from phase 7 activity on the grounds of scale as well as pottery date. There were four large pits and two substantial ditches, all representing much more extensive activity than that seen earlier (figure 12).

In the northern corner of the trench, a series of intercut pits created a significant disturbance of deposits throughout the rest of stratigraphic sequence in that area. Pit 1109/1118 was sub-square, measured 1.5m across and was cut 1.2m deep from around 14.00m AOD, with a flat base that cut into natural sand (plate 17). A smaller pit, 1113/1114 was into 1109, and cut into both of these was 1049/1053, a large oval pit at least 2m across which extended beyond the limit of excavation. These three pits produced 11th/12th, 12th and 13th century pottery respectively, with cut 1053 so disturbing the earlier pits that they were not clearly defined until the excavation reached phase 4 deposits at around 13.50m AOD, some 0.50m further down. This part of the trench was very difficult to define throughout the excavation, due to the degree of intercutting and massive re-deposition of earlier deposits and artefacts; consequently, the correct stratigraphic position of these pits was not understood until the initial assessment of the pottery and stratigraphy had taken place. They are now interpreted as rubbish pits and are discussed further in 6.7.

In the centre of the trench, two large ditches and a further pit were cut into phase 7 deposits. Ditch 1035/1045 was 1m wide and up to 0.40m deep, aligned south-east – north-west across the width of the trench, with an irregular base that sloped down to the north-west from around 14.08m to 13.80m AOD (plate 18). The fill, 1035, produced mid 4th-early 5th century pottery with residual 3rd; this is certainly all re-deposited, however, as the underlying deposit was clearly 11th century in date. Parallel to this ditch and 1m to the north-east of it was a second ditch, 1037/1046, which had a rounded terminal and contained re-deposited Roman material. This ditch was 1m wide and up to 0.45m deep, with the base sloping to the south-east at around 13.80, AOD, in the opposite direction to ditch 1035/1045 (plate 19). Just to the north-west of its terminal was a 1.5m x 1m sub oval pit, 1036/1041, which was 0.35m deep and produced 11th-12th century gritty and splashed wares, along with re-deposited 3rd century pottery and material indicative of rubbish disposal. The overall impression was of an agricultural landscape, with drainage and other 'back-land' activity; this is discussed further in 6.7.

5.9 PHASE 9: MEDIEVAL PLOUGHING

This phase commences with the first hand-dug deposit following machine clearance, 1028, which was effectively a cleaning spit equated with the extensive overlying plough-soils referred to in section 2. As the next deposit, 1025, was up to 0.45m thick across the entire excavation area, the stratigraphic integrity of the finds from 1028 is secure within the same phase. 1028 provided material of late 12th/early 13th century date, along with re-deposited late 3rd – mid 4th century pottery and a single sherd of 19th century earthenware which can be regarded as probably intrusive. 1028 could be considered as an interface between the later ploughing and earlier medieval activity; this is discussed further in 6.7.

Two extensive plough-soils, 1025 and then 1024, complete this phase, forming an agricultural soil up to 1m thick across the whole trench (figures 13 and 15, plate 20). Along with a significant quantity of disturbed Roman material from the underlying sequence, these deposits produced 18th and 19th century pottery respectively and would seem to define a clear agricultural horizon for this area. It is probable that 1025 represents medieval ploughing as its 18th century spot-date is based on a single sherd of Blackware; this is almost certainly intrusive given that both 1025 and 1024 were excavated entirely by machine under archaeological supervision. 1024 was lighter brown and sandier than 1025, which in turn contained more disturbed Roman material than the post-medieval soil overlying it, the upper surface of which was identified at 15.00m AOD.

5.10 PHASE 10: EARLY MODERN ACTIVITY

Cut into 1024 was a curvilinear uncapped brick-lined culvert, 1021/1022, which was 0.60m wide, 0.20m deep and aligned roughly east-west (figure 13, plate 21). The bricks were hand-made and of early-mid 19th century date, and the fill, 1020, contained 19th century material. The culvert was sealed by 1019, a 0.60m thick ground make-up deposit containing frequent amounts of 19th century brick rubble, that raised the ground level to around 15.60m AOD.

Cut into 1019 was a sequence of mid –late 19th century brick-built walls and sewers with salt-glazed ceramic pipes which formed the back yard structures of buildings formerly sited on Blossom Street (figure 14, plate 22) and are discussed further in **6.8**. In accordance with the specification, the structures and deposits identified as 19th and 20th century in date were rapidly recorded and removed by mechanical excavator under archaeological supervision.

5.11 PHASE 11: MODERN ACTIVITY

This phase constitutes the c. 0.35m make-up deposit and surface of the modern car-park, which was finished with a marked slope from south-east to north-west as described above in section 3. In the western corner of the trench, a large test pit, 1026/1027, had been cut through the surface of the car-park at 15.71m AOD, penetrating through the entire stratigraphic sequence of deposits into natural sand at 12.79m AOD (plate 23). The change of slope from vertical to tapering around 2m BGL indicated this pit was machine-dug, probably as a geo-technical test-pit rather than an archaeological one, as no record of it was found in any of the recent work submitted to the HER.

This phase includes context 1000, which contains all the unstratified material from the excavation.

6. INTERPRETATION

6.1 PHASE 1: NATURAL DEPOSITS

The gradual slope down to the north broadly matches natural profiles observed locally. At 13.22 – 13.06m AOD, this was slightly higher than the maximum 12.77m located by borehole at 14-20 Blossom Street but can be seen as part of the downward sloping trend from south to north across the area, as reflected by the 1991 borehole survey (Clarke, 8). This slope represents the northern edge of the York terminal glacial moraine, which may explain the contrast between the compact clay and silty-clays of the 1991 survey, the ‘brown glacial clay’ encountered during the 1950s (Wenham, 527) and the mixed sands encountered at 28-40 Blossom Street. Mixed soil profiles are typical of moraine deposits (Monkhouse 1971, 241), and so the area of 28-40 Blossom Street may overlie a pocket of natural sand in-filling a depression in the clayey deposits below; similar pockets of sand with mixed cobbles and gravel were observed overlying glacial clay further south at Driffield Terrace, on the main bulk of the moraine itself (Hunter-Mann 2005, 9). The marked degree of ground-raising activity described above and interpreted below may therefore be seen in the context of a levelling-out process in an undulating landscape, either deliberately or as a by-product of other activity.

6.2 PHASE 2: LATE 1ST – MID 2ND CENTURY ACTIVITY

The presence of early ditch-and-bank features in this area bears interesting comparison with the 1989/90 YAT excavation at 35-41 Blossom Street. There, as in the current excavation, the earliest activity comprised a series of ditches cut into a soil of late 1st/early 2nd century date (Oakey 1992, 12). At 35-41 Blossom Street, these ditches were interpreted as a possible field system, while some had the ‘military’ ankle-breaker profile; importantly, they appeared to represent several phases of activity (ibid, 13). The 28-40 Blossom Street ditches were separated by a layer of early 2nd century mixed, re-deposited soil and were on very different alignments, indicating a change or at least a re-organisation of land-use during the same period. The purpose of ditches 1137 and 1140 are difficult to interpret given the small scale of the current excavation, but the confirmation of early Roman earthworks either side of the modern Blossom Street may potentially contribute to a new understanding of the area.

The narrow road 1130, perhaps better thought of as a lane, was aligned approximately at right angles to the presumed course of the main *Eboracum* – *Calcaria* road, running away from it to the south-east. This superseded the ditch system during the early – mid 2nd century and may represent a development of a former boundary as a route-way. The evidence of later phases suggests that the surface of the lane was exposed during mid 2nd – early 3rd century activities to the south-west assigned to phase 3, remaining usable for approximately

150 years until it was sealed beneath thick levelling deposits in phase 4, during the late 3rd century. This would imply a significant feature in the landscape, potentially demarcating activity either side of it for a considerable length of time. As before, this has the potential to contextualise land-use identified elsewhere; only a more thorough examination of land-use in the Blossom Street area could take this interpretation any further.

To either side of the lane, deposits 1133 and 1127 seem to have created roughly level areas of open ground. Both deposits contained mid 2nd century material and were very mixed, probably deriving from re-deposited refuse cleared from elsewhere. The finds assemblage suggested material primarily of military character (see appendix 3) with notable exceptions such as the Kilbride-Jones Type 3a glass bangle (plate 25). Similarly dated deposits of re-deposited refuse were noted at 35-41 Blossom Street, filling and sealing the earlier ditches prior to a major change of land-use as a cemetery (Oakey 1992, 16). Contemporary development within the fortress has been cited as the source of material for this activity (Oakey, 1992, 15-16); with the additional data from the current excavation, it would appear that major alterations in ground level were undertaken on a very large scale across a wide area, suggesting major changes in land-use during the mid-late 2nd century. A context for this activity might be provided by the development of the *canabae* adjacent to the fortress from the mid-late 2nd century (Mark Whyman pers. com.), which is thought to have triggered the decline of an early civilian settlement at Dringhouses (Hunter-Mann 1996, 16). The general impression is of a concentration of settlement around the fortress and a concomitant re-organisation of landscape surrounding it, further supported by the recent suggestion that the main stone defences of the fortress itself may date from the early-mid 2nd century (Hunter-Mann 2009, 4), providing a further potential source of significant amounts of re-deposited material as the populace took advantage of conveniently sloping ground beyond the main settlement either side of the main road.

6.3 PHASE 3: MID 2ND TO EARLY 3RD CENTURY ACTIVITY

The interpretation of lane 1130 as a route between demarcated areas of activity is supported by the later development of the area south-west of it. Ditch 1115, 0.60m south-west of the lane, may represent one side of an entrance to an enclosure, although with no features other than a single truncated pit, 1126, to support this interpretation it is difficult to take much further. It could alternatively be a later drain associated with road 1130. The ditch fill, 1110, contained only mid 2nd century pottery, suggesting that it may have gone out of use by the time the ground south-west of it was built up with deposits 1117 and 1116, rather than demarcating activity associated with these later ground make-up deposits. This is perhaps supported by the mid 2nd century pottery from 1125, the fill of pit 1126, which was completely sealed beneath 1117. In that case, lane 1130 would provide the most obvious demarcation.

The exact nature of the activity represented by 1117 and 1116 is unknown, but on the basis of the character and the environmental samples of 1116 some industrial activity is suspected, albeit in the vicinity rather than *in situ*. 1116 contained large quantities of charcoal and ash, with mixed charred plant remains and traces of CBM and hammerscale, along with residual late 1st-early 2nd century pottery, suggesting a mixed, re-deposited character. Traces of industrial activity in the Blossom Street area have been encountered in previous excavations, but not in a primary context. Cobbled surfaces and robbed foundation trenches at 14-20 Blossom Street were identified as a possible 2nd century roadside structure, backfilled with material derived from hearths and industrial workings nearby (Clarke 1991, 10 and 27). This activity occurred on the other side of the boundary suggested by land 1130, but importantly a very similar pattern of land use was identified at 35-41 Blossom Street, with a concentration of rubbish pits containing industrial material of late 2nd-early 3rd century date were cut into extensive levelling deposits of re-deposited material (Oakey 1992, 16-17). It is not possible to refine the land-use in this area any further at this stage on the basis of the 28-40 Blossom Street sequence, but it is clear that there is a growing body of data supporting a model of major landscaping from the mid-late 2nd century, with probable localised industrial activity strongly suggested.

The later cut features included in phase 3 do not necessarily relate to one another, but all produced late 2nd-early 3rd century pottery. The rubbish pit, isolated post-hole and gully do not form a coherent group within such a relatively small area but yielded similar assemblages. However, the large rectangular pit 1105 was very different in character from the other features. The pottery from its fills, 1103 and 1104, has a similar date-range, but the range of fine tablewares, including near-complete Samian vessels with evidence of scorching, suggests funerary rather than industrial activity or simple rubbish disposal (see appendix 1). Near-complete vessels suggest primary deposition, and it may be that pit 1105 relates to a funerary landscape, placing the excavation area at 28-40 Blossom Street on the margin of the early 3rd century cemetery identified at 35-41 Blossom Street (Oakey 1992, 18). This represents another major change in land-use, but is included in phase 3 on the basis of the whole stratigraphic sequence from 28-40 Blossom Street rather than on data derived from earlier excavations; further work may refine the phasing of 28-40 Blossom Street in line with this additional information.

6.4 PHASE 4: MID-LATE 3RD CENTURY LEVELLING

As is clear from the description in 5.4, this phase constitutes a significant raising and levelling of the entire excavation area from the mid 3rd century, sealing lane 1130 and the activity potentially demarcated by it. Much of the material used to achieve this contained re-deposited material with funerary connotations, including fragments of face pots and tazze,

and in the south-west end of the trench the levelling was clearly an attempt to counteract the subsiding of deposits into the possible funerary pit 1105, demonstrating that in this area at least, any possible funerary activity had ceased. The 3rd century cemetery excavated at 35-41 Blossom Street included a mausoleum that appears to have been re-built at least once during the mid 3rd century (Oakey 1992, 18 – 22), and it may be that during this process the surrounding area was re-organised, producing the levelling material and re-deposition of funerary artefacts seen at 28-40 Blossom Street. Without further work, however, this can only remain speculative.

A similar picture emerges from the 14-20 Blossom Street excavations, which located a Roman building first identified by LP Wenham, and encountered significant amounts of re-deposited face pot fragments and other funerary artefacts in deposits dating from the mid 2nd to 3rd centuries (Clarke 1991, 27). However, the presence of a small north-south road, associated with a further building and dated to the late 3rd/early 4th century (Ibid, 13 & 27), may provide another context for spatial re-organisation and landscaping for the phase 4 deposits at 28-40 Blossom Street, as lane 1130 went out of use at this point. It may be that the 28-40 ground-raising is associated with roadside activity identified at 14-20 rather than (or perhaps as part of) activity encountered at 35-41. There is, therefore, a clear change in land-use across the Blossom Street area at this point involving landscaping with material acquired from a range of unknown sources that only further analytical work would help to understand further (see 7 below).

6.5 PHASE 5: LATE 3RD CENTURY ACTIVITY

The features described above in 5.5 are phased separately to the ground make-up deposits of phase 4 because it is not possible to prove that this levelling/raising activity was intended to facilitate specific later activities, even if on the basis of the pottery one could make a good argument for combining the two (see R. Leary's comments in appendix 1). In similar vein to cut features identified in phase 3, many of the diffuse pits and postholes of this phase do not necessarily relate to each other and within a relatively small area are difficult to interpret meaningfully.

The presence of mid-late 3rd century possible yard surfaces leads to the likelihood of nearby buildings of that date, evidence for which has been found elsewhere in the Blossom Street area, as discussed above. The surfaces encountered at 28-40 were very truncated, however, and all subsequent activity seems to post-date further dumping activity and levelling episodes over the subsiding fills of pit 1105, which, together with the digging of large rubbish pits 1093 and 1094, seem to suggest that the surface 1078 was no longer active by the time the two groups of intercutting post-holes were dug. The levelling deposit 1077 does create a

level platform through which these post-holes were cut; however, although it contained a moderate amount of cobbles, it is not considered to constitute a surface. If one existed, it must have been truncated away by later activity.

Two groups of postholes were identified. The first, cuts 1082 and 1098, are grouped on the basis of similar size and shape, and form a north-south alignment that could represent one side of a building. It must be stated, however, that no other evidence was found for a building and that this suggestion must therefore remain speculative. Cut into the fill of 1098 was 1092, part of the second group of postholes (cuts 1090-92) which form a cluster slightly west of the possible building line. The purpose of these is unknown but they may represent an alteration or replacement for an earlier structure; in any case they appear to have been short-lived, as their backfills are sealed by further dumping deposits of the same phase. As with the earlier yard surface, it is notable that structural evidence of this period has been found elsewhere, but little further interpretation of the 28-40 Blossom Street examples is possible at this stage.

6.6 PHASE 6: POSSIBLE 4TH CENTURY BUILDING

The phase 6 levelling deposits described above in 5.6 seem to be mid-late 4th century in date, with amounts of residual 3rd and 4th century material including funerary artefacts. This highlights a clear hiatus of *in situ* deposits in the site sequence of almost 100 years from the late 3rd to mid 4th centuries that does not seem adequately dismissed as inactivity given the intensity of activity in earlier phases and in the wider area as encountered in earlier excavations. There is evidence from the wider area for extensive ground-raising and spatial re-organisation in the mid 3rd-mid 4th century, particularly at 35-41 Blossom Street, where the 3rd century cemetery was sealed beneath early 4th century spreads of rubbish, before once again becoming a cemetery (Oakey 1992, 25-6). It may be that levelling deposits 1073 and 1060 relate to associated landscaping activity in the area of the later cemetery during the 4th century, possibly providing the source for the AD 370+ Crambeck ware face/neck jug fragments in 1073, but this doesn't explain the lack of earlier deposits at 28-40 Blossom Street.

The presence of a possible late 4th century building at 28-40 Blossom Street raises the possibility that the apparent lack of early-mid 4th century activity identified during this excavation is actually the result of truncation by clearance in advance of the building's construction. This building is in itself of considerable interest as no known structures of this date have been located nearby. The probable alignment of the building respects the likely alignment of Road 10, and the edge of a presumably large cobbled area represented by 1067 may be the edge of a road connecting to the main thoroughfare. The absence of a ditch

does limit this suggestion, however, which leaves the interpretation of a yard area more likely. More intriguing is the possibility of a relationship with the 4th century cemetery at 35-41 Blossom Street, as the structure occupies a position between this cemetery and the suggested position of Road 10. However, the major truncation of the phase 6 deposits by medieval activity has unfortunately destroyed much of the potential evidence for this interpretation, which must therefore remain speculative. The presence of a hitherto unknown building by the main road near what was the entrance to the *colonia* does however raise interesting questions about land-use in the Blossom Street area that could inform wider analysis and research, even if no relationship with the phases described at 35-41 Blossom Street can be demonstrated.

The presence of 7 sherds of 9th-11th century pottery in phase 6 deposit 1073 challenges the above interpretation. On the basis of the stratigraphy it is felt that these may be intrusive, deriving from the fills of phase 7 features cutting through 1073 (and significantly deeper in some cases; see figure 15), and from phase 7 deposit 1056, which substantially overlay 1073 and was very difficult to differentiate from it at the north-eastern end of the trench where a sequence of large intercutting phase 8 pits had substantially disturbed earlier deposits, rendering feature definition very challenging. The problem of the driven sheet shoring, referred to above, may also be a factor. An alternative suggestion is that 1073, and the building cut into it, are actually medieval, dating from the 11th/12th centuries, and that the lack of similar sherds from the rest of phase 6 is due to the cut features supporting a building rather than being left open to accumulate silt and debris, followed by a severe truncation in phase 7. However, the phase 7 and 8 activity (see below) would suggest a relatively short life-span for such a large structure and imply two major clearance events within 100 years of each other. Whilst this is eminently possible, on the balance of rest of the archive, the late Roman interpretation offered above is felt to most accurately reflect the nature of the whole sequence at this point of the assessment, particularly as levelling deposit 1060 and possible surface 1067 would appear to be securely Roman, whilst acknowledging their relatively small pottery assemblage. Closer analysis of the phase 6 and 7 assemblage and sequence may resolve this issue; this is addressed in section 7 below.

6.7 PHASES 7-9: 11TH – 13TH CENTURY ACTIVITY AND MEDIEVAL PLOUGHING

The marked break between 4th and 11th century activity at 28-40 Blossom Street, whether in phase 6, or in phase 7 as preferred in this assessment, mirrors an identical hiatus observed at both 14-20 Blossom Street (Clarke 1991, 29) and 35-41 Blossom Street (Oakey 1992, 61). Two explanations have already been suggested: that medieval clearance has removed post-Roman and early-Medieval deposits (Clarke 1991, 29) or simply that little or no activity took place until the 11th century, with what little that may have occurred being completely

truncated by later ploughing (Oakey 1992, 61). The current excavation provides little by way of clarification, except that the degree of truncation suffered by the phase 6 structures suggests that wholesale clearance took place. It must be noted, however, that very little amounts of 5th-10th century pottery were recovered, potentially suggesting a lack of activity during that time; it may be, of course, that the relevant material was re-deposited elsewhere beyond the limits of any excavation undertaken thus far in the Blossom Street area.

A context for the development of the agricultural activity suggested by the phase 7 and 8 features may be the Norman capture of York from Anglo-Scandinavian control in the late 11th century, and subsequent re-organisation of the city. It has been noted elsewhere that the street-name 'Ploxwaingate' is established by the 13th century (Palliser 1972, 6; Clarke 1991, 30), and that a significant amount of horticultural soil has been encountered in all three modern Blossom Street excavations (Clarke 1991, 30; Oakey 1992, 61). The phase 7 and 8 features appeared to have been truncated by ploughing in phase 9, the earliest element of which was 13th century in date. The excavation of the medieval and post-medieval plough soils by machine will have reduced the potential for finds recovery, but it is notable that relatively little medieval material was recovered in comparison with residual Roman pottery; it may be, therefore, that activity in the 11th and 12th centuries was fairly limited, even if it was not completely absent. The cobble dump 1034, along with later ditches 1045 and 1046 may represent 11th – 12th century property or land boundaries running away from the line of the former Roman road, enclosing 'back-land' areas for rubbish-disposal and other activities. However, no coherent divisions of later medieval date such as those identified at 35-41 Blossom Street (Oakey 1992, 62) were found, and it is not possible to take this interpretation further during this assessment.

The depth of agricultural soil encountered at 28-40 Blossom Street indicates a long and intense period of agricultural activity which is entirely consistent with current interpretations of the area. 1028, removed as the first hand-dug deposit, may represent an interface between the 12th century and the later ploughing; as suggested above, 1025 is probably medieval with the overlying 1024 a continuation of ploughing and farming into the post-medieval period.

6.8 PHASES 10-11: EARLY MODERN AND MODERN ACTIVITY

The culvert and substantial make-up deposit 1019 represent the first major change in land-use since the early medieval period, and represent the development of the probable medieval street-front in the eighteenth and nineteenth centuries. As stated above, no firm evidence for boundaries earlier than the 19th century were identified at 28-40, so it is not possible to trace the development of modern land divisions from the medieval period. It must

be assumed, therefore, that the excavation area encountered open ground behind the street front, or was enclosed within a large plot with boundaries beyond all limits of excavation.

The re-development of this part of Blossom Street occurred from the mid eighteenth century onwards (RCHMY3, 64-65). Wall 1005 is probably the boundary between numbers 40 (built in 1747) and 38 (built in 1822 in the plot of number 36, which is itself contemporary with 40), and the latrine structures and drains are 19th century additions to 40 that appear on the 1960s OS map (see figure 2). Both properties were demolished in 1964-65 (Ibid) and the current office building to the south-east of the excavation was built shortly thereafter.

No date can be ascribed to the car-park surface but it can be safely assumed that this has been re-surfaced during the last 40 years, as is evidenced by the truncation of the 19th century wall foundations and drains, and the amount of modern material found in the make-up deposits beneath the tarmac.

7. DISCUSSION AND PROPOSED RESEARCH AGENDA

The excavation at 28-40 Blossom Street has revealed four broad episodes of Roman land-use, with major landscaping implied as one gave way to another. The early ditches and lane, the mid 2nd/early 3rd levelling and possible industrial and funerary activities, the major mid-late 3rd century levelling and possible structures, and the possible mid-late 4th century clearance and building demonstrate the potential of the site archive to illuminate a good range of Roman activity throughout the period of their presence in Britain.

As suggested by RS Leary and HEM Cool, further analysis, and publication, of the artefactual evidence from 28-40 Blossom Street would be of value (see appendices 1 and 3 for full recommendations). In particular, the large amount of Samian ware recovered, which was not included in this assessment, needs specialist analysis, to refine the context dating and in particular to refine the interpretation of the few primary contexts identified, especially in phases 2 and 3. This has the potential to define the extent and location of the funerary and industrial activity suggested by this assessment. For the same reasons, the course pottery should be subjected to more rigorous analysis; in particular, this may allow the date of the phase 6 clearance and building to be firmly defined. Additionally, although much of the pottery derives from re-deposited material, the source and nature of this material is of significance as it has been encountered across the Blossom Street area in several excavations. The mid-late 2nd century levelling seen at 28-40 Blossom Street reflects a similar phenomenon seen in the river-side activity recorded during the Wellington Row excavations (Mark Whyman pers. com.), and would seem therefore to represent a major event in the life of the early Roman city and in particular the rapid development of the settlement south-west of the Ouse, from the late 2nd/early 3rd century (Ottaway 2003, 147). Similarly, the removal of the 3rd century cemetery and mausoleum seen at 35-41 Blossom Street and potentially reflected in the mid-late 3rd century deposits at 28-40 and 14-20 Blossom Street reflects major changes of land-use around the time of the establishment of the civilian settlement (Ottaway, 2003, 147). The relatively small amount of material derived from primary contexts, in particular the fine tablewares associated with funerary activity from phase 3 pit 1103/1105, and material retrieved from the earlier ditch fills, along with some of the phase 2 small finds such as the bangle (SF 253) and possible shrine fragment (SF 373) require further analysis to improve understanding of the *in-situ* activity encountered during the current excavation.

The potential of the 28-40 Blossom Street data to define activity is of significance to the better understanding of the area. A significant element conspicuous by its apparent absence at 28-40 Blossom Street was any physical evidence of the *Eboracum* – *Calcaria* road or any

clearly associated structures. LP Wenham recorded its survival immediately north-east of the current excavation during the 1950s, but although earlier excavations by YAT at 14-20 Blossom Street found further evidence for metalled surfaces in the area excavated by Wenham, they could not be securely identified as the *Calcaria* road, suggesting instead a narrow lane aligned north-south (Clarke 1991, 13). The current excavation at 28-40 was located immediately south-east of the projected line of the road (figure 2), which perhaps explains the lack of evidence for metalled surfaces, but no clearly associated structures were identified. Ditch 1137 in phase 2 is unlikely to be the edge of the main roadside ditch as it was in-filled and sealed by early 2nd century, although it has been suggested that while the main roads around York were laid out as routes soon after AD 71, they were not substantially metalled or established as structures until the mid-late 2nd century (Ottaway, 2003, 146), and although the road identified by Wenham was metalled, it had no kerbing or, initially, any drainage ditches (Wenham, 527). 1137 could possibly therefore relate to an early route-way, but this interpretation must remain tenuous at best. The lack of definitive evidence of road surfaces or structures in any of the later phases, as described above, is important, as it calls into some doubt the current projected road line, and in particular questions the location and interpretation of remains published by Wenham in 1965.

It may be that the 28-40 Blossom Street excavation has simply defined a small area where the road was definitely not positioned. The structural traces encountered by MAP, OSA and YAT in the area are all more ephemeral than those presented by Wenham. Given this disparity, and the apparent potential of the 28-40 site to correlate patterns of land-use, seen in earlier excavations, including funerary and industrial activity, it is clear that a combined analysis of all the area's excavation archives over 60 years of archaeological work is now necessary to better understand land-use throughout the Roman period in the immediate vicinity of the main route to the fortress and *colonia* from the south, and may assist in directing future work aimed at locating this road and defining activity associated with it.

Such a combined analytical study as the one suggested here could also contribute to understanding the later development of the city. Although all of the modern excavations in Blossom Street suggest the near-total truncation of 5th to late 11th century deposits, it may be that careful analysis can refine this impression and provide much-needed additional information on the Anglo-Scandinavian and early medieval period in York, archaeological evidence for which is mainly confined to a few well-studied areas nearer the city centre. Additionally, any further definition of the impact of the 11th century Norman arrival and of land-use in the century thereafter would greatly enhance our knowledge of an area not well-mapped or documented until the later medieval period.

It is therefore recommended that the analysis phase of this project should include the Samian ware and further work on the course pottery, which should then inform a re-analysis of the stratigraphic sequence to attempt to resolve the issues discussed above. Individual artefact groups identified by specialists should be researched and published. Following this, a proposal should be made on the basis of the analysis report for 28-40 Blossom Street to research and publish a project aimed at understanding land-use in the wider area, with particular attention to the Roman period, using the wealth of excavated data collected by YAT and others since the 1950s.

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Research and author	Ian Milsted
Illustrations	Ian Milsted
Editor	Martin Stockwell
Site staff	Ian Milsted (Field Officer) Louisa O'Shaughnessy Sarah Whittaker Jim Williams Andrew Winterburn

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10. FIGURES AND PLATES

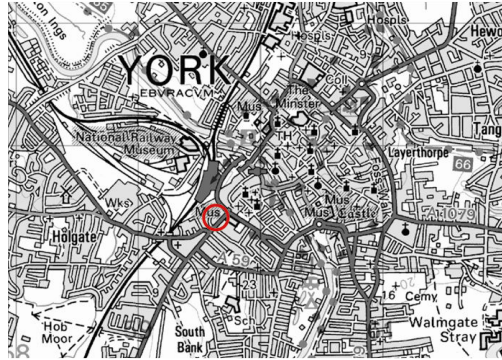


Figure 1 Location of site

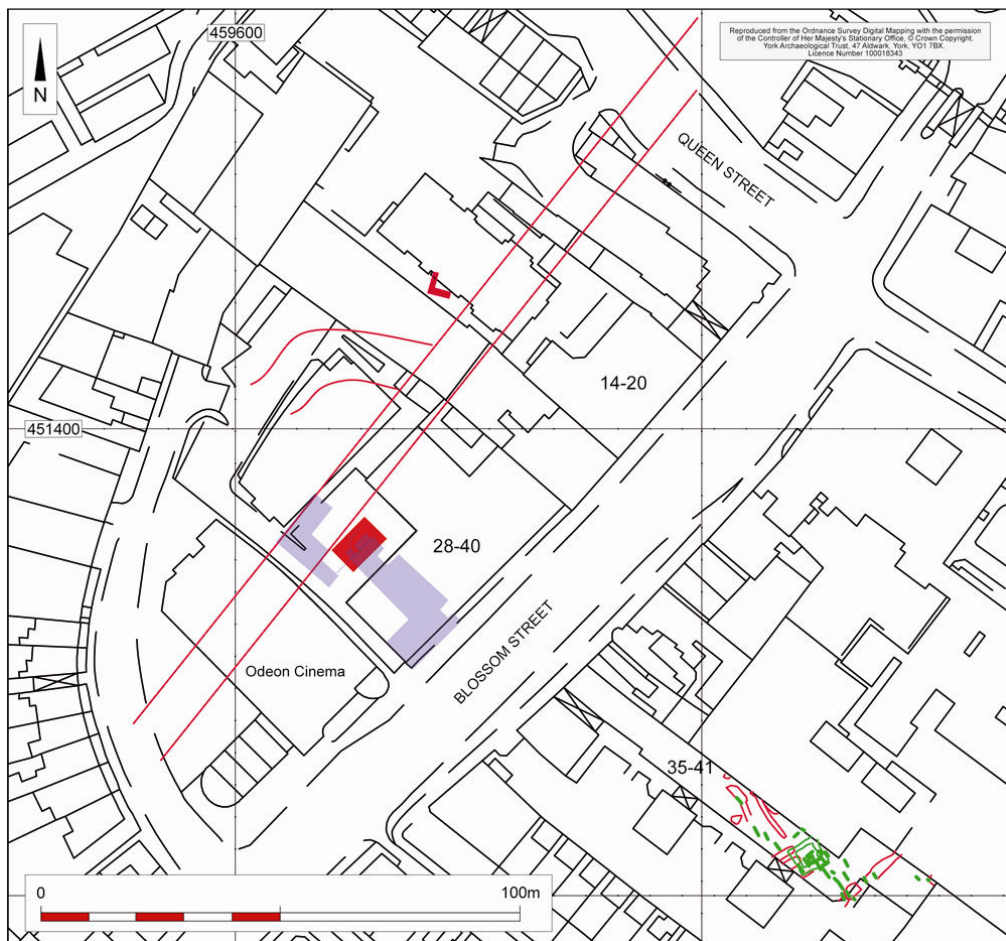


Figure 2 Location of trench (in red)

Showing projected Roman road and building (Wenham, in red),
Roman cemetery at 35-41 (YAT, ditches in red, graves in green)
and outline of Nineteenth Century buildings (RCHM, in purple)

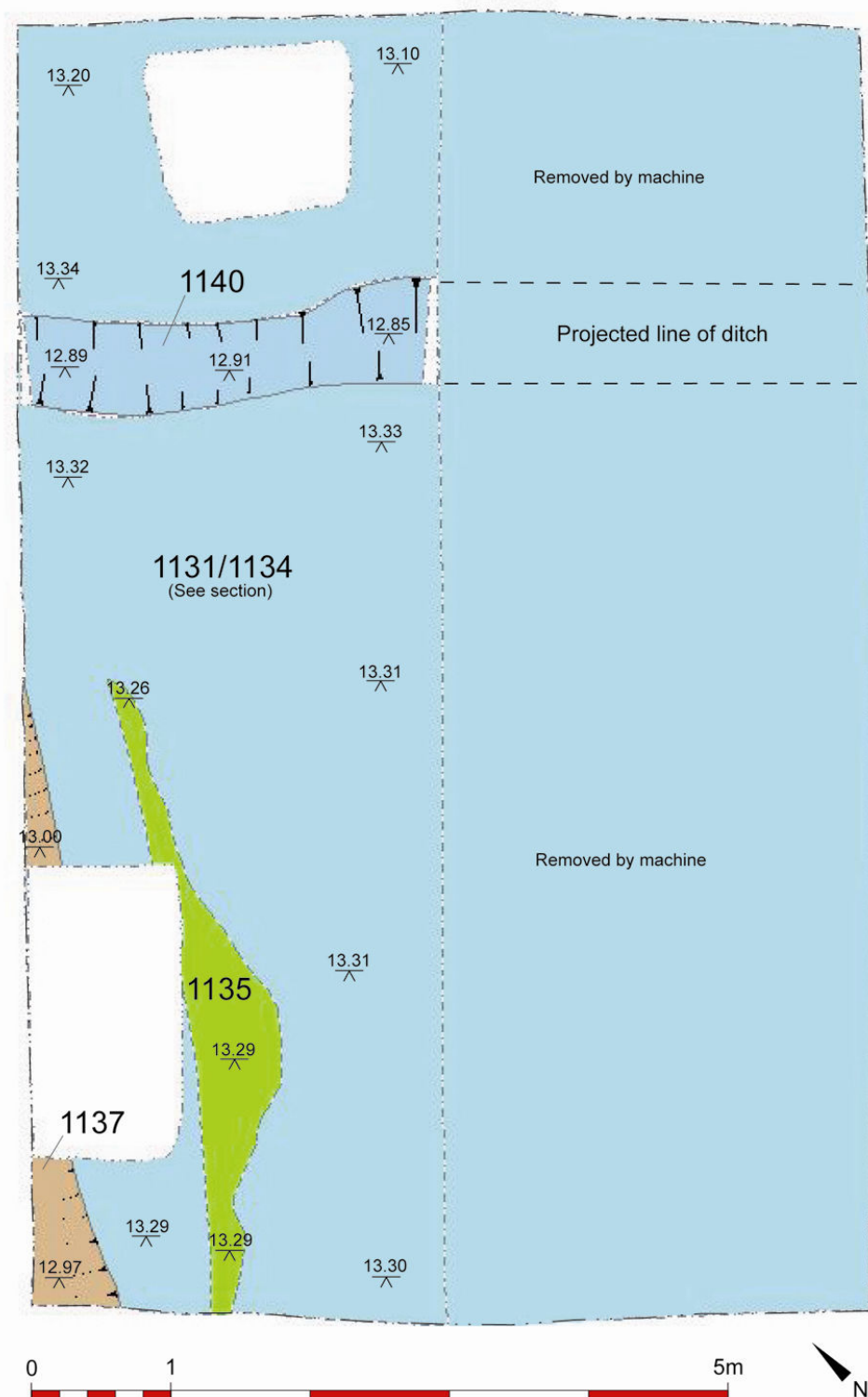


Figure 3 Phase 2 early features

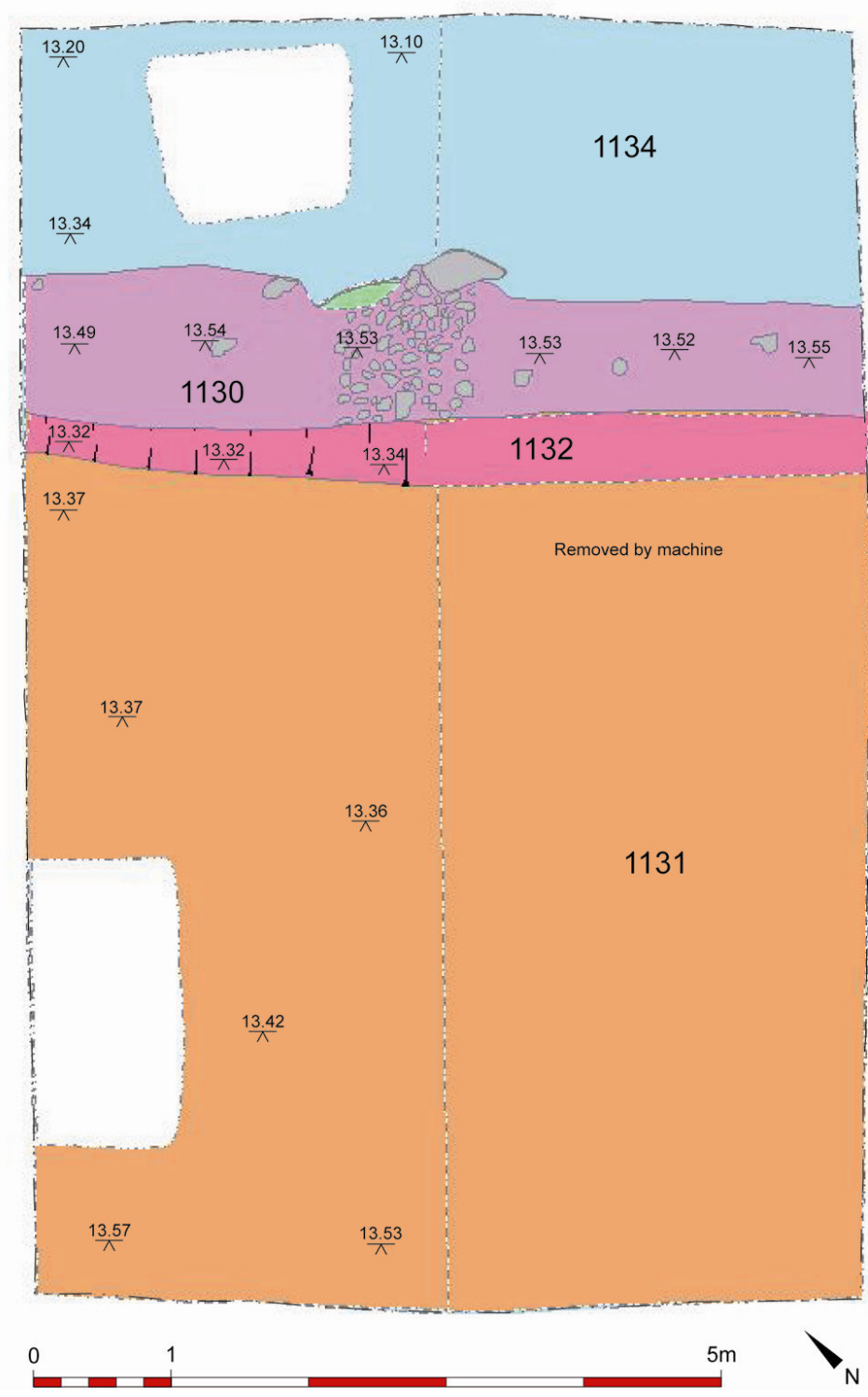


Figure 4 Phase 2 later features

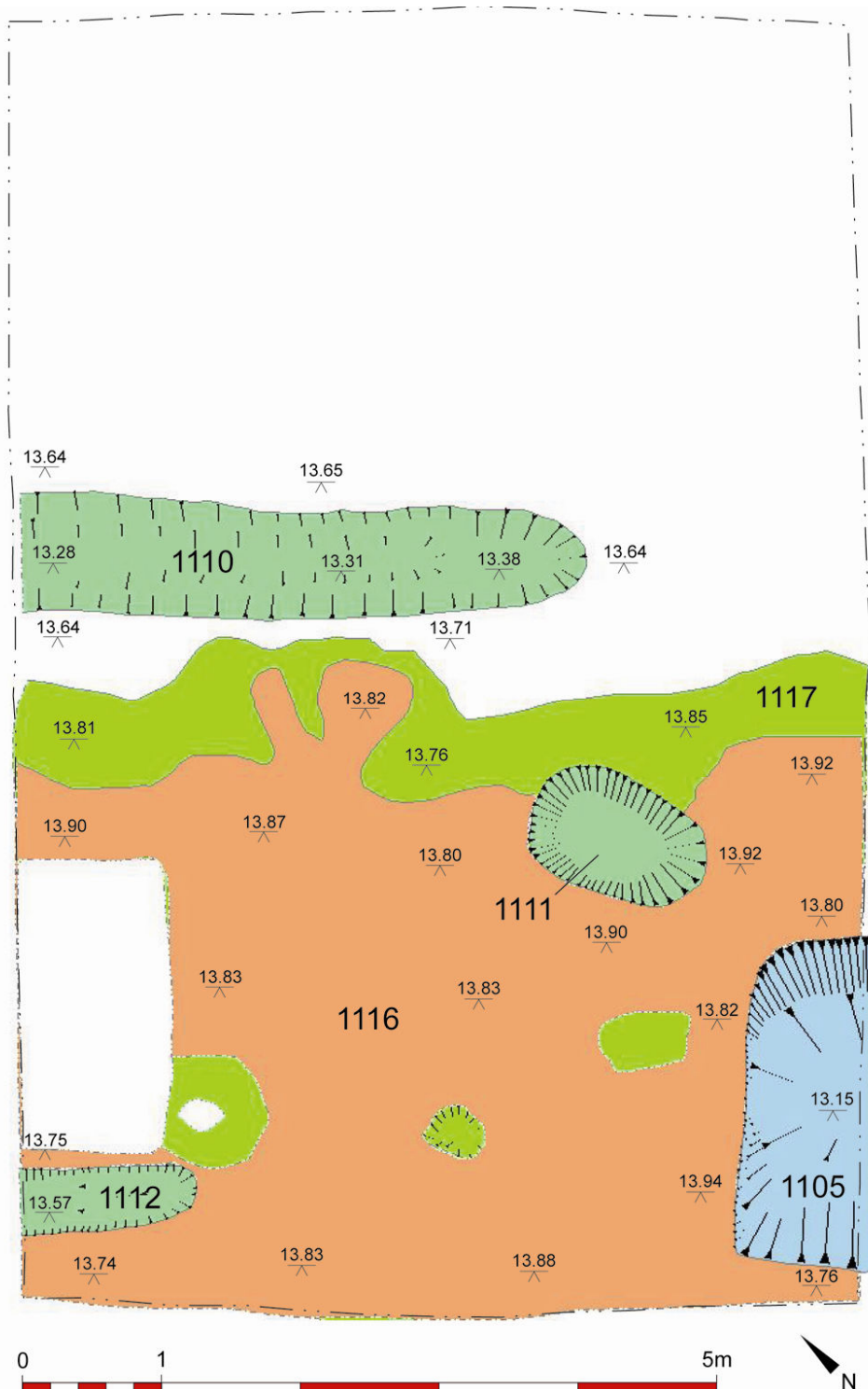


Figure 5 Phase 3 features

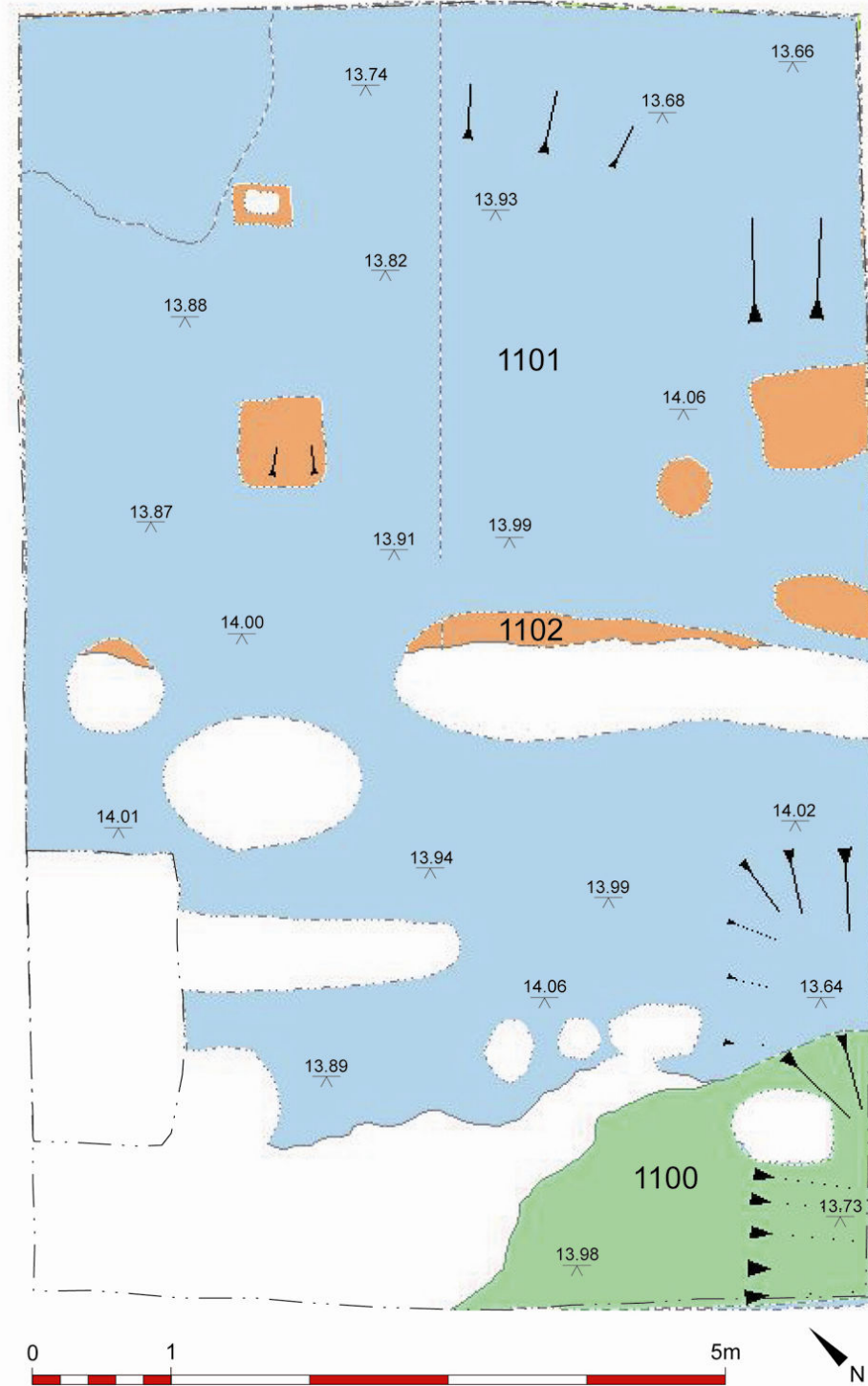


Figure 6 Phase 4 features

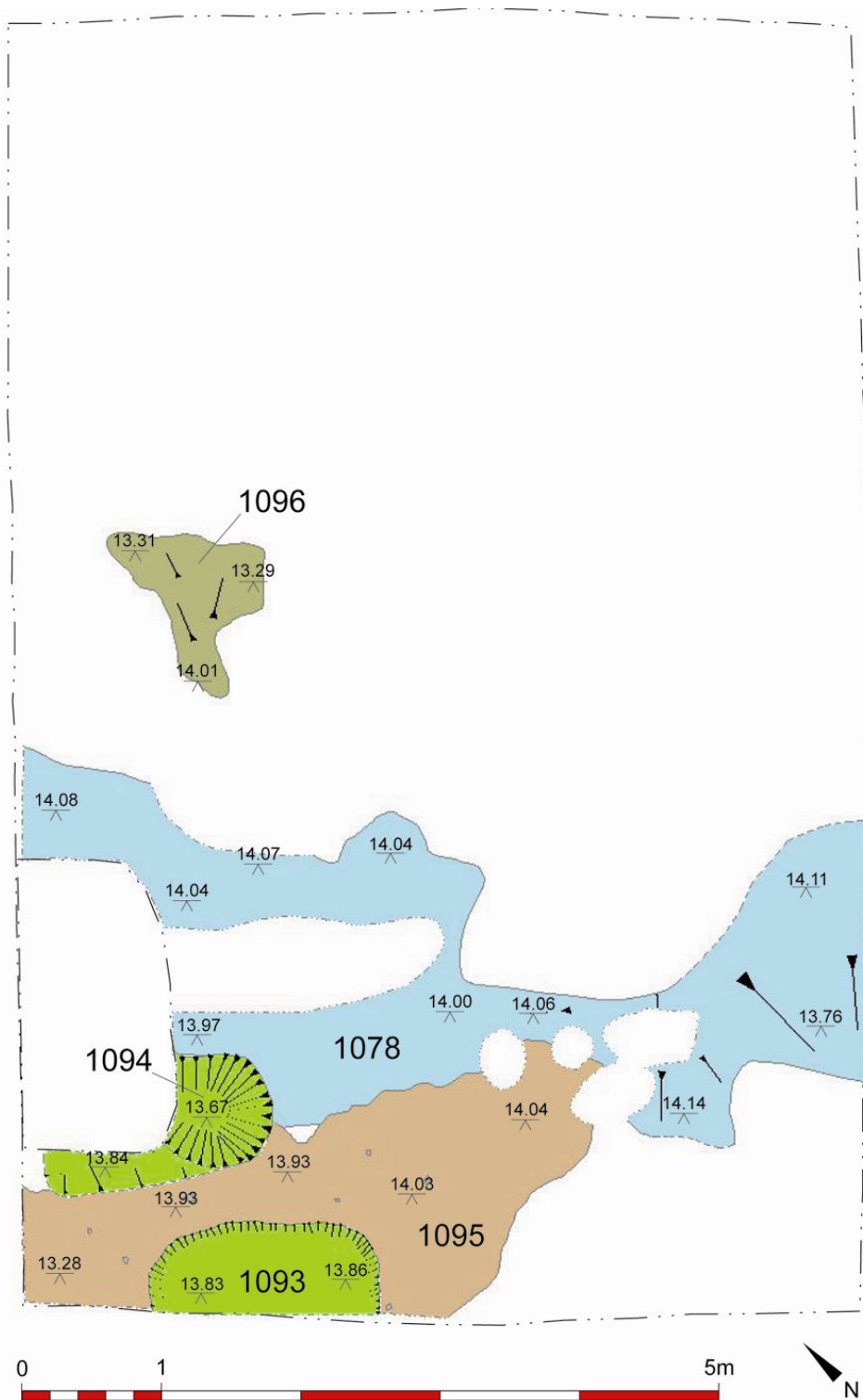


Figure 7 Phase 5 early features

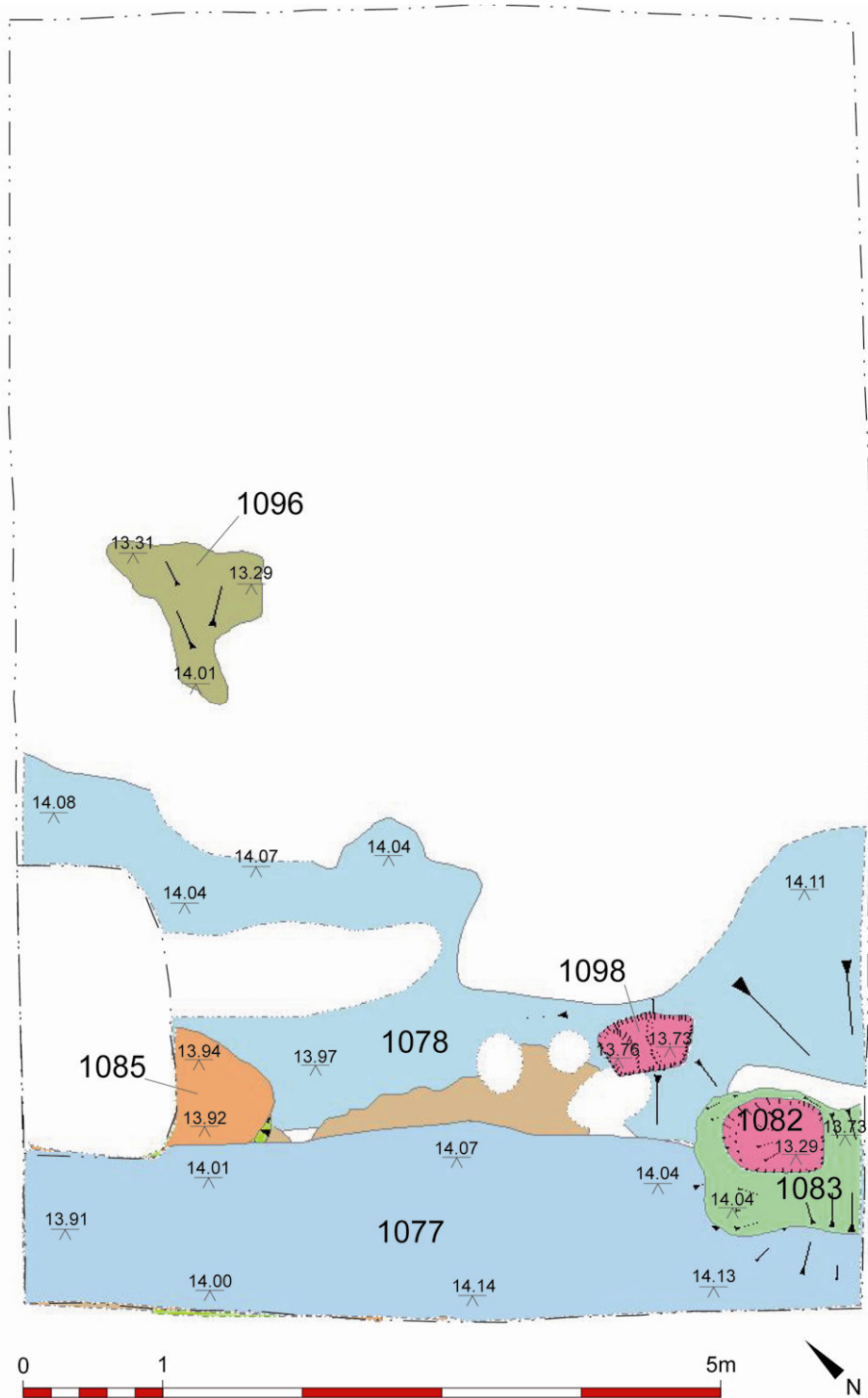


Figure 8 Phase 5 later features

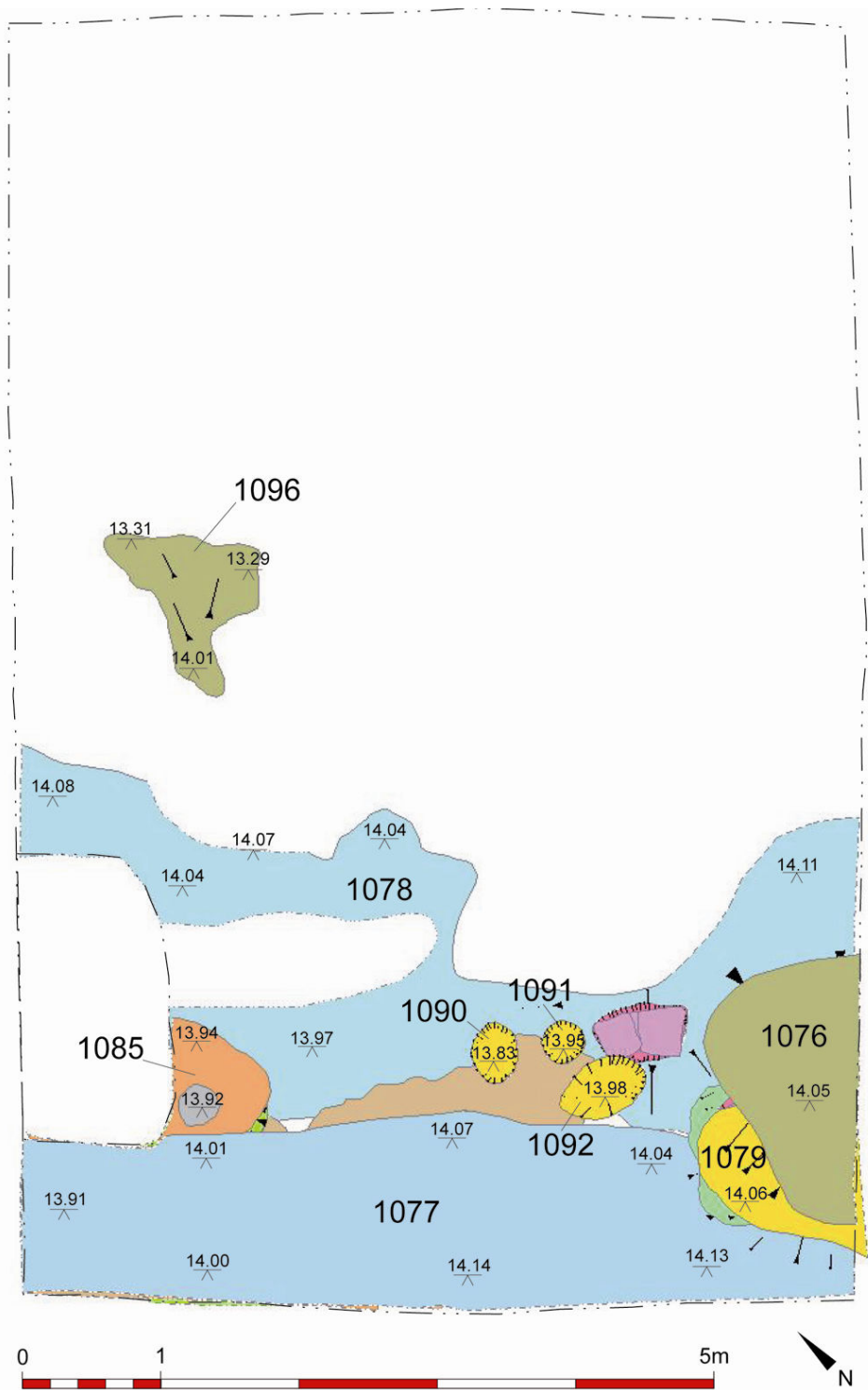


Figure 9 Phase 5 latest features

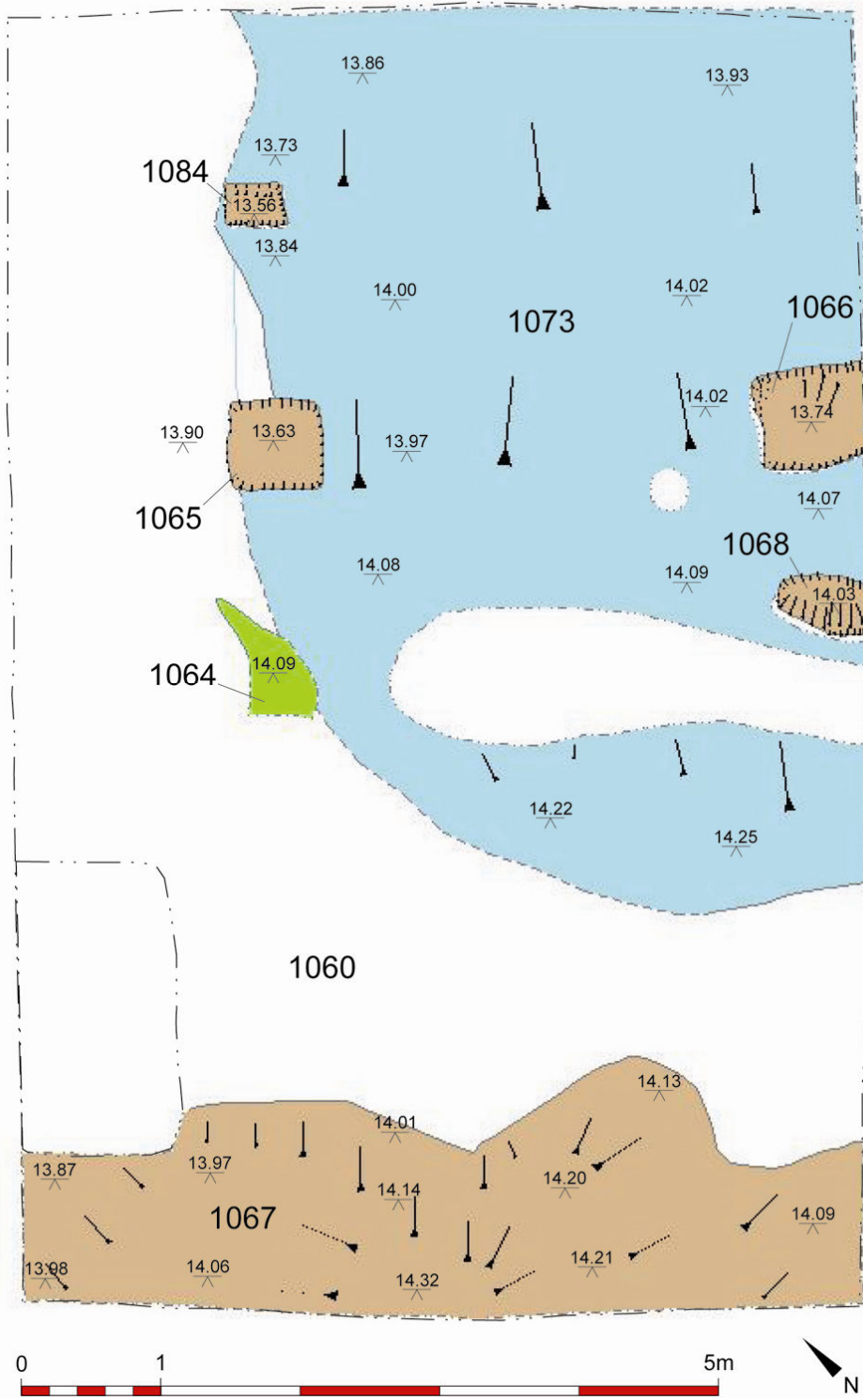


Figure 10 Phase 6 features

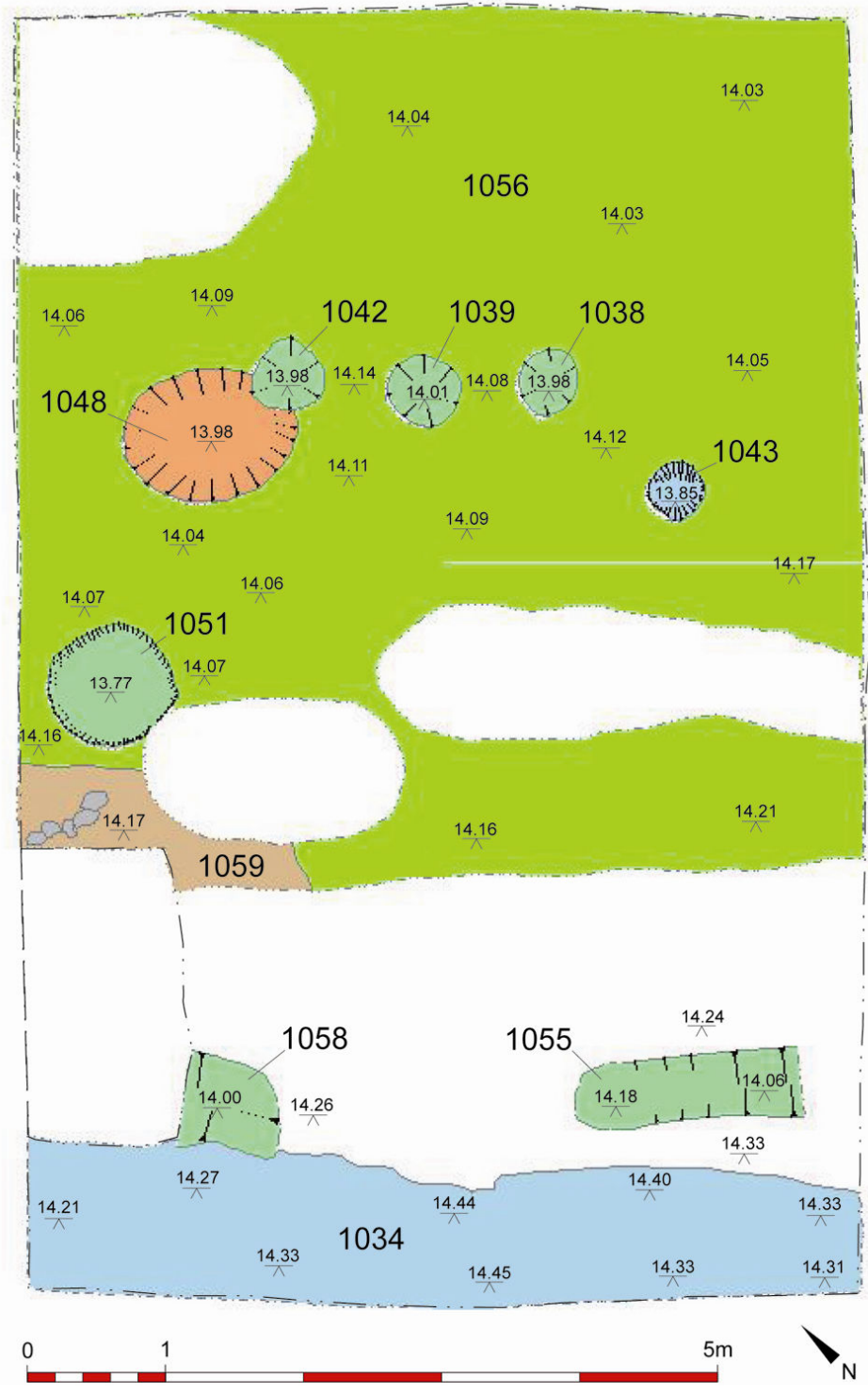


Figure 11 Phase 7 features

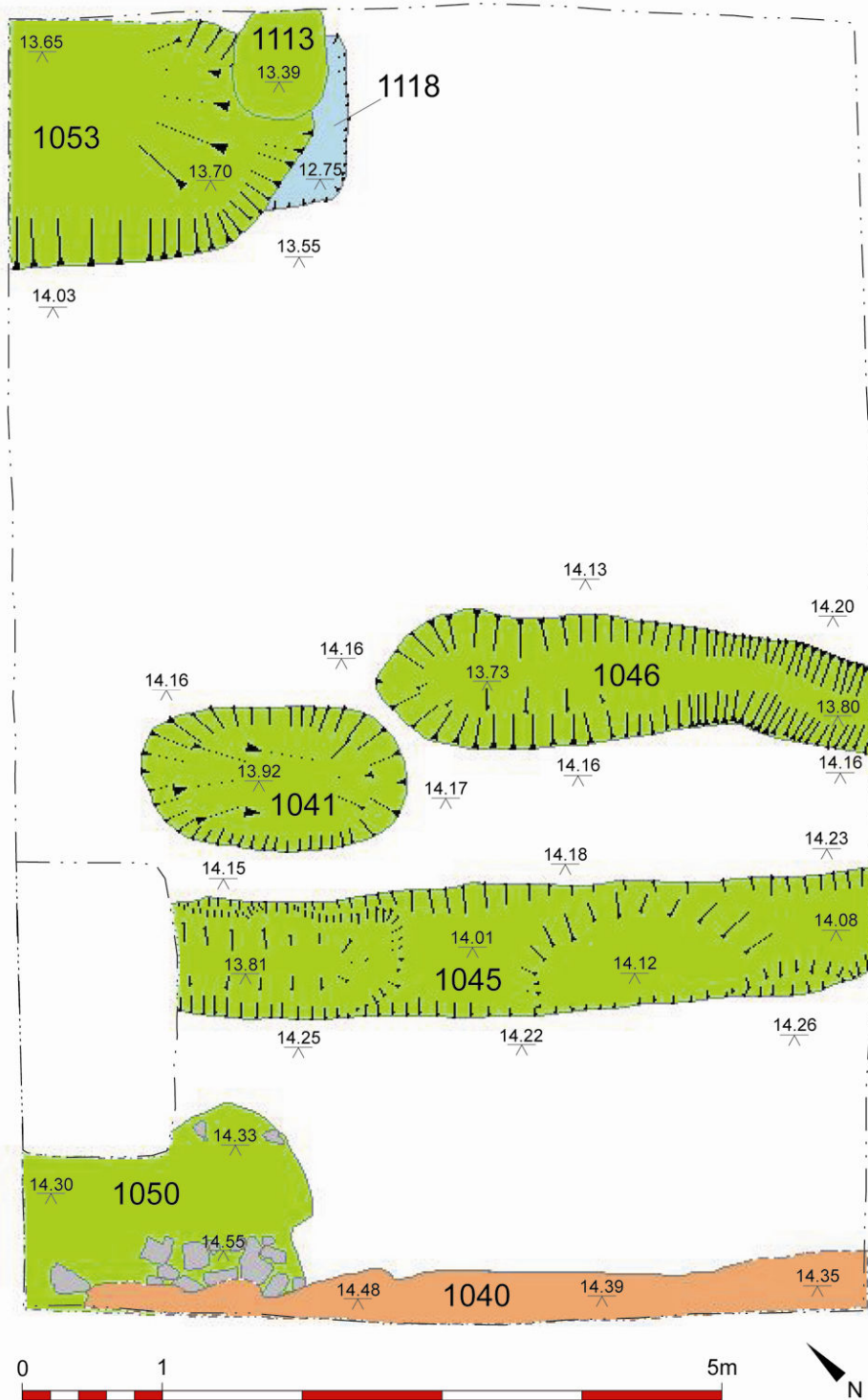


Figure 12 Phase 8 features

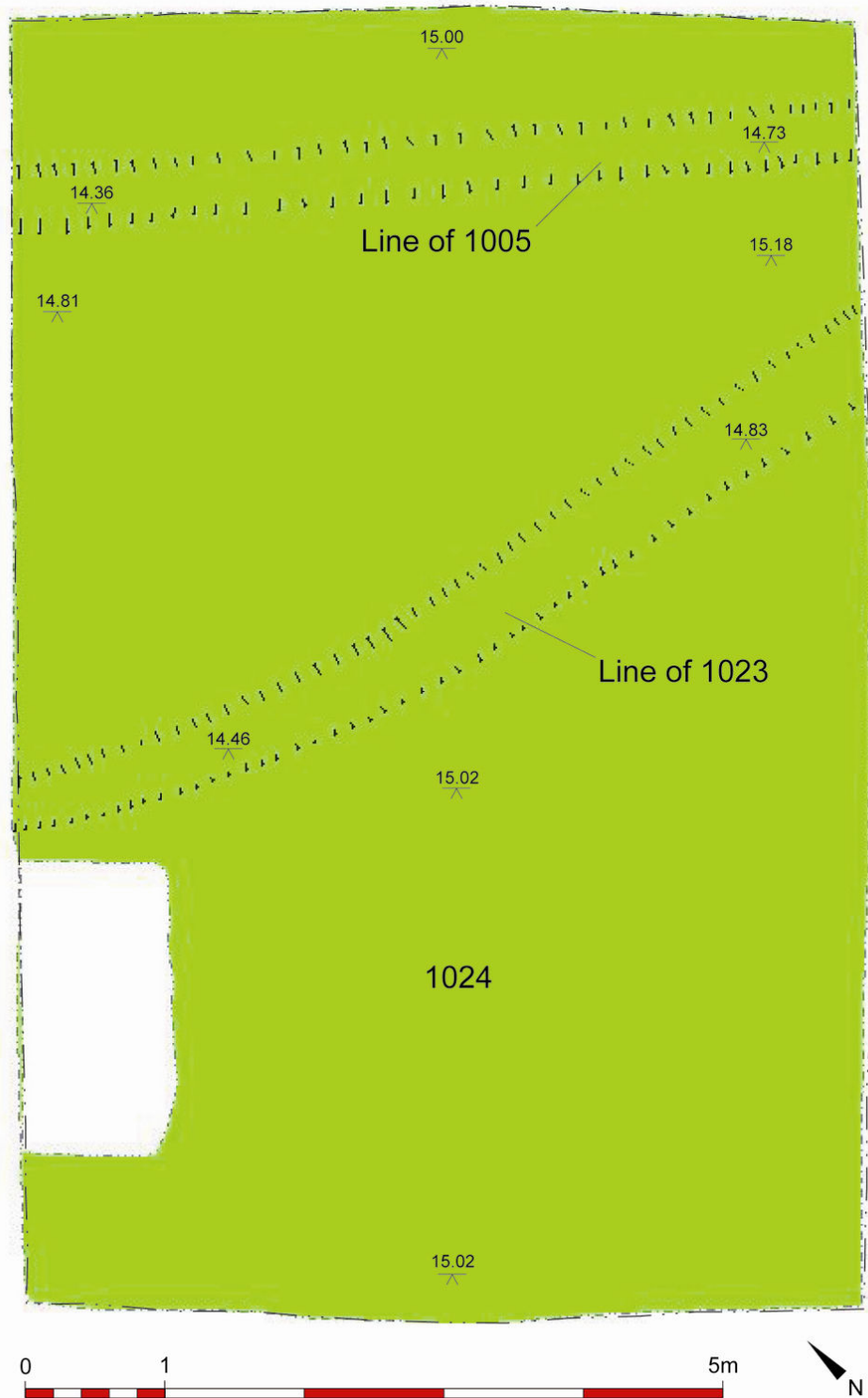


Figure 13 Phase 9 features

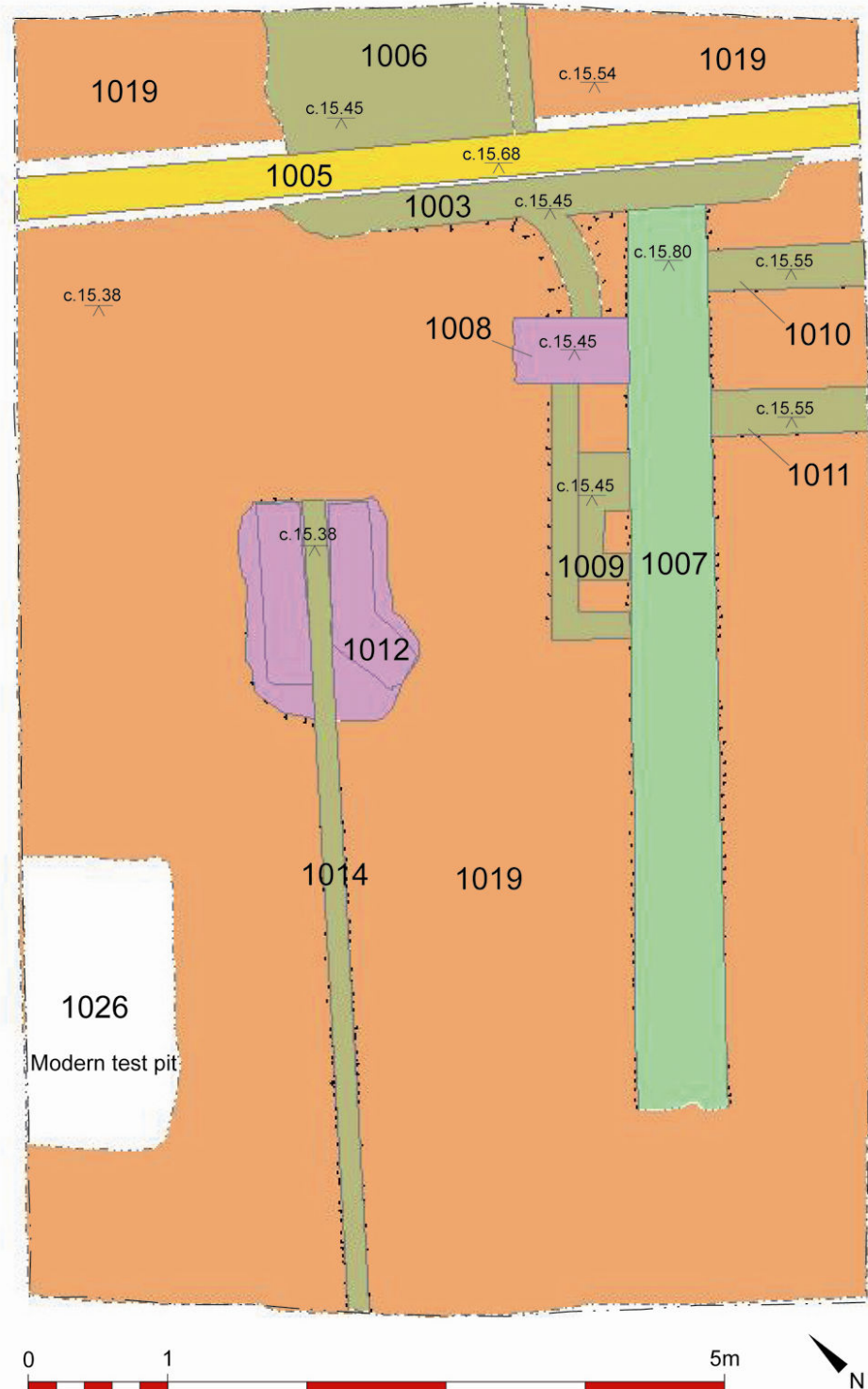


Figure 14 Phase 10 features



Plate 1 Bank 1135 (under scale) and fill 1136 (top left corner) looking south-west



Plate 2 Ditch cut 1140 looking north-west



Plate 3 Lane 1130 looking north-west



Plate 4 Lane 1130 detail, looking north-west



Plate 5 Ditch cut 1115, looking north-west



Plate 6 Spread 1117, looking south-west



Plate 7 Spread 1116 looking south-west



Plate 8 Pit cut 1105, looking east



Plate 9 Ground make-up deposit 1102, looking south-west



Plate 10 Possible yard surface 1078, looking north-west



Plate 11 Possible yard surface 1078, looking south-east



Plate 12 Post-hole 1098, looking north-east



Plate 13 Cobbled surface 1067, looking north-west



Plate 14 Structural postholes, looking south-east



Plate 15 Clay and cobble post-pad 1063 within post-hole 1065 looking south-west



Plate 16 Possible phase 7 fence-line (under photo scale)



Plate 17 Pit cut 1118, looking north-east



Plate 18 Medieval ditch cut 1045, looking south-east



Plate 19 Medieval ditch cut 1046, looking south-east



Plate 20 Medieval plough-soils during machine stripping, looking east



Plate 21 Culvert 1021-1022, looking north-east



Plate 22 Nineteenth century features, looking north-east



Plate 23 Modern test pit 1027, looking south-west



Plate 24 Depth limit of excavation, showing natural 1138, looking south-west



Plate 25 Small find 253, Roman glass bangle



Plate 26 Small find 254, Roman bone spoon handle

APPENDIX 1: ROMAN POTTERY BY R.S. LEARY

1. INTRODUCTION

Some 3570 fragments of ceramic material were examined. The pottery was recorded in broad ware groups and quantified by sherd count. Note was made of the forms present and the condition of sherds in each context. A spot date was given for each context as well as dates noted for diagnostic fabrics and forms. A full tabulated break-down of fabric form by context is available in the project archive under the project number 5244 and accession code YORYM: 2009.156.

2. CHRONOLOGY

Stratigraphic phasing was provided and the pottery is discussed below in phase groups together with a preliminary assessment of the nature of the phase groups thus identified.

2.1 PHASE 1

No pottery sherds were present

2.2 PHASE 2: TRAJANIC TO HADRIANIC WITH SOME FLAVIAN TYPES

540 sherds of Roman pottery were identified from this phase and, in date, these ranged from the late first to early second century with three sherds possibly dating to the late third to fourth century. A small group of sherds from soil layer 1134 included nothing later than the Trajanic period. The presence of a rather flat rimmed grey ware jar similar to the Exeter types might point to a Flavian date for some of this pottery (Swan 2002 fig. 6) while the subdued nature of the rusticated ware is of Trajanic type. Certain Flavian forms and fabrics were uncommon in the assemblage and comprise small numbers of sherds of Central Gaulish lead glazed ware, N Gaulish mortaria (Gillam 1970 form 238) and flagons and sherds of white eggshell ware. The group from 1134 includes types of Trajanic date but could represent ceramic debris accumulated during the Flavian and Trajanic period.

Spread 1131 included sherds from a BB1 lid of Hadrianic or early Antonine date and other vessel types confirm this date. Some dark faced grey ware sherd with decoration typical of the third century rather than any earlier suggest this deposit included later additions.

Only small amounts of undiagnostic bodysherds came from fills 1139 and 1129 but road surface 1130 included a large group with many sherds from a Dressel 20 oil amphora from Spain. The other sherds predominantly had a Hadrianic-early Antonine date range with small numbers of earlier redeposited material. The absence of BB1 suggests a date very

early in the Hadrianic period or the late Trajanic period. Swan favoured a Hadrianic introduction for some of the types present, including the lugged bowl form present in 1130 (2004, 267-9), on the basis that the fortress was empty or had a reduced garrison during the late Trajanic period. There is some uncertainty over the date of the lugged bowl and an earlier introduction is possible. Other types such as the hemi-spherical bowl (Swan 2002 fig. 7 no. 76), the grey ware lid form and the splayed ring necked flagon are all given a Hadrianic start by Monaghan and it seems likely that this group was deposited early in the Hadrianic period before BB1 arrived in any quantity.

Spread 1133 similarly lacked BB1 sherds but include types given a Hadrianic-early Antonine date range. One of these, an everted-rim flagon, was dated by Monaghan from the mid-second century but Swan extended this date range backwards to the Hadrianic period on the basis of Continental parallels (2002 fig 8 nos 83-4). A B3 jar copying a Hadrianic-early Antonine BB1 neckless jar with bead rim and acute lattice burnish conforms this dating.

Dump 1127 contained considerable more pottery and included three BB1 sherds from bead and flange bowl or dish. These sherds may be intrusive and be part of the well known late third to fourth century type or come from a dish of earlier form in the Hadrianic-Antonine period as at Birrens (Robertson 1975 fig. 83 no 18). Where only the rim is found, such vessels would generally be thought to come from the late bowl form. The rest of the material from this layer is of Hadrianic to early Antonine type. BB1 and BB1 type wares were most common in this layer within phase 2.

The pottery from phase 2 includes vessels often associated with ritual or burial rites such as two tazzes from 1127 on which scorching gives evidence of use. Monaghan noted miniature jars, also present in 1127, had similar association (1997, 991). Burnt and distorted sherds could be the result of a number of activities such as cooking, pottery production or inclusion on burial pyres. Cooking vessels such as jars and bowls with sooting suggest domestic debris was also present. Mortaria with scorched and worn internal surfaces indicate food preparation. To explore the character of the earlier layers in phase 2 it will be necessary to record in detail the condition and nature of the pottery and quantify it using rim percentage values. This will permit comparison of the vessel types present with those from elsewhere in York, particularly the cemetery zone, and it is hoped that this will give evidence of the nature of the activity being carried out here in the early second century. The evidence from this assessment suggests that ritual and possibly burial rites were being performed here at least by the Hadrianic-early Antonine period and possibly earlier than this, in the Trajanic period.

2.3 PHASE 3 HADRIANIC/EARLY ANTONINE TO EARLY OR MID-THIRD CENTURY

Pottery from this phase spanned the Hadrianic-early Antonine period to the early or mid-third century with a residual component surviving from the earlier phases.

Fill 1110 contained large sherds from several different amphorae, Hadrianic-early Antonine BB1 and BB1 type vessels, Ebor and Argonne roughcast wares and the range of Ebor ware bowls, including red painted vessels, typical of the Hadrianic-early Antonine period. The samian included some large sherds giving the complete profile of some vessels. The smaller number of sherds from fill 1125 is of similar date as are the vessels represented in spreads 1116 and 1117. Again large parts of samian vessels were present. Sherds from painted Ebor ware bowls were found in a reduced, burnt or scorched condition, as were white ware flagon sherds, a grey mortarium flange and an unidentified red slipped dish. In addition a near complete dish from 1103 is of Hadrianic-early Antonine type. This concentration of large section of fine tablewares, some of which are scorched or burnt would fit a cemetery function for vessels from these deposits. The excavator suggested the charcoal rich soils related to industrial activity and while such usage may account for some of the burnt conditions, the near complete fine wares would be unexpected finds within an industrial area and although it might be possible that the local wares were being made in the vicinity, this would not explain the near complete samian and burnt samian sherds.

Pottery sherds from fills 1103 and 1108 include later material such as a grooved-rim BB1 bowl of mid-late second century date and most of a lugged grey ware jar of at least late second to third century date, both from 1103 and an Ebor beaker with cut glass decoration perhaps copying samian form 72, second half 2nd to mid 3rd, and a butt shaped jar of late second to early third century date, both from 1108. Fill 1106 contained similarly dated pottery and was the earliest deposit with Nene Valley colour-coated ware, BB2 and Dales type ware. Sherds from the scorched body of a Nene Valley colour coated indented beaker gives a late second to third century date and strengthens the case for funerary function for the area, as do the scorched sherds from a W1 flagon also from 1106. One very abraded orange sherd with pale orange colour coat traces was present. This was very micaceous and may be Oxfordshire red slip ware, a type found in fourth century levels at York. It is likely to be intrusive.

2.4 PHASE 4 MID- TO LATE THIRD WITH MUCH REDEPOSITED EARLIER MATERIAL, DEPOSITED IN LATE THIRD CENTURY ON STRATIGRAPHIC EVIDENCE

The ceramics from this phase present some problems in interpretation. Several of the levelling layers such as 1070, 1072, 1107, 1123 and 1128 seem to contain sherds dating to the second century and include material largely derived from earlier phases. Layer 1124

contains a Crambeck grey ware sherd of the late third century at the earliest, a developed bead and flange grey ware bowl dating after c.AD270 and much of an indented funnel neck beaker from the Nene Valley of the mid or late third century, perhaps disturbed from a grave. Fill 1109 contained late third to fourth century type such as Crambeck sherds, a Throlam type jar and a pentice moulded NV beaker. Stratigraphically this implies features later than 1124 are of late third century date at the earliest.

In addition to the later Roman sherds, some possible post Roman sherds are also present in context 1102.

As in previous phases some elements in the assemblage imply ritual and funerary practice – such as a tazze from 1101, a near complete Nene Valley beaker from 1124 and a white-slipped Ebor ware fragment, from a candle stick or possibly a tazze base from 1124.

2.5 PHASE 5 MID TO LATE THIRD CENTURY, DEPOSITED IN LATE THIRD CENTURY ON STRATIGRAPHIC EVIDENCE

During this phase there is fall in levels of BB1 and a rise in BB2. Rather more sherds of Nene Valley and Rhenish colour-coated ware were present and the level of Ebor ware fell. Calcite gritted ware (a dish in context 1077) and Dales ware increased numerically. These trends all fit with a date range in the mid- to late- third century although the presence of sherds dating to c.AD280 or later in phase 4 implies that these groups were deposited at the end of the third century but include material from mid-third century activity.

2.6 PHASE 6 MID-FOURTH CENTURY OR POST-ROMAN

Sherds from a Huntcliff jar of cAD360-early fifth century date was present in 1073 (and possible post Roman and Med??) suggesting a mid- to late fourth century date for this phase. Most of the pottery present in of earlier date and is residual. Of interest is the presence of the face from a Crambeck face neck jar, probably mid-fourth or later, and a sherd from a 3rd century Romano-Saxon type Ebor headpot, both from in context 1073. Another Ebor 3rd century headpot fragment with incised lines, possibly hair, came from 1060A fragment of tazze was also present. The late date range of these vessels suggest this area continued to receive debris derived from funerary or ritual activity in the third and fourth centuries.

2.7 PHASE 7 MID-FOURTH CENTURY OR POST-ROMAN

More post Roman and medieval pottery was identified in this phase, as early as context 1056, and mid-fourth century Oxfordshire red slipped ware bowl was present in the earliest layer, 1074, with much residual pottery of earlier date in the succeeding layers and features.

The quantity of wares common in the fourth century such as the calcite-gritted and Crambeck wares decline overall in phase 7 suggesting that either this phase is of post-Roman date or that the activity being carried out did not result in much pottery deposition. Further unusual ceramic items were present including a sherd from part of the eye of a head pot in 1056 along with part ring stand, scorched black internally. A complete example of this latter object is present in phase 9 context 1025.

2.8 PHASE 8 -11 MEDIAEVAL AND LATER

The Roman material from these phases is all redeposited but included the complete unburnt Ebor ring stand from phase 9 1025, mentioned above, fragments of Ebor headpots from phase 8 1050 and phase 9 1028 (both Romano-Saxon type with stamped bosses).

3. DISCUSSION

The phased assemblages suggest activity spanning the Flavian to mid-fourth century. Phases 2 and 3 could both be subdivided chronologically, phase 2 into a Flavian/Trajanic and a Hadrianic sub-phase and phase 3 into a Hadrianic/early Antonine and a late second to early third century sub-phase.

Phase 4 has material dating after cAD270 in an early phase and has intrusive post Roman material. Much of the remaining sherds have been re-deposited from earlier phases of second and early third century date. A large amount of a mid- or late third century beaker in 1124 along with other late third century material suggests that this layer must be of this date at the earliest and therefore most of the Roman pottery in the later layers is residual. This in turn suggests that very little contemporary pottery is being deposited if this phase is Roman in date which in turn makes the Torksey sherd in 1102 as significant chronologically as the late third to fourth century Crambeck sherd in the same layer – both occur in small quantities in groups of largely re-deposited pottery of second or early third century date. It is difficult to know how to determine which, in any, might be intrusive.

Similarly in phase 5 most of the pottery is early to mid third century. It may be that phases 4 and 5 belong together and represent a single phase of levelling in the later third century which incorporated material from previous phases as well as early to mid-third century rubbish from contemporary dumps. In this scenario the post Roman material from phases 4 and 5 would be intrusive. Given that the different wares increase and decrease in an expected manner for an early to mid-third century group this explanation would be consistent with this explanation.

In phase 6 Huntcliff ware of mid-fourth century or later is stratified within make up layer 1073 as are Mediaeval sherds. The remaining Roman material from later layers in phase 6 would all be dated much earlier than the mid-fourth century and logically represent residual material. This would make the post Roman/Mediaeval pottery more numerous than the late Roman pottery and might suggest that this phase is post Roman in date.

The forms and wares typical of Monaghan's ceramic periods 4a and 4b (AD280-410) are all rare on the site- Overall Crambeck and Huntcliff wares account for only 1-1.5% of the total assemblage and in both cases they do not increase evenly in quantity through phases 6 to 8 suggesting they did not derive from a contemporary domestic settlement where a gradual increase of these wares might be expected over time. The late third to fourth century activity seems to be of a quite different character to earlier phases. Monaghan noted a dip in the absolute quantities at York datable to the late third to fourth century (1997, 866) and this may partially explain the overall low numbers. In addition the Crambeck face neck flagon may indicate a funerary function at this time and as Monaghan observed burials of this date were largely aceramic, this might explain the small numbers of sherds of this date from the site if it continued to have a funerary or funerary related function. The uneven supply of these late wares over phases 6 to 8 may also relate to distortion resulting from levelling material being taken from different areas of the settlement. For example the fall in relative quantities of these late wares in phase 7 may be due to levelling material being taken from deposits of mid to late third century date rather than late third to fourth century date. Such patterns clearly show the problems caused by the levelling operations

4. THE POTENTIAL OF THE ASSEMBLAGE

4.1 SAMIAN WARE

The samian ware should be submitted to a specialist for study since this class of pottery provides the best dating. Given that there are several instances of sherds from the same vessel are distributed over several phases and the most datable sherd may be in a residual context, it is recommended that the whole assemblage be submitted for initial examination. The near complete and burnt nature of some samian vessels suggest that this group may include disturbed grave and pyre goods.

4.2 AMPHORAE

The amphora group is very varied and should be submitted to David Williams for further study so that the range of food and drink being supplied may be reconstructed and the trade links fully understood. No stamps were noted and this should not be overly expensive.

4.3 MORTARIA

Two mortarium stamps were noted and these should be studied by Kay Hartley, the leading expert on this class of vessel. Some 47 coarse ware mortarium were identified and a consultation with Kay Hartley should be sought to identify these more accurately. Data from such a consultation can then be incorporated in the report.

4.4 COARSE POTTERY

The coarse pottery has been catalogued in broad ware groups and more detailed recording would be desirable for sherds from Roman layers. A better assessment of the taphonomy and also the function of the area would be achieved if the pottery were additionally quantified by weight and estimated vessel equivalents. The combination of sherd count and estimated vessel equivalent (EVES) values would allow an assessment of brokenness while weight and sherd count allow the average sherd weights to be assessed. The EVES values are the most reliable measure statistically and allow changes in the relative quantities of different vessels forms to be assessed and compared with other assemblages from York, most of which were quantified using this measure.

Some groups or pots in the assemblage were intrinsically interesting and worthy of publication. The large headpot group is of intrinsic interest both for York and nationally. A red-slip dish is unknown to the author and requires further research while the Ebor red painted campanulate bowl form BM has not previously been noted in the range made in this ware.

The detailed recording of the Roman groups has potential to clarify the character and function of the area, particularly the suggested ritual, funerary and industrial aspects of the groups. The study of the samian is likely to sharpen the dating of the Trajanic to Hadrianic groups and this may in turn improve the dating of some types, such as the lugged bowl form, and ceramic phases, such as the introduction of the red painted wares and forms related to Continental forms in Wetterau ware associated by Swan with the movement of units from Germany to York in the Hadrianic period (2002, 49-53).

5. RECOMMENDATIONS

- Record the stratified Roman assemblages in detail and quantify fully using sherd weight and EVES
- Specialist identification of samian and amphora sherds and mortaria stamped sherds
- Consultation with Kay Hartley in mortaria sources and dating

- Publication of Roman assemblages with particular attention paid to the character and function of the area, the taphonomy of the deposits and any new evidence for the dating of changes in the ceramics of York, particularly in the Trajanic to Hadrianic period
- Publication of intrinsically significant groups such as the head pot and face neck jar fragments, the ring stands and other ritual objects

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Sewage Attenuation Tanks, 28-40 Blossom Street, York

Ware group	2	3	4	5	6	7	8	9	10	11	<>	All
Amphora	8.7	5.0	12.4	18.3	11.6	14.1	22.3	6.8		25.6	4.4	12.2
Saxon?						0.6						0.1
Grey burnished	15.2	17.5	17.0	12.1	2.3	12.2	1.9	0.5			4.4	11.5
BB1	3.7	6.5	6.8	2.9	7.4	7.6	6.0	11.5		11.6	4.4	6.3
BB2			1.6	3.8	3.5	2.6	0.8	1.6				1.7
Colour coats		3.4	5.8	8.0	26.4	27.3	12.5	21.4		4.7	6.7	11.7
CBM	0.2				0.2							0.1
Crambeck Grey			0.4		4.6	2.0	7.2	1.0				1.5
Ebor	24.8	20.9	18.3	7.1	5.6	3.6	8.3	4.7		4.7	33.3	13.4
Eggshell	0.2		0.2									0.1
Fine grey			0.2	0.3		0.2						0.1
Grey	12.6	11.0	8.8	14.2	15.7	7.4	13.2	22.4		2.3	22.2	11.9
Dales			0.4	6.8	0.2	3.8		2.1				1.4
Calcite-g				0.3	3.2	1.8	2.3	3.6				1.0
Lead glazed	0.2											0.0
Mortaria	2.0	0.3	1.3	3.5	2.8	2.4	2.3	1.0		2.3		1.9
Med/Post Med					1.2	2.6	14.0	12.0		27.9	4.4	2.6
Mica-dusted					0.2							0.0
N. Gaulish grey wares	0.4	0.3		1.2								0.2
Not RB			0.1					1.0				0.1
Not pot	0.2		0.4	0.3	0.7	1.4	0.4					0.4
Oxidised					0.2							0.0
Pale/white wares	6.1	2.1	1.2	0.9	0.5	0.8	1.5				2.2	1.8
Post Med								5.7	100.0	2.3		0.6
post RB?				0.3								0.0
Post Roman					0.7	0.4				2.3	2.2	0.2
Rusticated	2.8	2.1	1.0	0.3							2.2	0.9
Samian	15.5	22.0	12.0	14.2	11.6	7.6	2.3	1.0		4.7		11.6
Ebor white-slip	7.6	8.6	12.1	5.6	1.4	1.2	5.3	3.6		11.6	13.3	6.6
Total sherd nos	541	382	825	339	432	498	265	192	8	43	45	3570

Table 1 Relative quantities of wares by phase using sherd counts with absolute total sherd count given by phase

Sewage Attenuation Tanks, 28-40 Blossom Street, York

Phase	Grp	Context	Spotdate	Details
		0		
2	2	1134		None of the coarse pottery need be later than the late first or early second century, periods 1a-1b. The more subdued rustication and the collared flagon rim point to an early Trajanic date but Flavian pottery is present from the excavations as a whole so a Flavian start is possible
2	4	1131		The presence of sherds from a BB1 lid takes this group into the Hadrianic period, AD120 and other types such as the G1 lid and the B3 lid are of similar date. Two dark surfaced grey ware sherds, one with a wavy line burnish motif, are more like the later, third century, types These may be late additions. Other late first to early second century sherds present are presumably redeposited from the activity preceding this spread
2	5	1129	ROMAN	Bodysherds, not closely datable
2	5	1130	LATE 1ST-EARLY 2ND CENTURY	Mostly Had-E Ant types with a small number of late first to early second century
2	5	1139		Two sherds of Ebor and grey ware not closely datable
2	6	1127		Had-E Ant types with some earlier L1-E2 represented. Some dark surfaced grey ware sherds may be of 3rd century type but unlikely since the rest of the material is overwhelmingly earlier. One bead and flange BB1 rim probably belongs to the earlier dish type dating to the second century rather than the late third to fourth bowl form. dated after cAD270
2	6	1133	120-160 AD	Had-E Ant
3	7	1110	120-160 AD	Had-E Ant
3	8	1125	120-160 AD	Had-E Ant diagnostic roughcast ware
3	11	1116		Had-E Ant
3	11	1117		Had-E Ant BB1 and BB1 copies with L1-E2 rusticated wares also present
3	12	1103	LATE 2ND (3RD) CENTURY	Date of deposition probably at least L2nd if not 3rd century. Had-E Ant material with a dark surfaced grey ware lugged jar, lug of surface mounted type. This last type Monaghan dated to Phase4a-4b (L3-M4) but noted as present elsewhere in Yorkshire from the beginning of the 3rd century and the acute lattice burnish suggests a date early in the sequence linking with black burnished vessel decoration. A date in the late second to early third century may be possible. A near complete dish suggest grave goods may have been deposited her, and the scorched condition of the lugged jar also may also suggest a funerary function
3	12	1106	LATE 2ND-MID 3RD CENTURY	Types of late 2nd-mid 3rd century date with one orange slipped sherd, possibly Oxfordshire red slip ware which would be 4th century if this identification is correct. Perhaps intrusive? The overall character of this group suggests a date in the mid-third century
3	12	1108	LATE 2ND-EARLY 3RD CENTURY	Late 2nd-early third century types present such as a butt jar and an E3 copy of samian form 72.
4	9	1107	LATE 1ST-EARLY 2ND CENTURY	Redeposited sherds dating to L1-E2
4	9	1123	LATE 2ND-MID 3RD CENTURY	Residual material with latest sherd dating to L2-M3
4	9	1124	LATE 3RD CENTURY	Crambeck ware giving date in late 3rd at earliest. Includes much of an indented beaker which may be a disturbed grave good

Sewage Attenuation Tanks, 28-40 Blossom Street, York

4	9	1128	?LATE 2ND-EARLY 3RD CENTURY	Redeposited sherd from lugged jar in phase 3 context 1103 ?L2-E3 with no other well dated coarse ware sherds later than this
4	13	1070		Small group with latest sherd being L2-M3
4	13	1071	2ND CENTURY	2nd
4	13	1099	LATE 2ND-EARLY 3RD CENTURY	L2-E3
4	13	1100	3RD CENTURY	3rd
4	13	1101	3 RD CENTURY	Much Had-E Ant but L2-E3 present. The latest sherd are at least E 3rd
4	13	1102	10TH CENTURY	Med Torksey sherd. Latest Roman sherd is L3rd-4th Crambeck ware with much Had-E Ant and L2-3rd redeposited material
5	14	1078	C. 220 AD	M3, c220
5	14	1096	FIRST HALF 3RD CENTURY	Latest sherd dates to the first half 3rd century
5	15	1095	EARLY-MID 3RD CENTURY	One possible post Roman grey ware sherd Latest pottery types are E-M3 (RL)No obvious post Roman sherd seen (AJM)
5	16	1085	LATE 3RD CENTURY	L3 , developed flange BB1 bowl
5	16	1086	EARLY-MID 3RD CENTURY	E-M3
5	17	1077	MID-LATE 3RD CENTURY	M-L3
5	17	1083	MID-LATE 3RD CENTURY	M-L3
5	18	1080	MID 3RD CENTURY	M3
5	18	1088	EARLY 3RD CENTURY	Possible African type bowl, E3rd
5	18	1097		difficult to date
5	19	1076	MID-LATE 3RD CENTURY	M-L3rd
6	21	1073	11TH/12TH CENTURY	Post Roman sherds and range of L3rd-4th types including Crambeck ware flanged bowl with internal wavy line dating after cAD370 and Huntcliff jars of same date range (RL)3 York ware sherds (9th-10th century)2 gritty wares2 splashed wares
6	22	1067	MID-LATE 3RD CENTURY	Possible post Roman grey rim sherd. The latest Roman sherd are M-L3rd (RL)Rim sherd not post Roman (AJM)
6	23	1062		undatable
6	23	1063	120+	120(plus)
6	23	1064	MID-LATE 3RD CENTURY	Possible post Roman grey rim sherd. The latest Roman sherd are M-L3rd
6	23	1081		early 2nd (plus)
6	24	1060	LATE 3RD CENTURY	Latest sherd L3
7	25	1074	LATE 3RD CENTURY	Oxfordshire red slip flanged bowl with a typological date of L3-4 but probably not reaching York until M-4th
7	26	1034	LATE 3RD-4TH CENTURY	Latest sherd is a L3-4 Nene Valley beaker and the rest of the material is largely 3rd century redeposited pottery
7	26	1056	11TH CENTURY	Med and ?AS sherd. Latest Roman pottery is M4-E5 Huntcliff jar sherds (RL)3 gritty wares3 possible York ware

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7	26	1059	LATE 3RD-MID 4TH CENTURY	Latest Roman pottery is L3-M4
7	27	1047	120-160 (9TH/10TH CENTURY)	Had-E Ant with post Roman pot (RL)1 possible York ware (9th-10th century)
7	27	1048	11 th CENTURY	Med with 3rd century redeposited pottery (RL)1 gritty ware (AJM)
7	28	1054	3RD CENTURY(?POST ROMAN)	? Post Roman 3rd redeposited RB (RL)1 ? post Roman grey ware but uncertain (AJM)
7	28	1057	3RD CENTURY	? Post Roman 3rd redeposited RB (RL)Nothing post Roman seen (AJM)
7	30	1029	3RD CENTURY	Med 3rd redeposited RB (RL)Nothing post Roman seen (AJM)
7	30	1030	3RD CENTURY	? Post Roman 3rd redeposited RB (RL)Nothing identified as post Roman (AJM)
7	30	1031	3RD CENTURY	RB scraps, 3rd
7	30	1032	3RD CENTURY	3rd century
7	30	1044	LATE ROMAN	? Post Roman redeposited RB (RL)1 inconclusive grey ware sherd - possibly post Roman but uncertain (AJM)
8	10	1109	11TH/12TH CENTURY	L3-4 types including Crambeck ware. Throlam jar and late pentice moulded beaker (RL)8 gritty ware5 splashed wares1 early york Glazed ware(AJM)
8	10	1113	12 TH CENTURY	1 gritty wares1 lead glazed odd sherd with incised circle decoration
8	31	1035	MID4TH-EARLY 5TH CENTURY (?POST-ROMAN)	Med M4-E5 and redeposited 3rd (RL)1 possible post Roman seen (AJM)
8	31	1037		Med L3-4 and redeposited 3rd (RL)nothing medieval seen (AJM)
8	32	1036	11TH/12TH CENTURY	Med predominantly 3rd redeposited Roman (RL)5 gritty ware1 splashed ware
8	32	1049	13 TH CENTURY	Med L3-4 redeposited Roman2 splashed wares3 York Glazed wares
8	33	1040	ROMAN	Roman amphora sherd
8	33	1050	LATE 3RD-4TH CENTURY	L3-4 Roman (RL)
9	34	1028	LATE 12TH/EARLY 13TH (19TH CENTURY)CENTURY	Med with redeposited Roman M4 and L3-44 gritty wares1 splashed ware1 York Glazed ware2 sandy-red wares1 post medieval earthenware (19th century)
9	35	1024	19TH CENTURY	Med with M3-M4 Roman (RL)4 Hambleton-type wares1 Black ware2 Humber wares4 factory white wares with transfer print
9	35	1025	18TH CENTURY	Med with 3-4 Roman (RL)1 18th century Black ware (AJM)
10	36	1020	19TH CENTURY	2 white wares1 toilet fragment1 green glazed handle (19th cent)
10	37	1019	19TH CENTURY	2 white earthenwares1 pearl ware
11	41	1026		Med with M3-M4 Roman (RL)2 white wares1 porcelain1 earthenware1 York Glazed ware
11	42	1000	14TH/15TH CENTURY	Med with L3-4 Roman (RL)3 York glazed ware2 Brandsby-type1 Hambleton type

Table 2 Pottery spot dates in Phase and Group order

APPENDIX 2: POST-ROMAN POTTERY BY A.J. MAINMAN

There is a small collection of post-Roman pottery from the site.

Inevitably the case of featureless grey sherds there remains questions as to whether these are late Roman or post-Roman sherds and there was a handful of such sherds from this site. These are flagged in the relevant contexts but in almost all cases it was agreed between specialists that they were more likely, for stratigraphic and appearance reasons to be late Roman.

The earliest post-Roman material is of late 9th/early 10th century date in the form of Yorkware but these almost always occurred in deposits with later material. An exception is Phase 7 context 1047. The same is true of the 10th century grey sandy Torksey-type ware. The exception here is a single sherd of Torksey-type ware in Phase 4 context 1102.

The first evidence of stratified post-Roman pottery belongs to the 11th century when gritty wares make their appearance. There are a few instances in Phase 6 1073 when they appear with splashed wares of later 11th or early 12th century date, in Phase 7 in context 1056 and 1048, but more convincingly in Phase 8 where they occur in context 1109, 1113, 1036 and 1049 where they occur together with the splashed and York Glazed wares of the later 11th and early 12th century. In Phase 9 there are further gritty, splashed and glazed wares but also a few sherd of much later (i.e. 18th and 19th century) date. Further post-medieval and modern wares are found in Phase 10 and 11 which include the typical range of earthen wares, white wares, pearl wares (with and without transfer-printed decoration), Black glazed wares and the occasional sherd of porcelain.

The post-roman pottery has little to offer in the way of further research potential; its principal merit is in providing dates for the sequence. They would seem to suggest an early 12th century date for Phase 7 with a possible 13th century date for Phase 8 but it is clear that the later sequence of medieval deposits does not survive although a few sherds of Brandsby, Humber and Hambleton wares survive in later levels. Even the post-medieval and modern levels have few sherds.

The post-Roman pottery is all of domestic types well known and well-represented in the city. No further work on this assemblage is recommended.

APPENDIX 3: ROMAN SMALL FINDS BY H.E.M. COOL

1 INTRODUCTION

This preliminary report on the finds from 28-40 Blossom Street is based on personal inspection of all the non-metallic finds and an inspection of the X-radiograph plates of the metal finds. It aims to provide the dates of items, to draw attention to unusual artefacts and to characterise the nature of the occupation on the site where possible. It is my understanding that full publication of the site will probably form part of a wider publication of various interventions in this area. If that happens the catalogue entries for the non-metallic finds may be used as presented here. The final cataloguing of the metal finds should be carried out after such investigative conservation as is required has been carried out as many are currently obscured by corrosion which prevents certain details being ascertained.

All the small finds from the excavation have been tabulated on pages 82-97. Items such as vessel glass body fragments, hobnails, shank fragments of bone pins and blocks of jet/shale that were presumably derived from the working of that material are summarised here in Tables 1 and 2. The other items are catalogued by Phase below.

Phase	Hobnail	Hairpin	Shank	Jet/shale
2	69	-	1	1
3	12	1	-	-
4	100	1	-	2
5	7	1	2	2
6	45	-	-	-
7	4	4	2	4
8	-	1	-	-
9	-	-	1	-
Total	237	8	6	9

Table 1 The distribution of selected Roman items by phase

Phase	Deep blue	Pale and yellow green	Colourless	Blue/green non-bottle	Blue/green bottle	Total
2	1	-	-	2	2	5
3	-	-	-	9	2	11
4	1	3	-	9	4	17
5	-	-	3	3	2	8
6	-	-	1	1	2	4
7	-	-	2	4	-	6
8	-	-	-	2	1	3
9	-	-	-	-	1	1
U/S	-	-	-	-	1	1
Total	2	3	6	30	15	56

Table 2 The distribution of Roman vessel glass by phase

The bulk of the items that can be independently dated belong to the second and third centuries. The vessel glass summarised in Table 2 provides a good approximation of this. It is dominated by blue/green glass, typical of the first to third century. There is very little brightly coloured (such as deep blue) or lightly tinted (such as the pale and yellow/green shades) glass that was in use when York was first occupied (see for example Cool *et al* 1995, 1561 table 126). Blue/green bottles become very common in the late first century (Price and Cottam 1998, 191-200). At first both the cylindrical and prismatic forms are common, but the former go out of use in the early second century whilst the latter continue in use into the third century. Here the bottle assemblage is dominated by the prismatic forms. No fourth century glass was found but there are a small number of other late Roman artefacts.

As can be seen from Table 1 both hobnails and bone hair pins, together with the shank fragments that came from them, were numerous in this assemblage. This makes the profile of the finds somewhat similar to that found at 35-41 Blossom Street (1989/90.21), though these excavations lack items such as gaming counters which were a common find during the earlier excavations.

Though much of the material derives from make-up layers, there are some features that suggest the nature of the activities being carried out on the site. The Phase 2 finds strongly reflect early military activity, and a piece of glass working waste might hint at the manufacture of glass items in the vicinity in Phase 3. There is nothing that points to any ritual activity apart from the possible shrine fragment no. 4. It may be noted though that the substantial parts of two blue/green bottles in Phase 4 contexts are unusual on domestic sites.

2. PHASE 2

2.1 DISCUSSION

The soil accumulation 1127 provided several very unusual finds of which the most remarkable is the glass bangle no. 1. This is made of opaque white glass and thus belongs to Kilbride-Jones (1937-38) Type 3a which were in use during the later first to earlier second centuries. Glass bangle fragments are not uncommon finds from first and second century sites in the north, but to find a complete one (as this one was when it was first excavated) is extremely rare. York is one of the few places where complete examples have been found though unfortunately they are now lost and known only from an early museum catalogue (Stevenson 1954-56, 219). One of these is recorded as having come from an urned cremation burial. Another complete example, from Wall, also came from a burial (Stevenson

1954-56, 220). A complete penannular glass bangle came from a fourth century burial in the eastern cemetery in London (Barber and Bowsher 2000, 148 no. B168.2) but this belongs to a completely different tradition than the Kilbride-Jones series to which no. 1 belongs. Given the context, this example would appear to be the first complete example to be found in a domestic environment.

It is unusual not only in being complete, but by being opaque white. These bangles came in a variety of colours and patterns, and Price has shown that in this area of Yorkshire the opaque white type was much more likely to be recovered on native sites than on military ones (Price 1988, 351). The recovery of a complete example in an early context at York which at that time must have been very much a military base, is thus noteworthy.

These artefacts are conventionally called bangles but quite how they were used has been a matter of great debate. This example belongs to the lower end of the size range and it would clearly not have been possible to use it as a wrist ornament.

Another uncommon item is no 2 which is most likely to be the terminal of a perforated bone spoon. This is another northern type but which appears to be found mainly on military sites. The largest group was found at Castleford (Greep 1998, 275) and there, where stratified in contexts that were clearly not residual, they belonged to the last quarter of the first century and into the early second century. In discussing them Greep also drew attention to one from a Flavian context from Newstead. The presence of occasional examples from forts on Hadrian's Wall must indicate they continued in use into the second quarter of the second century (Allason-Jones and Milet 1984, 48 no. 2.95). Again quite what they were used for is uncertain given the perforated bowl.

Amongst the metalwork from contexts of this phase no. 3 is likely to be a catapult bolt head (Manning 1985, 170). Amongst the hobnails there was at least one group from context 1130 that indicated that they had been discarded as part of a shoe as eight could be identified on the X-radiograph corroded together in three rows.

An extremely unusual find is the piece of pipe clay no. 4. The features are consistent with it being part of an arched niche of a shrine. Pipe clay shrines with figures are known but they tend to be on a much smaller scale than is implied by this fragment (see for example Lange 1993, 125, fig. 44.5). This piece would warrant further research if the site ever went to full publication. It is the only item that might suggest any ritual activity, though as it comes from a make-up spread this activity may have been elsewhere.

The soil accumulation 1127 also produced the earliest item recovered from the excavations (no. 4). This is a fragment of a deep blue pillar moulded bowl (Price and Cottam 1998, 44-6). Such a combination of colour and form was going out of use in the early Flavian period and so, like all other types of brightly coloured and polychrome pillar moulded bowls, it is rare in York (Cool 1998, 303). The recovery of fragment 5 here is therefore of some interest as it would have been in use during the earliest phase of York's occupation.

2.2 SMALL FINDS

- 1 Bangle; now broken in three joining pieces, complete when found. Opaque white glass. 'D'-section of varying dimensions. Outer diameter 53mm, section 7.5 x 9mm - 8 x 10.5mm. SF253: 1127.
- 2 Spoon; handle fragment. Bone. Circular-sectioned handle with rectangular slightly curved terminal plate, back retains small amount of cancellous tissue on back; sides and top of terminal notched with transverse grooves on front face. Present length 51mm, dimensions of terminal 13 x 12mm, handle section 4.5mm. SF 254 : context 1127.
- 3 Catapult bolt head. Iron. Length 70mm. SF 268: context 1127.
- 4 Shrine (?) fragment. Very fine-grained pipe clay. Flat edge with edge of niche with rib around it , small rib by straight edge. Dimensions 100 x 65mm. SF 373: context 1133.

2.3 VESSEL GLASS

- 5 Pillar moulded bowl; lower body fragment. Deep blue. Part of one rib. Dimensions 25 x 18mm. SF 293: context 1127.
- 6 Bottle; cylindrical neck and horizontal shoulder. Tooling marks at base of neck. EVE 0.28. SF 287: context 1134.

3. PHASE 3

3.1 DISCUSSION

The spread 1117 produced three items of interest though none are particularly well-dated. It is at this point that bone hair-pins start to appear. No. 7 could be attributed to Crummy's (1983) Type 3 which are a late Roman form but typically they have larger knob heads and so probably it would not be wise to include this example with them. Judged by the X-radiograph image no. 8 belongs to the family of seal-boxes decorated with Celtic curvilinear enamelled decoration (Bateson 1981, 49). These are not well-dated by association and so this stratified example will make a useful contribution to the dating of the type. In general seal boxes were in use during the first to third centuries and enamelled ones are most likely to be of second to third century date.

The most interesting find given the suggestion that parts of these make-up layers are derived from rake-out from hearths is the presence of a piece of glass working waste (no. 9). Twisted waste like this is not a common feature of assemblages associated with glass blowing though it has been found in association with glass moiles that do indicate the production of blown vessels at Wroxeter (Price and Worrell 2006, 133). Its value as an indication of the production of vessels is therefore unproven, but it can be added to the *corpus* of evidence for the hot working of glass in York which, apart from the evidence of glass manufacture at Coppergate (Cool *et al* 1999), is relatively slight (Cool 2002, 6).

The unguent bottle no. 10 came from the form with a low discoid reservoir, a type that was in use during the second century (Price and Cottam 1998, 175-7).

3.2 SMALL FINDS

7 Hair pin. Bone. Conical faceted knob head; circular-sectioned broken shank. Present length 61mm, head section 4 x 3mm, shank section 2mm. SF 228: context 1117.

8 Seal box. Copper alloy. Lid, rectangular enamelled with curvilinear cell design. Completely obscured by corrosion. Dimensions 27 x 20mm. SF 224: context 1117.

9 Working waste. Blue/green glass. Twisted rod, right-hand twist; lower end broken, upper end retains iron corrosion. Present length 40mm, maximum section 11mm. SF 223: context 1117.

3.3 VESSEL GLASS

10 Unguent bottle; base fragment. Blue/green. Thick concave base side curving in; pontil scar off centre. Base diameter 29mm, wall thickness 3.5mm, present height 15mm. SF 343: context 1110.

4. PHASE 4

4.1 DISCUSSION

The two earliest items stratified in this phase are the melon bead no. 14 and the deep blue body fragment no. 19. Melon beads are very common in the first century, going out of use by the middle of the second century. Deep blue blown vessels are typical of the mid first century and were going out of use during the Flavian period. The small size of both of these pieces would suggest they were residual in whatever material was being used for the levelling.

The hair pin no 12 does not belong to any of the commonest Roman hair pin forms that Crummy (1983) defined but the relative proportions and combination of features raise no

problems about it being a Roman hair pin. The same cannot be said for 13. It resembles far more closely the medieval implement known as a stylus or parchment pricker (MacGregor *et al* 1999, 1975-7). These normally have iron tips but ones that are made just of bone are known. Given that there is some medieval disturbance to the contexts of this phase, it would probably be best to regard no. 13 as a possible medieval item. The same doubt attaches to the bone tool no. 14. Roman worked bone assemblages rarely include items such as these but they are common in late Anglo-Saxon or Anglo-Scandinavian assemblages (Walton Rogers 1997, 1755).

Amongst the vessels glass there is evidence of a common origin for contexts 1101 and 1073 as the bottles represented by nos. 24 and 25 both consist of joining fragments from both layers. It is unusual to have such substantial parts of bottles from domestic contexts and possibly suggests the levelling material was coming from a specialised source. No. 25 shows a degree of wear on both the mouldings and the corner. The base pattern, two rings and a small central dot, is the same as an unprovenanced square bottle base in the Yorkshire Museum (Accession no. HG 187). They are not precise mould parallels as the example in the Museum is very slightly larger by a matter of 2mm, but the possibility does exist that the latter could have come from the same mould after wear.

Amongst the metalwork, the most notable item is no. 18 that seems to be part of some elaborate fitting which will need investigative conservation to identify. This is the phase that produced the most hobnails, more than half of them coming from one group in context 1100. These were often corroded together in small groups, presumably reflecting their origin from a discarded shoe.

4.2 SMALL FINDS

11 Hair pin. Bone. Oval-sectioned knob head with two grooves below forming a rib between; circular-sectioned shank tapering to broken point. Present length 62mm, knob section 5 x 3mm, shank section 2.5mm. SF 272: context 1123.

12 Parchment pricker? Bone. Oval-sectioned knob head; narrow neck; two projecting ribs; circular-sectioned shank tapering to point. Length 67mm, head section 6.5 x 6mm, shank section 3.5mm. SF 166: context 1102.

13 Weaving tool? Bone. Circular-sectioned slightly faceted rod tapering slightly to both ends, upper end flat, pointed tip; traces of cancellous tissue. Length 82mm, maximum section 6.5mm. SF 245: context 1123.

14 Melon bead. Turquoise frit. Chip from outer face. Dimensions 11 x 4 x 5mm. SF 351: context 1102.

15 Washer. Iron. Square with circular perforation. Dimensions 30 x 30mm. SF 148: context 1101.

16 Bar. Iron. Curved bar with 2 perforations 130mm. SF 183: context 1102.

17 Double spiked loop. Iron. Length c. 55mm. SF70 : context 1070

18 Bar. Iron. Hooked ends, one articulating with a curved bar, latter is like one side of figure of 8 loop, also 5 other fragments of loop like this central bar might have rivet through. SF 71, 73: context 1070

4.3 VESSEL GLASS

19 Body fragment. Deep blue. Possibly the outer edge of an open pushed-in base ring. Dimensions 13 x 10mm, wall thickness 2mm. SF 188: context 1101.

20 Jar (?); two joining fragment. Blue/green; some large bubbles and streaky impurities. Out-turned rim (?), rim edge missing; convex curved side curving into base. Present height c. 30mm, circumference c. 35mm, wall thickness 1-3mm. SF 155 : context 1101.

21 Base fragments (two joining). Pale green; side curving into concave base. Base diameter 30mm, wall thickness 1.5mm, present height 11mm. SF 155: context 1101.

22 Jug or bottle; rim fragment. Blue/green. Outer edge of rim retaining small fragment of folded handle attachment. Rim diameter 35mm. SF 168: context 1102.

23 Bottle; rim and neck fragment. Blue/green. Complete rim, bent out and down, up and in; cylindrical neck retaining part of folded upper attachment. Rim diameter 45mm, present height 26mm. EVE 0.14. SF 264: context 1128.

24 Square bottle; Blue/green. Two joining side fragments broken at junction with shoulder. Two other fragments probably from the same bottle. Width of side c. 70mm, present height 99mm. Sf87 context 1073, sf155 context 1101. EVE 0.28.

25 Square bottle; lower body and base fragment (1101] with joining base fragment [1073]. Concave base; design: two concentric circular mouldings with central dot. Base worn. Bottle width 85mm, present height 50mm. EVE 0.42. sf154 context 1101, sf77 context 1073. EVE 0.42.

5. PHASE 5

5.1 DISCUSSION

The hair pin from this phase (no. 26) is a typical example of a Crummy (1983) Type 3, one of the common forms of the third and fourth centuries. The beaker rim fragment no. 28 is unusual because of the rolled in rim, but the blue/green colour would normally indicate a third century or earlier date.

5.2 SMALL FINDS

26 Hair pin. Bone. Circular-sectioned pointed oval-sectioned knob head; circular-sectioned shank tapering to head and to broken point. Present length 53mm, head section 5.5mm, shank section 4mm. SF 325: context 1077.

27 Ring. Iron. Diameter 33mm. SF 116: context 1095.

5.3 VESSEL GLASS

28 Beaker; rim fragment. Blue/green. Rim bent out and edge rolled in; straight side. Rim diameter 60mm, wall thickness 1mm, present height 12mm. SF 103: context 1095. EVE 0.2.

6. PHASE 6

6.1 DISCUSSION

The finds are of little help for elucidating this phase. There is insufficient of no. 30 remaining to be able to identify the form but the good quality colourless glass it is made from would suggest a second or third century date. No. 29 would need investigative conservation to confirm the identification.

6.2 SMALL FINDS

29 Dividers?. Iron. Two bars apparently joined at top. Length 50mm. SF 80: context 1073.

6.3 VESSEL GLASS

30 Cylindrical beaker (?); two joining fragments. Colourless. Straight side. Bands of 4 and 7 wheel-cut lines Dimensions 22 x 23mm, wall thickness 1mm. SF 9: context 1063.

7. PHASE 7

7.1 DISCUSSION

The finds recovered from the soil accumulation 1056 indicate rather a long time span. The rim (no. 43) is a fragment of a colourless cylindrical cup which is an extremely common type of the later second and earlier third century (Price and Cottam 1998, 99-101). The hair pin no. 31 is an example of a Crummy (1983) Type 4 pin which belongs to the later third and fourth centuries. The other hair pin from this context (no. 33) is a Crummy (1983) Type 1. These can occur throughout the Roman period but are perhaps commonest in the second century. Alongside these items there are an unusual copper alloy animal mount (no. 37) that is unlikely to be of Roman date and an eroded antler burr (no. 42). Antler is generally not exploited within the Roman period until the late fourth century at the earliest and so it too suggests a post Roman date. The spread 1059 produced another glass vessel of late second to third century date (no. 43 see Price and Cottam 1998, 159-60) and an iron key

(no. 36) for a slide lock of a type that cannot be closely dated within the Roman period (Manning 1985, 93).

Items from pit fills indicate a late Roman date. They include another example of a late third and fourth century Crummy Type 4 hairpin (no. 32) and a fragment of a decorated bracelet made of good quality shale/jet of fourth century date (no. 35). The latter is somewhat distorted but was probably intended to be circular like the other notched bracelets from York, rather than having an octagonal exterior (See Allason-Jones 1996, 31-2 for examples of both types from York). It is also noticeable that all of the hobnails from this phase, admittedly a small number as can be seen in Table 1, come from pit fills. This too might suggest the pits are of Roman rather than medieval date.

The unusual mount no. 37 and possible knife no. 38 would need investigative conservation before full analysis.

7.2 SMALL FINDS

31 Hair pin. Bone. Rectangular-sectioned, irregular diamond and triangle faceted knob head; circular-sectioned faceted shank tapering to head and broken end. Present length 59mm, head section 5 x 4mm, shank section 3.5mm. SF 38: context 1056.

32 Hair pin. Bone. Irregular knob head, possibly intended to be diamond and triangle faceted; oval-sectioned shank tapering to head and to broken point. Present length 52mm, head section 5mm, shank section 4 x 3mm. SF 34: context 1048.

33 Hair pin. Bone. Circular-section slightly faceted shank, Very shallow conical head; shank tapering and broken. Present length 74mm, maximum section 5.5mm. SF 46: context 1056.

34 Hair pin. Bone. Circular-sectioned shank tapering to broken end; flat top with slight ridge; possibly from turning. Present length 68mm, maximum section 5mm. SF 51: context 1059.

35 Bracelet, fragment. Jet or shale. Rectangular-sectioned, narrowest to wrist. Asymmetric outline, c. 25% circumference extant. Outer face decorated by opposed triangular notches leaving a diamond pattern on upper face. Outer diameter 90-100mm, section 9 x 7.5mm. SF 6: context 1032.

36 Slide key. Iron. Length 70mm, pointed top to handle, bright flecks. SF 54: context 1059.

37 Animal mount. Copper alloy. Tube at bottom. SF 40: context 1056.

38 Tanged knife (?). Iron. Possible extension. Length 100mm. SF 45: context 1056.

39 Spike or blade. Iron. Length 100mm sf 335 : context 1056

40 Perforated bar. Iron. With rounded end with circular perforation. Length 150mm. SF 49: context 1059.

41 Frame. Iron. Loop at one end with side of a rectangular frame. Length 140mm SF 37: context 1056.

42 Antler burr. SF 372: context 1056.

7.3 VESSEL GLASS

43 Cylindrical cup; rim fragment. Colourless. Vertical side, rim edge fire-rounded with external thickening. Rim diameter 70mm, wall thickness 2mm, present height 28mm, EVE 0.4. SF 47: 1056

44 Spouted jug; rim fragment. Blue/green. Rim rolled in with spout pulled out and up, straight neck. Present height 35mm, wall thickness 2mm. SF 52: context 1059.

8. PHASE 8

8.1 DISCUSSION

Two Roman items occur residually. No. 45 is another example of a late Roman hair pin of the same type as no. 25. No. 46 has the typical baluster moulding often seen on long-handled toilet implements

8.2 SMALL FINDS

45 Hair pin. Bone. Circular-sectioned circular knob head; circular-sectioned shank tapering to head and tip. Length 68mm, head section 7mm, shank section 4.5mm. SF 21: context 1035.

46 Ligula (?). Copper alloy. End with baluster moulding. Present length 63mm. SF 10: context 1040.

9. PHASE 9

9.1 DISCUSSION

The only item of interest from this phase is no. 47 which might be a padlock key though that would need investigative conservation to check. Such keys were in use both in the Roman period and later in the Anglo-Scandinavian to medieval period.

9.2 SMALL FINDS

47 Padlock key? Iron. Rectangular bar with 2 prongs facing up at one end. Length 105mm. SF 23: context 1028.

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APPENDIX 4: ADDITIONAL SMALL FINDS BY N. ROGERS

INTRODUCTION

This report comprises comments upon the small finds not studied by Dr. Cool, nor those included in the metalworking report by Rachel Cubitt; discussion is arranged by phase. Totals of finds by phase do not include the finds noted by Dr. Cool or Rachel Cubitt. Coin identifications are by Liz Andrews-Wilson (FLO, PAS).

PHASE 2 (27 SMALL FINDS)

Two thirds of the small finds from this phase came from Group 6 deposits, and most of those were found in spread/dumping deposit Context 1127. The majority of the finds from this phase comprise nails and nail fragments, but also include possible lengths of iron chain (SF257, C.1127), iron sheet fragments (SF259, C.1127), and a lead alloy strip or offcut (SF273, C.1127). Coin SF294, C.1127 appears to be an As or Dupondius, dated c. 27BC–260 AD – further conservation investigation may enable a more accurate identification.

Phase 3 (32 small finds)

PHASE 3

Objects found in Phase 3 deposits (and not noted by Dr. Cool) include a copper alloy stud (SF240, C.1117), a perforated iron strip (SF236, C.1117) and a possible iron tool (SF211, C.1110). The remainder largely comprises nails, nail fragments, and unidentifiable iron fragments.

PHASE 4 (66 SMALL FINDS)

The levelling deposits of Group 13 produced over half of the small finds from this phase. Iron objects, nails and fragments make up the vast majority of the finds from this group – in addition to the objects recorded by Dr. Cool, the finds included a copper alloy stud (SF187, C.1101), a domed copper alloy object (SF173, C.1102), a Barborous Radiate coin dated c. AD275–285 (SF174, C.1102), iron chain fragments (SF73, C.1072), an iron blade (SF145, C.1101) and a lead alloy strip (SF169, C.1102). Dr. Cool suggested that bone object SF166, C.1102 could be an intrusive medieval parchment pricker; this is a possible identification, and an intrusive medieval Torksey Ware pottery sherd was also noted from this context.

Apart from nails, other material from Group 9 deposits includes coin SF226, C.1124 which is an As or Dupondius, dated c. 27BC–260 AD on which further conservation investigation may lead to a more accurate identification. Copper alloy object SF198, C.1107 may be a fitting. Dr. Cool identified SF245, C.1123 as a possibly intrusive Anglo-Saxon weaving tool – this

may not be a Roman object, but her proposed identification is also unlikely, and the function and date of this object are currently uncertain.

PHASE 5 (35 SMALL FINDS)

Once again, it is a levelling deposit (C.1095, Group 13) which provides the majority of the small finds. Small finds not recorded by Dr. Cool include a copper alloy brooch or buckle pin (SF101), an iron mount (SF126), and an iron blade fragment (SF107), as well as nails and fragments.

Further knives were found in pit backfill C.1085, Group 16 (SF96), and spread C.1077, Group 17 (SF309). Other finds comprised nails and fragments.

Phase 6 (22 small finds)

Make-up deposit context 1073, Group 21 produced most of the finds from this phase – these include two coins (SFs76, 84), both of which are a Nummus, dated c.AD 260–402, a glass/copper alloy object (SF85), and an iron blade fragment (SF81). Apart from nails, the only other find from Phase 6 deposits to note is SF62, C.1060 which may be part of a copper alloy toilet implement.

PHASE 7 (23 SMALL FINDS)

The majority of small finds were recovered from deposits of Groups 26 and 30. In addition to the finds noted by Dr. Cool, these deposits produced a Nummus coin c.AD 330-335 (SF48, C.1056), a ?key fragment (SF58, C.1056), and a ?knife (SF56, C.1056). Numerous iron fragments and nails were also found.

PHASE 8 (8 SMALL FINDS)

Apart from nails, a coin – Nummus or Radiate c.AD 260–402 (SF36, C.1049), and a copper alloy perforated sheet fragment (SF19, C.1037) were found. Finds from Group 10 levels include a hinge pivot (SF353) and a lead alloy metalworking debris fragment SF210 – these are both from C.1109.

PHASE 9 (9 SMALL FINDS)

Two small finds were recovered from Group 35, C.1025, one being a nail, the other being a Nummus or Radiate coin, c.AD 260–402 (SF1). All the other finds were recovered from C.1028, and included a copper alloy wire ring (SF5), a Radiate coin c. AD 260-285 (SF2), and a possible hinge strap (SF27).

PHASE 10 (1 SMALL FIND)

The only small find from this phase was a 19th century bone toothbrush handle (SF313, C.1020).

PHASE 11 (5 SMALL FINDS)

These finds include another bone toothbrush fragment (SF7, C.1000), a stone vessel fragment (SF374, C.1026), and an iron bracket (SF320, C.1026).

SUMMARY AND RECOMMENDATIONS

Apart from the coins, the finds detailed in this report add very little to the main conclusions drawn by Dr. Cool in her assessment. Apart from the post medieval small finds recovered from Phase 10 and 11 deposits, all the finds appear to derive from the Roman period. Although Dr. Cool highlights some exceptions which are of uncertain date (SFs166, 245, 372), there are no small finds which can confidently be attributed to the early medieval or medieval period.

In order to enable further conclusions to be drawn about this assemblage, 31 small finds have been recommended for further conservation investigative treatment so that their identifications can be confirmed. In the long term, it is recommended that the Roman assemblage from these excavations should be studied in association with the material recovered from the other interventions in the area.

ADDENDUM TO SMALL FINDS ASSESSMENT

Fifteen small finds were recovered from samples after assessment reports had been written by finds specialists, both internal (Nicky Rogers) and external (Dr. Hilary Cool). A summary of these finds is given here.

PHASE 2 (8 SMALL FINDS)

The finds comprised unworked (SF395, C.1127; SF396, C.1134) shale fragments, and a jet/shale offcut (SF394, C.1131); iron nails (SF390, C.1127; SF398, C.1131), iron washer type rings of uncertain function (SF399, C.1131; SF400, C.1127), and unidentifiable iron fragments (SF385, C.1134) were also recovered.

PHASE 3 (2 SMALL FINDS)

Five iron hob nail fragments (SF387, C.1116), and three nails (SF391, C.1117; SF401, C.1117) were from deposits of this phase. SF402, C.1125 is an unidentifiable lump.

PHASE 4 (3 SMALL FINDS)

SF393 (C.1101) comprises four ?shale offcuts and fragments. SF392, C.1102 is a copper alloy ring, and SF397, C.1101 is a hob nail.

SMALL FINDS LIST

Find	Context	Name	Material
SF1	1025	Coin	Copper Alloy
SF2	1028	Coin	Copper Alloy
SF3	1028	Nails	Iron
SF4	1026	Fragment	Copper Alloy
SF5	1028	Ring	Copper Alloy
SF6	1032	Bracelet Fragment	Jet
SF7	1000	Tooth Brush Fragment	Bone
SF8	1063	Nails	Iron
SF9	1036	Beaker Fragments	Glass
SF10	1040	Toilet Implement	Copper Alloy
SF11	1040	Wire Fragment	Copper Alloy
SF12	1034	Nails	Iron
SF13	1037	Nail	Iron
SF14	1037	Fragment	Glass
SF15	1028	Bottle Fragment	Glass
SF16	1031	Hook	Copper Alloy
SF17	1030	Nail Fragments	Iron
SF18	1044	Pin	Iron
SF19	1037	Perforated Sheet	Copper Alloy
SF20	1037	Bottle Fragment	Glass
SF21	1035	Hair Pin	Bone
SF22	1028	Hair Pin Fragment	Bone
SF23	1028	Key	Iron
SF24	1035	Nails	Iron
SF25	1035	Vessel Fragment	Glass
SF26	1028	Nails	Iron
SF27	1028	Fitting	Iron
SF28	1048	Nails	Iron
SF29	1048	Slag	Slag
SF30	1048	Object	Copper Alloy
SF31	1050	Nails	Iron
SF32	1049	Nails	Iron
SF33	1047	Nail	Iron
SF34	1048	Hair Pin	Bone
SF35	1048	Pin Fragment	Bone
SF36	1049	Coin	Copper Alloy
SF37	1056	Object	Iron
SF38	1056	Hair Pin	Bone
SF40	1056	Mount	Copper Alloy
SF41	1056	Pin Fragment	Bone
SF42	1056	Nails	Iron
SF43	1054	Nails	Iron
SF44	1056	Object	Iron
SF45	1056	Knife	Iron
SF46	1056	Hair Pin	Bone
SF47	1056	Cup Fragment	Glass
SF48	1056	Coin	Copper Alloy
SF49	1059	Bar	Iron
SF50	1059	Fossil	Stone
SF51	1059	Hair Pin	Bone
SF52	1059	Jug Fragment	Glass
SF53	1060	Vessel Fragment	Glass
SF54	1059	Key	Iron
SF55	1056	Fragment	Bone
SF56	1059	Nails, Object	Iron
SF57	1059	Nail	Iron
SF58	1056	Object	Iron
SF59	1056	Nails, Object	Iron

SF60	1060	Nails	Iron
SF61	1060	Objects, Nails, Fragments	Iron
SF62	1060	Object	Copper Alloy
SF63	1062	Prismatic Bottle Fragments	Glass
SF64	1063	Nail	Iron
SF65	1062	Slag	Slag
SF66	1062	Nail	Iron
SF67	1064	Fragment	Glass
SF68	1067	Nails, Fragment	Iron
SF69	1064	Nails	Iron
SF70	1070	Object	Iron
SF71	1070	Object	Iron
SF72	1071	Nail	Iron
SF73	1072	Chain	Iron
SF74	1067	Hob Nails	Iron
SF75	1074	Strip	Copper Alloy
SF76	1073	Coin	Copper Alloy
SF77	1073	Prismatic Bottle Fragment, Fragments	Glass
SF78	1073	Nails	Iron
SF79	1073	Fragment	Iron
SF80	1073	Object	Iron
SF81	1073	Blade Fragment	Iron
SF82	1073	Object	Iron
SF83	1073	Object	Iron
SF84	1073	Coin	Copper Alloy
SF85	1073	Hair Pin, Wire	Glass, Copper Alloy
SF86	1077	Bottle, Vessel Fragments	Glass
SF87	1073	Bottle Fragments	Glass
SF88	1073	Nails	Iron
SF89	1083	Nails	Iron
SF90	1080	Nail	Iron
SF91	1086	Vessel Fragments	Glass
SF92	1086	Nails	Iron
SF93	1085	Nails	Iron
SF94	1085	Nails	Iron
SF95	1085	Nail Fragment	Iron
SF96	1085	Object	Iron
SF97	1085	Fragment	Iron
SF98	1073	Nails	Iron
SF99	1096	Nail	Iron
SF100	1095	Bottle Fragment	Glass
SF101	1095	Pin	Copper Alloy
SF102	1095	Pin Fragment	Bone
SF103	1095	Beaker	Glass
SF104	1095	Slag	Slag
SF105	1095	Nail	Iron
SF106	1095	Nail	Iron
SF107	1095	Blade Fragment	Iron
SF108	1095	Fragment	Iron
SF109	1095	Hob Nails	Iron
SF110	1095	Slag	Slag
SF111	1095	Fragment	Iron
SF112	1095	Hob Nail	Iron
SF113	1095	Hob Nails	Iron
SF114	1095	Nail	Iron, Bone
SF115	1095	Nail Fragment	Iron
SF116	1095	Ring	Iron
SF117	1095	Nail	Iron
SF118	1095	Hob Nails	Iron
SF119	1095	Object	Iron
SF120	1095	Nail	Iron
SF121	1095	Fragment	Iron
SF122	1095	Hob Nails	Iron
SF123	1095	Fragment	Iron
SF124	1095	Hob Nail	Iron
SF125	1095	Nail	Iron
SF126	1095	Mount	Iron
SF127	1095	Hob Nail Fragment	Iron

SF128	1095	Hob Nail	Iron
SF129	1095	Fragment	Iron
SF130	1095	Hob Nail	Iron
SF131	1095	Fragment	Iron
SF132	1095	Fragments	Iron
SF133	1095	Hob Nail	Iron
SF134	1100	Nail	Iron
SF135	1078	Nail	Iron
SF136	1078	Hair Pin Fragment	Bone
SF137	1078	Nails	Iron
SF138	1101	Hob Nails	Iron
SF139	1101	Vessel Fragments	Glass
SF140	1100	Hob Nails, Nail	Iron
SF141	1101	Nail	Iron
SF143	1101	Hob Nails	Iron
SF144	1101	Fragment	Iron
SF145	1101	Blade	Iron
SF146	1101	Nail	Iron
SF147	1101	Fragment	Iron
SF148	1101	Washer	Iron
SF149	1101	Hob Nails	Iron
SF150	1099	Object	Iron, Stone
SF151	1099	Fragment	Iron
SF152	1099	Nail Fragment	Iron
SF153	1099	Nail Fragment	Iron
SF154	1101	Square Bottle Fragments	Glass
SF155	1101	Jar, Bottle Fragments	Glass
SF156	1101	Nails	Iron
SF157	1101	Hob Nails	Iron
SF158	1101	Nail	Iron
SF159	1101	Nail	Iron
SF160	1101	Fragment	Iron
SF161	1101	Hob Nails	Iron
SF162	1101	Nail, Fragments	Iron
SF163	1101	Nail Fragment	Iron
SF164	1101	Slag	Slag
SF165	1101	Fragment	Iron
SF166	1102	Parchment Pricker	Bone
SF167	1103	Vessel Fragment	Glass
SF168	1102	Jug Fragment	Glass
SF169	1102	Strip	Lead Alloy
SF170	1102	Object	Iron
SF171	1102	Nail	Iron
SF172	1102	Nails, Fragment	Iron
SF173	1102	Object	Copper Alloy
SF174	1102	Coin	Copper Alloy
SF175	1103	Object	Iron
SF176	1103	Nails	Iron
SF177	1102	Fragments	Iron
SF178	1102	Nail	Iron
SF179	1102	Nail	Iron
SF180	1102	Slag	Slag
SF181	1102	Slag	Slag
SF182	1102	Slag	Slag
SF183	1102	Bar	Iron
SF184	1102	Object	Iron
SF185	1102	Nails	Iron
SF186	1102	Hob Nails	Iron
SF187	1101	Stud	Copper Alloy
SF188	1101	Vessel Fragments	Glass
SF189	1101	Slag	Slag
SF190	1101	Fragments	Iron
SF191	1101	Nail Fragments	Iron
SF192	1101	Nail, Fragment	Iron, Fired Clay
SF193	1101	Fragments	Iron
SF194	1101	Fragments	Iron
SF195	1101	Nails	Iron
SF196	1101	Nail Fragments	Iron
SF197	1101	Nails	Iron
SF198	1107	Object	Copper Alloy

SF199	1106	Nails	Iron
SF200	1106	Slag	Slag
SF201	1106	Hob Nails	Iron
SF202	1106	Nails	Iron
SF203	1106	Fragment	Iron
SF204	1106	Nail	Iron
SF205	1106	Slag	Slag
SF206	1107	Nails	Iron
SF207	1107	Fragment	Iron
SF208	1109	Nail	Iron
SF209	1107	Fragment	Iron
SF210	1109	Spillage	Lead Alloy
SF211	1110	Object	Iron
SF212	1110	Object	Iron
SF213	1110	Nail	Iron, Wood
SF214	1110	Hob Nails	Iron
SF215	1110	Fragment	Iron, Wood
SF216	1110	Nail	Iron
SF217	1110	Hob Nails, Fragments	Iron
SF218	1110	Nails	Iron
SF219	1116	Wire Fragment	Copper Alloy
SF220	1116	Hob Nail	Iron
SF221	1116	Nails	Iron
SF222	1116	Nails	Iron
SF223	1117	Manufacturing Debris	Glass
SF224	1117	Seal Box	Copper Alloy
SF225	1124	Nail	Iron
SF226	1124	Coin	Copper Alloy
SF227	1124	Fragments	Iron
SF228	1117	Hair Pin	Bone
SF229	1117	Object	Copper Alloy
SF230	1117	Bottle, Vessel Fragments	Glass
SF231	1117	Nails	Iron
SF232	1117	Hob Nails	Iron
SF233	1117	Nail, Fragments	Iron
SF234	1117	Fragment	Iron
SF235	1117	Fragments	Iron
SF236	1117	Object	Iron
SF237	1117	Fragment	Iron
SF238	1117	Slag	Slag
SF239	1117	Slag	Slag
SF240	1117	Stud	Copper Alloy
SF241	1117	Slag	Slag
SF242	1125	Fragment	Copper Alloy
SF243	1123	Nails	Iron
SF244	1125	Vessel Fragments	Glass
SF245	1123	Weaving Tool	Bone
SF246	1125	Hob Nails	Iron
SF247	1123	Bottle Fragment	Glass
SF248	1125	Nail Fragments	Iron
SF249	1123	Nail, Fragments	Iron
SF250	1125	Slag, Fragment	Slag, Iron
SF251	1123	Hob Nails	Iron
SF252	1124	Nail	Iron
SF253	1127	Bangle	Glass
SF254	1127	Spoon	Bone
SF255	1127	Nails, Hob Nails	Iron
SF256	1127	Hob Nails	Iron
SF257	1127	Nails, Chain	Iron
SF258	1127	Lump	Iron
SF259	1127	Sheet Fragments	Iron
SF260	1127	Nail	Iron, Wood
SF261	1127	Nail Head	Iron
SF262	1127	Slag	Slag, Fired Clay
SF263	1127	Strip	Lead Alloy
SF264	1128	Bottle Fragment	Glass
SF265	1128	Nail	Iron
SF266	1128	Nails	Iron
SF267	1128	Hob Nails, Nail Fragment	Iron
SF268	1127	Bolt Head, Nails	Iron

SF269	1127	Fragments	Iron
SF270	1124	Nail	Iron
SF271	1127	Hob Nails	Iron
SF272	1123	Hair Pin	Bone
SF273	1127	Bottle Fragment	Glass
SF274	1127	Nail Fragment	Iron
SF275	1127	Nail Fragments	Iron
SF276	1127	Nail Fragments	Iron
SF277	1127	Nail	Iron
SF278	1131	Hob Nails	Iron
SF279	1131	Hob Nails, Fragments	Iron
SF280	1131	Fragment	Iron
SF281	1131	Nail, Nail Fragments	Iron
SF282	1131	Nails	Iron
SF283	1133	Nail Fragments	Iron
SF284	1133	Fragment	Iron
SF285	1133	Hair Pin Fragment	Bone
SF286	1136	Flake	Flint
SF287	1134	Bottle Fragment	Glass
SF288	1117	Nail	Iron
SF289	1117	Nail	Iron
SF290	1117	Slag	Slag
SF291	1117	Nails	Iron
SF292	1117	Nails	Iron
SF293	1127	Bowl, Vessel Fragment	Glass
SF294	1127	Coin	Copper Alloy
SF295	1131	Fragments	Iron
SF296	1127	Nail Fragments	Iron
SF297	1130	Hob Nails	Iron
SF298	1139	Nail Fragments	Iron
SF299	0	Bottle Fragment	Glass
SF300	1124	Nail	Iron
SF301	1127	Fragments	Iron
SF302	1117	Nail, Slag	Iron, Slag
SF303	1026	Slag	Slag
SF304	1000	Slag	Slag
SF305	1026	Slag	Slag
SF306	1108	Nail	Iron
SF307	1127	Slag	Slag
SF308	1077	Nails	Iron
SF309	1077	Knife, Nail	Iron
SF310	1077	Fragment	Iron
SF311	1073	Nail	Iron
SF312	1077	Fragment	Iron
SF313	1020	Toothbrush Handle	Bone
SF314	1080	Nail	Iron
SF315	1028	Nail	Iron
SF316	1048	Slag	Slag
SF317	0	Nail	Iron
SF318	1000	Nails	Iron
SF319	1037	Nail	Iron
SF320	1026	Object	Iron
SF321	1056	Nail	Iron
SF322	1025	Nail	Iron
SF323	1028	Nails	Iron
SF324	1049	Worked Fragment	Shale
SF325	1077	Hair Pin	Bone
SF326	1109	Vessel Fragment	Glass
SF327	1127	Vessel Fragment	Glass
SF328	1099	Hob Nails	Iron
SF329	1099	Nails	Iron
SF330	1047	Nail	Iron
SF331	1131	Nail	Iron
SF332	1130	Nail	Iron
SF333	1130	Hob Nails	Iron, Stone
SF334	1130	Fragments, Sherds	Iron, Fired Clay
SF335	1056	Object	Iron
SF336	1110	Nail	Iron
SF337	1073	Nail	Iron
SF338	1123	Nail	Iron

SF339	1127	Nail	Iron
SF340	1100	Fragments, Slag	Iron, Slag
SF341	1100	Nail	Iron
SF342	1110	Fragment	Iron
SF343	1110	Unguent Bottle Fragment	Glass
SF344	1124	Nail	Iron
SF345	1060	Nail Fragment	Iron
SF346	1078	Nail	Iron
SF347	1109	Nail	Iron
SF348	1109	Fragment	Copper Alloy
SF349	1109	Fragment	Copper Alloy
SF350	1101	Jug Fragment	Glass
SF351	1102	Melon Bead Fragment	Frit, Glass
SF352	1099	Nail Fragment	Iron, Stone
SF353	1109	Drop Hinge Pivot	Iron
SF354	1130	Nail Fragment	Iron
SF355	1110	Nail	Iron
SF356	1110	Hobnail	Iron
SF357	1030	Nail	Iron
SF358	1032	Slag	Slag
SF359	1032	Nail Head	Iron
SF360	1032	Nails	Iron
SF361	1031	Vessel Fragment	Glass
SF362	1029	Fragments	Glass
SF363	1031	Hob Nail	Iron
SF364	1044	Hob Nail	Iron
SF365	1029	Hob Nails	Iron
SF366	1044	Slag	Slag
SF367	1056	Slag	Slag
SF368	1029	Slag	Slag
SF369	1031	Slag	Slag
SF370	1030	Slag	Slag
SF371	1032	Slag	Slag
SF372	1056	Burr	Antler
SF373	1133	Shrine Fragment	Fired Clay
SF374	1026	Vessel Fragment	Stone
SF375	1073	Nail Head	Iron
SF376	1044	Fragments	Shale
SF377	1059	Offcut	Jet
SF378	1077	Worked Fragment	Shale
SF379	1078	Offcuts	Shale
SF380	1101	Worked Fragment	Shale
SF381	1124	Offcut	Jet
SF382	1127	Offcut	Shale
SF383	1117	Slag	Slag
SF384	1101	Slag	Slag
SF385	1134	Fragments	Iron
SF386	1116	Slag	Slag
SF387	1116	Hob Nails	Iron
SF388	1102	Slag	Slag
SF389	1127	Slag	Slag
SF390	1127	Nail, Fragments	Iron
SF391	1117	Nails	Iron
SF392	1102	Ring	Copper Alloy
SF393	1101	Offcuts, Fragments	Shale
SF394	1131	Offcut	Shale
SF395	1127	Fragments	Shale
SF396	1134	Fragments	Shale
SF397	1101	Hob Nail	Iron
SF398	1131	Nail Fragment	Iron
SF399	1131	Rings	Iron
SF400	1127	Rings	Iron

APPENDIX 5: CERAMIC BUILDING MATERIAL BY J. M. MCCOMISH

A total of 76514g of Ceramic Building Material (CBM) and stone roofing/flooring material was examined from the excavations. A number of forms were identified ranging from Roman to modern in date. The material was recorded following standard YAT procedures.

FORMS

The overwhelming bulk of the collection (94.1%) was of Roman date, comprising ceramic forms including Roman bricks, flue tiles, roofing tiles (tegulae and imbrices), together with possible stone floor tiles and possible stone roofing tiles. All of the material was typical for York as a whole in terms of the fabrics and stone types present.

The Roman bricks were anything from 14-61mm thick; no other dimensions survived. There were eight signature marks, three of which were possibly a double arc, three were possibly a single arc, one was a line and the eighth was too fragmentary to determine the original design. A hobnail boot imprint was present on one of the bricks, and rain marks were present on the upper surfaces of two of the bricks showing that they had been dried outdoors prior to firing.

Only two fragments of flue tile were present; the first from Context 1028 was a half box flue of late 1st-early 2nd century date which was 13mm thick, while the second fragment from Context 1100 was a combed flue tile 21mm thick which could date from any time within the Roman period.

The Roman roofing material comprised imbrices ranging from 14-27mm thick and tegulae ranging from 15-47mm thick with flanges ranging from 35-69mm in thickness. Five Type E lower cut-aways (Betts 1985, 160) and two upper cut-aways were present on the tegulae.

Stone fragments made up 8.9% of the total material recovered. The majority of these were flat fragments of stone between 10-27mm thick. One of these had a circular peg-hole 9mm in diameter, so was certainly a roofing tile, while the remainder were probably roofing tiles. The majority of these fragments were micaceous sandstone (10 fragments), but two were fine grained sandstone and three were magnesian limestone. An additional four stone fragments ranging from 20-43mm in thickness (two of micaceous sandstone, one of magnesian limestone and one of coarse grained sandstone) had worn surfaces suggestive of use as flooring.

The Roman material also included two unusual blocks of coarse, underfired clay. The first of these possible objects was 150x123mm in size, while the second was 140mm in size in one plane, but no other measurements were present. These objects were present in Context 1097, with additional possibly related fragments of coarse underfired clay present in Contexts 1060 and 1088. It is possible that the fabric is a very coarse version of Fabric R18 from the York series. These objects are smaller than other Roman bricks from York; the smallest size of which, bessalis bricks, are on average 220x210x50mmn (Betts 1985, 176). This would imply that these objects are not standard brick for use in a feature such a hypocaust-pilae. In addition the poor quality of the blocks would surely have limited their structural value. The precise function of these blocks is therefore unclear.

A small quantity of 13-16th century roofing material was present (plain and peg tiles), representing just 2.5% of the total volume of CBM recovered from the site. The plain tiles (7 fragments) ranged from 13-17mm in thickness, while the peg tiles (two fragments) were 13mm and 18mm thick respectively. A complete width of 195mm was present on one of the peg tiles. The peg holes were both square in shape, which is the dominant shape for York as a whole; one was 11x11mm while the second peg hole was 17mm in size which is rather larger than usual. All the medieval material was typical for York in terms of the dimensions and fabrics.

The only post-medieval material was a single fragment of pan tile of 17th century or later date, and a fragment of post-medieval brick of 16-18th century date. The post-medieval brick was slop moulded and 58mm thick. A single fragment of modern machine made fire-brick was also present. As with the medieval material, the post-medieval and modern fragments were typical for York in terms of dimensions and fabrics.

Form	Weight in grams	% of total CBM
Brick	1350	1.8
Flue	350	0.5
Imbrex	7950	10.3
Other	5460	7.1
Pan	225	0.3
Post-medieval brick	975	1.3
Peg	800	1.0
Plain	1150	1.5
Roman brick	38389	50.2
Stone floor	1775	2.3
Stone peg	5075	6.6
Tegula	13015	17.1

Table 1 CBM summary by form

SUMMARY

While most of the material from the site is primarily of use for providing dating evidence for the various contexts concerned, there are some fragments which require further research and recording. The dimensions of some of the tegulae seem abnormally thick; these should be compared to Betts' work, to determine if they are indeed of unusual dimensions. Likewise the signature marks on the Roman bricks should be compared with Betts to determine if they are designs previously recorded in York. The tegula flange shapes and cut-away shapes should also be drawn to provide a complete record of the CBM. The unusual fired clay blocks of Roman date from the site clearly merit further research in an attempt to determine their original function or form, and to determine if anything similar has been excavated in York.

Phase	Context	Date	Keywords
11	1000	1-4TH?	Stone floor?
10	1020	17TH+	Pan, Plain, Peg
9	1025	1-4TH	Rbrick
11	1026	M19TH+	Brick, Pbrick, Tegula
9	1028	13-16TH	Rbrick, Tegula, Imbrex, Plain, Peg, Flue, Stone peg?
7	1034	1-4TH	Rbrick, Imbrex, Tegula
8	1035	1-4TH	Stone floor?, Stone Peg?, Rbrick, Imbrex
8	1037	1-4TH?	Stone floor?
8	1040	1-4TH	Rbrick, Imbrex
7	1047	1-4TH	Rbrick
7	1048	1-4TH	Tegula
8	1049	13-16TH	Rbrick, Imbrex, Tegula, Plain
8	1050	1-4TH	Rbrick, Tegula, Imbrex, Stone peg?
7	1054	1-4TH	Tegula
7	1056	1-4TH	Rbrick, Imbrex, Tegula, Stone peg?
7	1059	1-4TH	Rbrick, Imbrex, Tegula
6	1060	1-4TH	Rbrick, Tegula
6	1060	1-4TH	Rbrick, Tegula, Stone peg, Other
6	1067	1-4TH	Rbrick, Tegula
4	1071	1-4TH	Rbrick, Stone peg?
6	1073	1-4TH	Rbrick, Tegula, Imbrex
7	1074	1-4TH	Rbrick
5	1076	1-4TH	Imbrex, Tegula, Rbrick
5	1077	1-4TH	Rbrick
5	1080	1-4TH	Rbrick, Tegula
5	1086	1-4TH	Rbrick
5	1088	1-4TH?	Other
5	1095	1-4TH	Rbrick, Imbrex, Tegula
5	1097	1-4TH	Rbrick, Imbrex, Other
4	1100	1-4TH	Flue
4	1101	1-4TH	Tegula, Rbrick, Imbrex
4	1102	1-4TH	Rbrick, Tegula, Imbrex
3	1106	1-4TH	Imbrex, Rbrick
4	1107	1-4TH	Tegula, Rbrick

4	1109	1-4TH	Rbrick, Stone peg?, Tegula, Imbrex
3	1110	1-4TH	Imbrex, Tegula
4	1113	1-4TH	Rbrick, Stone peg?
3	1117	1-4TH	Rbrick, Tegula, Imbrex
4	1123	1-4TH	Rbrick, Imbrex
4	1124	1-4TH	Imbrex, tegula, rbrick
2	1127	1-4TH	Stone floor?, Rbrick, Tegula, Stone peg?
4	1128	1-4TH	Tegula, Rbrick, Imbrex
2	1129	1-4TH	Rbrick, Tegula
2	1130	1-4TH	Rbrick, Tegula, Imbrex
2	1131	1-4TH	Rbrick
2	1133	1-4TH	Rbrick, Tegula
2	1134	13-16TH	Plain

Table 2 CBM summary by context (*Rbrick* = Roman brick, *Pbrick* = post-medieval brick, *Brick* = modern brick)

APPENDIX 6: COINS BY E. ANDREWS-WILSON

SF 1. Copper alloy nummus or radiate of an uncertain emperor, 260 – 402 AD

1.7g

Mint uncertain

Obv. Illegible; Bust right

Rev. Illegible

Notes by ID Milsted: Context 1025, phase 9. Residual.

SF 2. Copper alloy radiate of an uncertain emperor, 260 – 285 AD

Heavily corroded, further cleaning may aid the identification

2.78g

Mint uncertain

Obv. Illegible; Radiate and draped bust right

Rev. Illegible; Standing female figure

Context 1028, phase 9. Residual.

SF 36. Copper alloy nummus or radiate of an uncertain emperor, 260 – 402 AD

Heavily corroded, further cleaning may aid the identification

1.75g (2 fragments)

Mint uncertain

Obv. Illegible

Rev. Illegible

Context 1049, phase 8. Residual.

SF 48. Copper alloy nummus of the House of Constantine : VRBS ROMA type,

AD 330-5

17.1mm; 2.4g; DA 5

Mint of Trier TRP

Obv. VRBS ROMA, Helmeted and cuirass bust left

Rev. No legend; Wolf and twins (two stars above) of Old Rome

Context 1056, phase 7. Residual.

SF 76. Copper alloy nummus or radiate of an uncertain emperor, 260 – 402 AD

Heavily corroded, further cleaning may aid the identification

3.14g

Mint uncertain

Obv. Illegible

Rev. Illegible

Context 1073, phase 6. Further work may benefit context dating.

SF 84. Copper alloy nummus or radiate of an uncertain emperor, 260 – 402 AD

Heavily corroded, further cleaning may aid the identification

2.11g

Mint uncertain

Obv. Illegible

Rev. Illegible

Context 1073, phase 6. Further work may benefit context dating.

SF 174. Copper alloy radiate of Divus Claudius (Reece period 14) probably barbarous radiate, AD 275-85

Heavily corroded, further cleaning may aid the identification

1.4g

Mint uncertain

Obv. Illegible

Rev. [CONSECRATIO]; Altar

Ref: Cunetio, no: 2873 ff.

Context 1102, phase 4. Further work may benefit context dating.

SF 226. Copper alloy as or dupondius of an uncertain emperor, 27 BC – 260 AD

Heavily corroded, further cleaning may aid the identification

3.38g

Mint uncertain

Obv. Illegible

Rev. Illegible

Context 1124, phase 4. Possibly residual; further work may benefit dating.

SF 294. Copper alloy as or dupondius of an uncertain emperor, 27 BC – 260 AD

Heavily corroded, further cleaning may aid the identification

12.79g

Mint uncertain

Obv. Illegible; Laureate bust right

Rev. Illegible

Context 1127, phase 2. Further work may benefit context dating.

SF 348. Copper alloy unidentified lump

1.39g

Context 1109, phase 8. No further work.

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Key: DA = Die Axis Measurement

APPENDIX 7: METAL-WORKING RESIDUE BY R.S. CUBITT

1. INTRODUCTION

57 items of metalworking waste were subject to a brief visual assessment. Many of the small find bags were found to contain more than one type of evidence so number of items, rather than number of small finds, is quoted throughout this report.

2. DISCUSSION OF THE DEBRIS BY ACTIVITY

Activity	Classification	Weight (g)	No. of items
Smithing	flake hammerscale	not quantified	2
	spheroidal hammerscale		2
Non-diagnostic ironworking	non-diagnostic iron slag	1464	15
	iron-rich cinder	809	8
Copper alloy working	copper alloy dross	5	1
Metalworking or other high temp. process	Vitrified furnace/hearth lining	59	5
	fired clay	39	5
	Cinder	246	16
	Clinker	25	1
	fuel ash slag	3	2
Blast furnace or lead smelting slag		893	2

Table 1. Summary of the Blossom Street assemblage categorised by different industrial activities.

2.1 IRONWORKING

No definite iron smelting evidence was recorded. However, 893g of heavy glassy slag were encountered. This is reminiscent of both blast furnace and lead smelting slag, although the fragments are perhaps too large to be the latter (Starley, pers. comm. 2010). To obtain a definitive identification it is necessary to determine their chemical composition via X-Ray Fluorescence analysis. If this material is blast furnace slag, the black glassy colour probably indicates early blast furnace production. This iron smelting technology was introduced to Britain around 1500AD (Bayley et al. 2001, 11). Later blast furnace slags tend to be coloured and milky in appearance (Starley, pers comm. 2010).

Roughly 1.5kg of non-diagnostic ironworking slag were encountered. It is not possible to tell through visual analysis alone whether this material is derived from smelting or smithing. The latter is most likely on an urban site such as this. Smelting generally takes place away from urban centres where the raw materials, the ore and fuel, are plentiful.

Hammerscale identified amongst loose soil in four of the small find bags and six of the soil samples is characteristic of iron smithing. Both forms, each indicative of a different type of smithing activity, were recovered from Blossom Street. Flake hammerscale derives from the thin layer of slag present on the surface on an object in the hearth. It becomes detached as the object is worked by the smith. Spheroidal hammerscale represents liquid slag that escapes from inside pieces of iron being welded at high temperatures.

The types of hammerscale found in the small find bags are shown in table 1. The majority of the hammerscale evidence for the site comes from soil samples that were taken at the time of excavation. Six of these were processed by Palaeoecology Research Services (PRS). The <2mm fractions were scanned for magnetic particles (Jaques et al. 2010, 4). The results are summarised in table two.

Sample	Context	Context type	Phase	Magnetic material (g)	Hammerscale present	Other relevant debris
51	1134	soil/ spread	2	0.2	yes, type not stated	charcoal
50	1136	backfill	2	<0.1	Hf and Hs	charcoal
45	1127	spread/ dumping	2	not stated	Hf and Hs	charcoal, coal, cinder, semi-vitrified fuel waste
47	1131	spread/ soil	2	not stated	Hf and Hs	charcoal, semi-vitrified fuel waste
39	1116	spread	3	1.5	Hf and Hs	charcoal, semi-vitrified fuel waste
31	1103	backfill	3	0.3	Hf and Hs	charcoal, cinder, semi-vitrified fuel waste.

Table 2. Data from PRS showing the presence of flake (Hf) and spheroidal (Hs) hammerscale in the soil samples they processed.

The samples processed by PRS belong to only two of the eleven phases of activity identified at Blossom Street. The finds bags that produced hammerscale are in the majority from different phases than the samples processed by PRS, see table 3. Therefore more hammerscale potentially remains to be found in the as yet unprocessed soil samples. The 'bulk sieve' samples from all phases of the site have already been processed for finds retrieval. Unfortunately the mesh size was not sufficiently small that the presence or absence of hammerscale could not be assessed.

809g of **iron-rich cinder** were identified. The iron rich nature of this material is clear from its colour. Unlike the non-diagnostic cinder, it can therefore be linked to ironworking.

2.2 COPPER ALLOY WORKING

A single fragment of **copper alloy dross** was recorded. This represents molten alloy that was lost during processing. Further evidence for the use of a molten copper alloy was identified amongst the cinder and vitrified furnace/hearth lining as described below. There is no evidence to suggest what the molten alloy was used for. It may have been cast into moulds or put to other uses, such as the plating and brazing of ferrous objects.

2.3 POSSIBLE METALWORKING OR OTHER HIGH TEMPERATURE PROCESSES

Several categories of evidence are produced by a range of high temperature processes, not just metalworking. Using visual analysis, it is normally not possible to distinguish the process from which this material derives. At Blossom Street however, visible traces of the metals being worked are present on some of the fragments.

59g of **vitrified furnace/hearth lining** were recorded. This material forms as a result of high temperature reactions between the clay lining of the hearth/furnace and the alkali fuel ash or fayalitic slag. One 5g fragment of this material had droplets of copper alloy visible on the surface. 39g of **fired clay** may represent hearth or furnace structural material that was heated sufficiently to fire the clay but not to the point where it became vitrified. No hearths were identified during the excavation.

The largest category of non-diagnostic material was **cinder**, an associated material to vitrified hearth/furnace lining. Fragments of cinder are formed in the same way but then spall away from the side of the hearth. Three fragments (98g) had droplets of copper alloy visible on their surfaces. The presence of a large quantity of cinder in comparison to more classic fragments of vitrified hearth/furnace lining is suggestive of copper alloy working (Starley, pers. comm. 2010).

The assemblage included a single fragment of **clinker**. This bloated slag is produced when coal is used in smelting furnaces. Coal is known to have been used as a fuel in the Roman period.

2.4 FUEL

A negligible quantity of **fuel ash slag** was recorded (3g). Semi-vitrified fuel waste was also noted in the soil samples processed by PRS along with small fragments of coal and charcoal. Although no **coal/charcoal** was included in the metalworking debris assemblage, 25g were collected during the excavation and recorded as bulk finds. Fuel would have been a valuable resource and carefully stored. It is therefore unsurprising that only small quantities became incorporated into the archaeological record.

Evidence recovered by PRS from sample 2 (context 1134, phase 2) suggests the burning of turfs. PRS concluded that either they were burnt specifically as fuel or that this represents the incineration of roofing material (Jaques et al. 2010, 9). Albeit on a Medieval site, a turf stack encountered in excavations of the Bedern Foundry was taken to suggest the use of peat as a fuel (Bayley & Richards 1993, 195).

3. DISCUSSION OF THE DEBRIS BY PHASE

Table 3 shows how the metalworking debris is distributed between the eleven archaeological phases. Only small quantities of material, in terms of number of items, were recovered from each phase. The evidence from the first four phases is thought to be similar in character so they are therefore discussed together.

Activity	Classification	Phase						
		2	3	4	5	6	7	11
Iron smithing	flake hammerscale	(1)					(1)	
	spheroidal hammerscale						(2)	
Non-diagnostic ironworking	non-diagnostic iron slag		766	409	215		17	57
	iron-rich cinder	78	50	32			10	639
Copper alloy working	copper alloy dross						5	
Possible metalworking or other high temp. process	vitrified furnace/hearth lining		17	37			5	
	cinder	14	1	22		3	279	
	clinker						25	
	fuel ash slag						3	
	fired clay		10	3			26	
	Blast furnace or lead smelting slag							893
	Number of items	4	13	12	2	1	18	4

Table 3. Summary of the Blossom Street metalworking evidence by phase.

Figures for hammerscale from finds bags represent number of occurrences rather than weight and are therefore given in brackets.

3.1 PHASE 2-5 - LATE 1ST TO LATE 3RD CENTURY

The majority of the ironworking evidence comes from these phases. Hammerscale was identified in samples from phases two and three. The presence of hammerscale is usually taken to indicate the location of a smith's workshop. It tends to remain where it falls, whereas bulkier slags are often cleared out and dumped elsewhere. The archaeological deposits that produced this material are in the majority described as dumping and levelling. There is a distinct lack of structural evidence and no hearths were identified in the excavation.

Therefore it is unlikely that metalworking was taking place within the confines of the excavated area.

In this instance the presence of the hammerscale indicates no more than that the soil containing it originated in a location where iron smithing was taking place. It is suggested that that site was either totally cleared or at least the smithy thoroughly cleaned out and the spoil, containing the larger metalworking evidence and hammerscale that was previously incorporated in the floor deposits, was dumped at Blossom Street.

Unfortunately it is not possible to say where the smithy was located in relation to the current excavation area. It is possible that a smith was operating somewhere in the Blossom Street area during the Roman period and that the remains of his workshop have yet to be found.

The results of other excavations on Blossom Street, where similar deposits were encountered, suggest that this dumping is part of a wider phenomenon. The excavations by Oakey at 35-41 Blossom Street (1989/90.21) and Clarke at 14-20 Blossom Street (1991.11) are of particular interest as they both describe series of pits whose fills include metalworking waste and date to a similar period. If a substantial amount of spoil is being dumped in this part of the city at roughly the same time it presumably results from a larger operation than the clearing of one smithy. It is during the 2nd century that the main fortress of Eboracum was redeveloped (Ottaway 2004, 67). This provides one possible explanation. Further research is suggested to investigate the origin of the dumping and levelling deposits recorded in these early phases of the site.

3.2 PHASE 6 - 4TH CENTURY BUILDING AND SURFACES

A single item of cinder weighing only 3g and which cannot be conclusively linked to metalworking activity is all that was recovered from this phase. On the basis of this evidence it appears that the structure and surfaces identified in this phase were not connected with metalworking.

3.3 PHASE 7 - 11TH CENTURY LEVELLING AND ACTIVITY

The largest proportion of the material from this phase is non-diagnostic hearth debris. Some of these fragments (5g of vitrified furnace/hearth lining and 98g of cinder) can definitely be linked to copper alloy working through the droplets of alloy present on their surfaces. This phase also contains the only trace of copper alloy slag in the form of a dross fragment.

Unfortunately, as per the earlier phases, it is not possible to say with certainty that copper alloy objects were being produced within the area of excavation. The majority of the

metalworking evidence for this phase comes from the backfill of rubbish pits. The material may have originated elsewhere on Blossom Street or elsewhere in the city. The only conclusion that can reasonably be drawn is that the material brought onto the site in this phase was sourced from a different industry to the spoil imported in the earlier phases. In contrast to the Roman evidence, there is only a negligible amount of ironworking evidence from phase seven.

3.4 PHASE 8 - 11TH-13TH CENTURY ACTIVITY

PHASE 9 - MEDIEVAL PLOUGHING

PHASE 10 - POST-MEDIEVAL ACTIVITY

No metalworking debris was recovered from these phases. They are therefore not listed in table 3.

3.5 PHASE 11 - MODERN

The 696g of ironworking evidence recovered from this phase are presumed to be residual. There is archaeological evidence for site being disturbed in the modern period, including a test pit which cuts through the whole sequence.

The only fragments of particular interest are the blast furnace or lead smelting slags. No further comments regarding these items can be made until they have been properly identified. Whatever their true identification they are almost certainly residual or related to modern ground make up. Given that fact, it may not be deemed necessary to analyse them further except out of interest.

4. CONCLUSIONS

The small quantity of metalworking debris examined during this assessment includes evidence for iron smithing, the working of molten copper alloy, and potentially evidence for either lead or iron smelting. However it seems apparent that none of this activity is actually taking place at this site. It is not possible to say whether the location of these industries is in the vicinity of the excavation or further afield. Certainly material has been brought in to Blossom Street from different sources in the Roman and early Medieval periods.

5. RECOMMENDATIONS

It is suggested that the Roman metalworking evidence from other excavation on Blossom Street should be re-examined. The production of a larger data set may help address questions surrounding the origin of the dumped material. It is not known whether the Medieval copper alloy working waste is paralleled on other sites. This should be investigated.

It is recommended that the metalworking residues recovered by PRS during this assessment are retained at least until the completion of further analysis. If any of the remaining soil samples are processed the presence/absence of hammerscale within them should be assessed. This evidence may also benefit investigations into the origin of material dumped at Blossom Street.

X-Ray Fluorescence analysis of the blast furnace/lead smelting slag should be undertaken to determine the true nature of these fragments.

One small find (sf367) could not be located prior to the assessment. If possible it should be included in any further assessment that takes place.

6. ACKNOWLEDGMENTS

I am grateful to Dr David Starley for his assistance in identifying the potential blast furnace/lead smelting slags.

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APPENDIX 8: EVALUATION OF BIOLOGICAL REMAINS BY P.R.S.

BY D. JAQUES, A. FOSTER, H. RANNER, AND J. CARROTT

1. INTRODUCTION

Six bulk sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992) and four boxes of hand-collected bone (each of approximately 16 litres) from the excavation at 28-40 Blossom Street were submitted to Palaeoecology Research Services Limited, Kingston upon Hull, for an evaluation of their bioarchaeological potential.

2. METHODS

2.1 BULK SEDIMENT SAMPLES

The samples were inspected and their lithologies recorded using a standard *pro forma*. Subsamples were processed from each for the recovery of plant and invertebrate macrofossils, broadly following the techniques of Kenward *et al.* (1980). Prior to processing, the subsamples were disaggregated in water for 24 hours and their volumes recorded in a waterlogged state.

The washovers and residues from the processed subsamples did not exhibit waterlogged preservation of organic remains and all of the fractions were dried prior to the recording of their size and components.

Plant, invertebrate and vertebrate remains in the processed subsample fractions (washovers and residues) were recorded briefly by 'scanning' (using a low-power microscope where necessary), identifiable taxa and other components being listed on paper. Macrofossil remains were identified by comparison with modern reference material, where possible, and/or with reference to published works. Identifications were made to the lowest taxonomic level necessary to achieve the aims of the project. The components of the washover fractions were recorded using a five-point semi-quantitative scale; the washovers were scanned until no new remains were observed and a sense of the abundance of each taxon or component (relative to the original volume of the subsample) was achieved.

Small subsamples from two of the deposits were examined using the 'squash' technique of Dainton (1992). This was undertaken to evaluate their content of eggs of intestinal parasitic nematodes but routinely reveals other microfossils, such as pollen and diatoms, and these were noted where present. The evaluation slides were scanned at 150x magnification with 600x used where necessary.

Nomenclature for plant taxa follows Stace (1997), with cereal identifications following Jacomet (2006) where nomenclature follows van Zeist (1984). Marine shellfish follow Hayward and Ryland (1995).

During recording, consideration was given to the suitability of the macrofossil remains for submission for radiocarbon dating by standard radiometric technique or accelerator mass spectrometry (AMS).

2.2 HAND-COLLECTED VERTEBRATE REMAINS

For the vertebrate remains, data were recorded on paper and/or entered directly into a series of tables using a purpose built input system and *Paradox* software. Subjective records were made of the state of preservation, colour of the fragments and appearance of broken surfaces ('angularity'). Additional information, such as fragment size, dog gnawing, burning, butchery and fresh breakage, was noted where applicable.

Where possible, fragments were identified to species or species group using the PRS modern comparative reference collection. Remains that could not be identified to species were described as the 'unidentified' fraction. Within this fraction, fragments were grouped into a number of categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid), small mammal, bird and completely unidentifiable.

Nomenclature for mammal species follows Corbet and Southern (1977), fish follow Wheeler (1969) and birds follow Walters (1980); any remains from sediment samples also follow these works.

3. RESULTS

3.1 BULK SEDIMENT SAMPLES

The results are presented in context number order by phase and grouped according to the results of spot dating (details of the plant remains from the washovers, together with notes on other biological and artefactual components, are presented in Table 1). Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method and an estimate of the remaining volume of unprocessed sediment follows (in round brackets) after the sample numbers.

Weights of stone, brick/tile, coal and mortar refer to material over 10 mm; pottery, glass and metal weights are recorded for pieces over 5 mm. Smaller fragments were not extracted and

are not included in the weights. Marine shell less than 10 mm, indeterminate bone fragments less than 4 mm and pieces of bird eggshell less than 2 mm, were also not sorted. The less than 2 mm fractions of the residues were scanned for magnetised particles and the less than 1 mm fractions were retained but not sorted.

3.1.1 PHASE 2 – SPOT DATING 71-100 AD

Context 1134 [possible early Roman soil]

Sample 51/T (3 kg/1.5 litres sieved to 300 microns with washover and microfossil 'squash'; approximately 5 litres of unprocessed sediment remain)

Moist, mid yellow-brown to mid grey-brown, crumbly, slightly silty sand, with stones (2 to 60 mm), degraded oyster shell and charcoal present.

The small washover (15 ml) was largely composed of charred remains, principally fine charcoal with a few larger pieces (2 to 4 mm); these included both oak (*Quercus*) and non-oak stemwood fragments. Traces of charred rhizome/tuber were also recorded, and fragments of marine mollusc shell were common (the latter most likely from an oyster shell recovered in the residue – see below).

Much of the fairly small residue (dry weight 0.704 kg) was stones (to 57 mm; 300 g) including some fire cracked pebbles. The remainder was mostly sand and slightly mineralised greenish undisaggregated (but crumbly) sediment lumps (see below). The magnetised material (0.2 g) consisted mostly of burnt stone but there was also a little hammerscale. The only organic material present in the residue was a single rather poorly preserved left oyster (*Ostrea edulis* L.) valve (to 67 mm; 24 g).

The greenish cast of the slightly mineralised sediment lumps seen in the residue suggested the possibility of a cess component to the deposit. Two microfossil 'squash' subsamples were examined to investigate this, one from the remaining unprocessed sediment and a second from the lumps within the residue. Both subsamples were mostly inorganic, with just a trace of organic detritus and no identifiable microfossils, however.

Context 1136 [backfill of ditch]

Sample 50/T (3 kg/1.75 litres sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain)

Moist, light yellow-buff to light to mid brown (and shades between, and also with patches of orange-brown), crumbly to unconsolidated, sand.

The small washover (10 ml) comprised charred remains, principally fine charcoal with occasional larger pieces (2 to 4 mm); these included fragments of oak stemwood, and non-oak stemwood and roundwood. Traces of ?part-mineralised bone fragments and a charred seed from pea/vetch (*Lathyrus/Vicia*) were recorded.

The small residue (dry weight 0.521 kg) was mostly sand (0.318 kg), with stones (to 23 mm but most less than 10 mm; 29g) and smaller sandy sediment concretions. A few tiny pieces of brick/tile (to 3 mm) and charcoal (to 5 mm) remained in the residue after sorting, and a little unidentified bone (to 10 mm; 0.4 g), some of which was calcined, was also present. The tiny quantity of magnetised material recovered (<0.1 g) included flake and spheroid hammerscale.

3.1.2 PHASE 2 – SPOT DATING 120-160 AD

Context 1127 [?soil/dump deposit]

Sample 45/T (3 kg/2 litres sieved to 300 microns with washover and microfossil 'squash'; approximately 5 litres of unprocessed sediment remain)

Just moist, light to mid yellow-brown to light to mid grey-brown, crumbly, silty sand, with small stones (2 to 20 mm) and a few flecks of charcoal present.

The small washover (25 ml) comprised charred remains, principally macroscopic charcoal with larger pieces (2 to 4 mm) commonly occurring; these included both oak and non-oak stemwood fragments, and heather. Charred cereal remains were limited to a caryopsis fragment from barley (*Hordeum distichon* L./*H. vulgare* L.), with a caryopsis from the associated arable weed, brome grass (*Bromus*). The only seed from wild taxa was from the ubiquitous orache/goosefoot (*Atriplex/Chenopodium*). Animal remains comprised a few insect parts (three items comprising two complete abdomens and one joined head and thorax provisionally identified – all of the remains were rather compressed and distorted – as from adult dipterous flies but thought to be modern contaminants of the sediment sample) and a small number of bones representing small mammals and frog/toad. A few additional items of fire waste were also recorded (i.e. coal, cinder and semi-vitrified fuel waste).

The medium-sized residue (dry weight 0.802 kg) was predominantly a mixture of stones (to 36 mm but most less than 10 mm; 80 g) and undisaggregated (to 10 mm but fragile) silty sediment lumps (crumbly and slightly greenish), with a little sand. Occasional fragments of brick/tile (to 8 mm), coal (to 5 mm) and mussel (*Mytilus edulis* L.) shell (to 3 mm) were not sorted from the residue. A few larger but indeterminate bone fragments were recovered (to 24 mm; 3 g), some of which were calcined, but the only identifiable element was a frog/toad

phalanx. A single piece of hazel (*Corylus avellana* L.) nutshell (to 7 mm; <0.1 g) and a little bird eggshell (to 3 mm; <0.1 g) were also present. Sorted artefactual remains included two pieces of pottery (to 18 mm; 1.4 g), a splinter of glass (to 7 mm; <0.1 g) a lump of corroded iron (probably a nail, to 44 mm) and two smaller circular ferrous objects (total weight of these iron objects 14 g). Flake and spheroid hammerstone were present within the magnetised fraction.

As previously noted for Context 1127, the greenish cast of the slightly mineralised sediment lumps seen in the residue suggested the possibility of a cess component to the deposit. Two microfossil 'squash' subsamples were examined to investigate this, one from the remaining unprocessed sediment and a second from the lumps within the residue. The first was mostly inorganic, with a trace of organic detritus but only a single identifiable microfossil; a rather well preserved *Sphagnum* moss spore. The second was almost identical but lacked any identifiable microfossils.

Context 1131 [dump/levelling deposit]

Sample 47/T (3 kg/2 litres sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain)

Moist, mid grey-brown to yellow-brown, crumbly to unconsolidated, slightly sandy silt, with occasional orange-brown root trace. Stones (2 to 60 mm), charcoal, tiny pieces of brick/tile, a little bone and some very degraded oyster marine shell, were present.

The small washover (25 ml) largely comprised charred plant remains, principally fine charcoal with larger pieces (2 to 4 mm) commonly occurring; these included oak stemwood and non-oak stemwood and roundwood fragments, and heather. Charred food remains were limited to a caryopsis from barley, a caryopsis fragment from wheat (*Triticum*) and a nutshell fragment from hazel (*Corylus avellana* L.). Remains from wild plants were limited to caryopses from heath-grass (*Danthonia decumbens* (L.) DC.), and a large grass (Poaceae). Animal remains consisted of occasional unidentified bone fragments and there was also a little semi-vitrified fuel waste.

The medium-sized residue (dry weight 0.647 kg) consisted largely of sand and stones (to 48 mm; 156 g), with some sediment concretions. Very occasional marine shell and mineralised charcoal (both to 4 mm) remained unsorted from the residue from which some larger mineralised charcoal (to 11 mm; <0.1 g) and mussel shell (to 12 mm; 0.3 g) fragments were recovered. Large mammal bone (to 84 mm; 19 g) included a rib fragment and a cattle incisor, with small vertebrates represented by a single mouse mandible fragment (to 8 mm; 0.1 g).

Two pottery sherds (to 56 mm; 25 g) and a small piece of ?mortar (to 20 mm; 3 g) were recovered and the magnetised material included flake and spheroid hammscale.

3.1.3 PHASE 3 – SPOT DATING 120-160 AD

Context 1116 [charcoal-rich spread; possibly related to industrial activity]

Sample 39/T (3 kg/2 litres sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain)

Moist, mid brown to mid to dark grey-brown, crumbly, silty sand, with occasional small patches of mid yellow-brown silty sand and frequent dark grey/black charcoal/ash-rich areas. Small stones (2 to 20 mm) were present.

The moderate-sized washover (100 ml) was mostly charred remains. These were principally fine charcoal, with larger pieces (2 to 4 mm) commonly occurring; these included ash, oak and non-oak stemwood fragments. Charred cereal remains were limited to occasional caryopses, including wheat, and a culm node, with a few remains from the arable weeds, fat-hen (*Chenopodium album* L.) and black bindweed (*Fallopia convolvulus* (L.) Á. Löve). Remains from wild plants derived from: wetland sedges (Cyperaceae); the aquatic species bogbean (*Menyanthes trifoliata* L.); ruderal knotweeds (Polygonaceae); and the eurytopic taxa selfheal (*Prunella vulgaris* L.), and buttercup (*Ranunculus* subg. *Ranunculus*). Semi-vitrified fuel waste was also recorded occasionally. A waterlogged fruit from the woodland species, elder (*Sambucus nigra* L.), and a nutlet from the ruderal hemp-nettle (*Galeopsis speciosa* Mill./*G. tetrahit* L.) were also present, but are likely to represent modern intrusive material introduced through bioturbation, since there was no other evidence for preservation by waterlogging in this sample, or a sample contaminant.

The medium-sized residue (dry weight 1.221 kg) was mostly large pebbles and other stones (to 62 mm; 567 g). The majority of the less than 10 mm residue fraction was also stones, with a little sand. Occasional fragments of brick/tile (to 4 mm) and coal/cinder (to 5 mm) remained unsorted from the residue, together with a little mussel shell (to 6 mm). Other residue components included one tiny piece of pottery (to 5 mm; <0.1 g), a lump of ferrous material (to 25 mm; 2 g – very corroded, a single piece of hazel nutshell (to 9 mm; <0.1 g) and a few indeterminate fragments of bone (to 22 mm; 1.4 g). The magnetised material present (1.5 g) included flake and spheroid hammscale.

3.1.4 PHASE 3 – SPOT DATING LATE 2ND-EARLY 3RD CENTURY AD

Context 1103 [backfill of pit]

Sample 31/T (3 kg/2 litres sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain)

Moist, mid to dark grey-brown, crumbly (working somewhat soft), silty sand, with small patches of pale grey plastic clay. Brick/tile, charcoal and stones (2 to over 60 mm) were present.

The small washover (10 ml) was wholly composed of fire waste. This was principally fine charcoal, with pieces (2 to 4 mm) commonly occurring; these included both oak and non-oak stemwood fragments, with occasional semi-vitrified fuel waste and a few pieces of cinder.

The medium-sized residue (dry weight 1.254 kg) was a mixture of stones and larger pebbles (to 85 mm; 591 g), sand, and a significant proportion of crumbly silty lumps of undisaggregated sediment, with occasional coal, mussel shell, brick/tile and bone fragments remaining after sorting. One small piece of pottery (to 14 mm; 0.4 g) and a single (indeterminate) fragment of bone (to 30 mm; 1.6 g) were extracted. Magnetised material (0.3 g) included flake and spheroid hammerscale.

3.2 HAND-COLLECTED VERTEBRATE REMAINS

The excavations at Blossom Street produced 890 fragments of bone, representing 12 deposits, which were mostly dump/levelling layers, pit and ditch fills. A small number of fragments were also recovered from a soil deposit and a charcoal-rich spread. These contexts were assigned to three of the ten phases of activity that have been provisionally identified; Phases 2, 3 and 4 – straddling the Roman period from the early 1st century AD through to the late 3rd/early 4th century AD.

Generally, most of the bones were of good or fair preservation, although variation of colour was noted within the assemblages from Contexts 1101 and 1124. A cat bone from the former was very well preserved and very pale in colour which suggested that this may represent an intrusive (possibly modern) component within the deposit. Similarly, a cat skull and mandible from Context 1102 may also have been of recent origin. Material from these deposits, as well as from Contexts 1110 and 1123, included single or small numbers of extremely eroded fragments, the preservation of which was in stark contrast to that of other bones from the same deposits. The remains from Context 1109 were a completely different colour and preservation to those from other deposits, being fawn, with a rather chalky feel and a

somewhat higher degree of fragmentation (some of which was the result of fresh breakage damage).

Alterations to the bones such as dog gnawing and burning were minimal and fresh breakage damage was apparent but not extensive. Evidence of butchery was more common and mostly affected cattle bones. Several different processes were evident. Skinning was indicated by knife marks just below the proximal articulation of a cattle metatarsal from Context 1131 (also seen on a caprovid metatarsal from Context 1101), whilst chops noted around distal humeri, proximal radii and pelves suggested carcass disarticulation. Extensive chopping and splitting of cattle long bones, specifically radii and metapodials was also evident. Many shaft fragments, recorded only as 'large mammal' bone, were fragmented in this way. This type of intensive butchery has been noted from other assemblages of Roman date, particularly from urban deposits, e.g. in Lincoln (Dobney *et al.* 1996) and is generally interpreted as waste from marrow extraction. In addition, horncores from both cattle and caprovids (including goat) had been deliberately removed from the rest of the skull (e.g. from Contexts 1127 and 1130); this is likely to have been for the recovery of the horn sheaths. Butchery marks on caprovid bones were few but one deposit, Context 1110, produced a sheep skull which had been split sagittally, perhaps for access to the brain.

3.2.1 PHASE 2

Four Phase 2 deposits produced a total of 266 fragments, 181 of which were recovered from a layer of accumulated soil/dump deposit, Context 1127. The other three deposits were described as possible road make-up (Context 1130), a dump/levelling deposit (Context 1131) and an early Roman soil (Context 1134).

The main domestic mammals, cattle, caprovid, pig and horse provided the bulk of the assemblage from this phase (Table 2). In terms of numbers of fragments, caprovids were the most commonly occurring species, although cattle remains were only slightly less numerous and large mammal fragments (assumed to be mainly cattle) dominated the 'unidentified' fraction. Counts for pigs and horses differed by a single fragment. However, horse remains (femur, tibia and metapodials) from Context 1130 probably represented the hind limbs of a single individual, and a metatarsal and associated lateral metapodials from Context 1134 were also from one animal. Remains of other taxa included a goat horncore from Context 1127, and a dog metapodial and several ?human shaft fragments from Context 1131. Wild mammals were represented by two red deer fragments (a metacarpal and a scapula) from Contexts 1127 and 1130 and a small mammal femur was noted from Context 1131. Most of the bird fragments recovered could not be identified but two chicken bones were recorded from Context 1127.

For both cattle and caprovids, preliminary observations of skeletal element representation suggested that most parts of the body were represented, although for caprovids, mandibles and metapodials and, to a lesser extent, radii, were prevalent.

Pathological conditions were noted on two cattle metatarsals. One had a series of lumps of extra bone growth along the proximal anterior aspect of the shaft. Similar bone changes have been noted in caprovid metapodials from many archaeological sites (e.g. from Selby and Beverley) but have not been frequently encountered on the metatarsals of larger mammals. The aetiology of this condition is unknown, but has been discussed in detail by Brothwell *et. al.* (2005).

The second metatarsal had a boney swelling towards the distal end of the diaphysis. This may represent a break in the bone which has subsequently healed but, unfortunately, the bone was damaged by fresh breakage and further interpretation was not possible at this stage.

Material from this phase included 35 bones that were potentially measurable and 13 mandibles with teeth *in situ* (mostly caprovid) of use for the provision of biometrical and age-at-death data.

3.2.2 PHASE 3

One hundred and thirty-eight fragments of bone were recovered from three Phase 3 deposits, Contexts 1103 (a pit fill), 1110 (a ditch fill) and 1116 (a charcoal rich spread). Most of the bones (115 fragments) were recovered from Context 1110.

Remains of cattle and caprovids were predominant, together with an unidentified component consisting mainly of large mammal cranial fragments, with some ribs and vertebrae (Table 2). A brief examination of the occurrence of different parts of the skeleton for caprovids showed a prevalence of mandibles and lower limb elements. Cattle remains, however, included a range of elements and, although bones representing butchery waste were common, meat-bearing bones were also present. The four pig bones recovered included two mandibles, both with canines, one representing a male individual and the other a female. Single fragments of horse, dog and red deer were identified, all from Context 1110. The red deer scapula was made up of two pieces, the spine having broken ante-mortem. There was evidence of new bone growth along both sides of the break. However, the two parts of the bone were still separate and had not had time to heal properly before the animal was killed.

This assemblage included 11 fragments that were measurable and four mandibles with teeth *in situ*.

3.2.3 PHASE 4

Vertebrate remains from this phase amounted to 486 fragments from five deposits, four of which were dump/levelling deposits (Contexts 1101, 1102, 1123 and 1124), the fifth being a pit fill (Context 1109). The assemblages assigned to this phase were of slightly mixed appearance, with possible modern/recent intrusions, i.e. cat remains from Contexts 1101 and 1102, and eroded fragments (Contexts 1101, 1123 and 1124). As noted above, the colour and preservation of the material from Context 1109 varied somewhat from the rest of the assemblages from the site.

Cattle remains were prevalent, with smaller quantities of caprovid and pig bones also noted. The caprovid remains included a goat horncore from Context 1102. Teeth from one of the pig mandibles from Context 1101 included a large canine indicative of a male individual. This same mandible showed minor abnormal wear, with the second and third premolar being slightly rotated. Few other species were present in the assemblages; cat remains (as mentioned above) were recovered from Contexts 1101 and 1102, whilst dog and horse bones were recorded from Context 1101. Two eroded fragments were tentatively identified as cervid; unfortunately these were too poorly preserved to allow a more confident determination. Birds were represented by two chicken bones (a spurred tarsometatarsus from Context 1109 and a humerus fragment from Context 1123), a goose radius fragment (Context 1109) and several unidentified shaft fragments. A single haddock (*Melanogrammus aeglefinus* (L.)) cleithrum was identified from Context 1109. This record was somewhat unusual as fish remains are rarely recovered from deposits of Roman date.

An initial examination of the skeletal representation for cattle and caprovids showed a range of elements was present, although mandibles and metapodials were the most frequently occurring fragments. Phalanges were also numerous for cattle. These bones (i.e. head and terminal limb elements), which are typical of primary butchery waste, were not concentrated in any one deposit, however. No clear patterns were apparent from the pig remains, a mix of both meat-bearing and non-meat-bearing bones being noted.

Forty-two of the bones from this phase were measurable and there were 11 mandibles with teeth *in situ* of use for the provision of biometrical and age-at-death data.

4. DISCUSSION AND STATEMENT OF POTENTIAL

The samples from the early Roman Contexts 1134 and 1136 (giving spot dates of 71-100 AD) contained very few plant macrofossils. Most of the remains were of charcoal fire waste derived from both oak and non-oak taxa likely to have been growing locally. The presence of charred rhizome/tuber in Context 1134 may indicate that turves were being burnt (Hall 2003), either specifically as fuel or by incineration of old roofing material. The charred pea/vetch seed in Context 1136, may have derived from plants growing in the vicinity, and gathered by accident with firewood. Overall, the assemblages implied the proximity of local mixed woodland, including oak, and possibly a nearby area of heath/peat providing a source for turves (or perhaps importation from a more distant source). Other organic remains consisted of unidentified shell fragments from Context 1134 and a trace of ?part-mineralised bone from Context 1136 and were of no interpretative value.

The sediment samples from three slightly later Roman Phase 2 and 3 deposits, Contexts 1127, 1131 and 1116 (with spot dates of 120-160 AD), contained small assemblages of charred food plant remains, both from cultivated cereals, including barley and wheat, and wild-gathered hazel nuts; these are typical components of contexts associated with Roman activity in northern Britain (Huntley and Stallibrass 1995; Hall and Huntley 2007). The charred remains from arable weeds most likely represent contamination of processed cereals; these plants would have been growing amongst the cereal crops and been harvested along with the grain, with the remains persisting through the various stages of cereal processing and finally becoming accidentally charred during cooking.

The wild plant remains implied a variety of local habitats; principally, open and disturbed ground likely to be associated with habitation, but with areas of wet ground and possibly also of standing water. As previously, the assemblages indicated the proximity of local mixed woodland, including oak and ash, with hazel which would have been growing in clearings or along the woodland margins. Again, there may have been local (or more distant – see above) areas of heath/peat, providing a source of heather and heath-grass; these may have been used for roofing or bedding or been a constituent of turves used as fuel.

The sample from Context 1127 was the only one to yield any insect remains. There were three individual items recorded, two of which comprised complete (but compressed and distorted) abdomens and the third a joined head and thorax. These remains were tentatively identified as adult dipterous flies but, given the absence of any other waterlogged remains and no evidence that they were preserved by mineral replacement, were probably modern contaminants (most likely reflecting contamination of the sample rather than intrusion into the

deposit). There was also a little small mammal and amphibian bone from this sample which probably derived from just a few individuals (the remains perhaps reflecting natural deaths disturbed within this dump deposit). The presence of coal and cinder in this context, and traces of semi-vitrified fuel waste throughout, may indicate some craft activity on a domestic or industrial scale at this time.

Organic remains from the later Roman deposit, Context 1103 (spot dating late 2nd-early 3rd century AD), were restricted to fire waste, principally charcoal from mixed woodland taxa, again including oak, with a trace of cinder. The presence of semi-vitrified fuel waste may suggest some continuity of craft activity, and the implications for the character of the local woodland appear broadly unchanged.

Charred plant remains from Contexts 1116, 1127 and 1131 could provide suitable material for radiocarbon dating (via AMS), if required. However, artefactual spot dating is more readily available and almost certainly more precise for these deposits.

This excavation at Blossom Street yielded a moderate-sized assemblage of animal bone, which was recovered from deposits of Roman date (pottery spots dates ranged from the 1st century through to the early 4th century AD). Despite the generally good condition of the remains, there were a number of indications of possible reworked or residual material. These included the presence of a few very poorly preserved fragments in some of the deposits, several human bones (albeit only from one dump/levelling context, Context 1131) and bones of possible modern origin within two of the Phase 4 dumps/soils. However, preservation was mostly fairly uniform and dog gnawing was minimal in extent suggesting that the majority of the fragments were quickly incorporated into the deposits and not readily available to scavengers.

Material from Context 1109 was somewhat different in appearance from the rest of the bones recovered, but this may be the result of the conditions within the pit from which the bones came. Alternatively, these remains may be of a later date which could account for the fish bone identified from this deposit. Fish remains are typically rare from sites of Roman date.

Overall, domestic animals dominated the assemblage, with wild mammals being represented by only a few fragments of red deer and small mammal. Cattle and caprovids were the most common species, although cattle remains appear to be predominant by Phase 4. Many of the deposits contained material which had been heavily butchered, although this was more common for the cattle remains than for those of caprovids. Given the preponderance of bones of the head and lower limbs (metapodials and phalanges), much of the material was

probably primary butchery waste, with some refuse from secondary carcass preparation. Previous excavations at 28-40 Blossom Street (Carrott *et al.* 2000) produced a similar but smaller assemblage of bone, showing the same type of butchery practices. A comparable assemblage, including a couple of red deer antler fragments, was also recovered from the nearby Moss Street depot site (Jaques 2006). In this case, it was postulated that the antler was probably collected for craft activities, whereas the bones from Blossom Street are more likely to represent food waste.

5. RECOMMENDATIONS

No further study of the limited quantities of organic remains within the deposits sampled for this evaluation is warranted.

Although not a large assemblage, the vertebrate remains from Blossom Street, in conjunction with those from earlier excavation, would provide a useful dataset for the comparison of an assemblage from the city's periphery with those from within the walls. However, any issues concerning residuality would need to be addressed for any further study to be worthwhile.

5.1 RETENTION AND DISPOSAL

Unless required for purposes other than the study of the biological remains, the sediment samples reported here may be discarded. The remains recovered from the evaluation subsamples and the hand-collected vertebrate assemblage should be retained as part of the physical archive of the site.

5.2 ARCHIVE

All material is currently stored by Palaeoecology Research Services (Unit 4, National Industrial Estate, Bontoft Avenue, Kingston upon Hull), along with paper and electronic records pertaining to the work described here.

6. ACKNOWLEDGEMENTS

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Sewage Attenuation Tanks, 28-40 Blossom Street, York

. Phase				Phase 2				Phase 3	
				71-100 AD		120-160 AD		late 2 nd -early 3 rd century AD	
Spot dates				1134	1136	1127	1131	1116	1103
Context				51/T	50/T	45/T	47/T	39/T	31/T
Sample									
Context type				?early Roman soil	ditch backfill	?soil/dump deposit	dump/levelling deposit	charcoal-rich spread ?industrial	pit backfill
processed subsample size kg/litres				3/1.5	3/1.75	3/2	3/2	3/2	3/2
residue size (g)	dry			704	521	802	647	1221	1254
washover volume (ml)	dry			15	10	25	25	100	10
material remaining (litres)				~5	~5	~5	~5	~5	~5
material suitable for radiocarbon dating				no	no	yes	yes	yes	no
PLANT REMAINS									
Cultivated and associated plants									
Cereals									
<i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.	barley	caryopsis	ch	-	-	-	+	-	-
		caryopsis fragment	ch	-	-	+	-	-	-
<i>Triticum</i>	wheat	caryopsis	ch	-	-	-	-	++	-
		caryopsis fragment	ch	-	-	-	+	-	-
Cerealia indet	cereal	caryopsis	ch	-	-	-	-	+	-
		culm node	ch	-	-	-	-	+	-
Arable weed taxa									
<i>Bromus</i>	brome	caryopsis	ch	-	-	+	-	-	-
<i>Chenopodium album</i> L.	fat-hen	seed	ch	-	-	-	-	+	-
<i>Fallopia convolvulus</i> (L.) Á. Löve	black bindweed	nutlet fragment	ch	-	-	-	-	+	-
Wild plants									
Wetland taxa									
Cyperaceae	sedge family	nutlet	ch	-	-	-	-	+	-
Aquatic taxa									
<i>Menyanthes trifoliata</i> L.	bogbean		ch	-	-	-	-	+	-
Woodland (including scrub and hedgerow) taxa									
<i>Corylus avellana</i> L.	hazel	nut shell fragment	ch	-	-	-	+	-	-
<i>Sambucus nigra</i> L.	elder	fruit	w/l	-	-	-	-	+	-
Heath (including moorland and mountain) taxa									
<i>Danthonia decumbens</i> (L.) DC.	heath-grass	caryopsis	ch	-	-	-	+	-	-
Ruderal (wasteland and disturbed ground) taxa									
<i>Galeopsis speciosa</i> Mill./ <i>G. tetrahit</i> L.	hemp-nettle	nutlet	w/l	-	-	-	-	+	-
Polygonaceae	knotweed family	nutlet	ch	-	-	-	-	++	-

Sewage Attenuation Tanks, 28-40 Blossom Street, York

. Phase				Phase 2				Phase 3	
				71-100 AD		120-160 AD		late 2 nd -early 3 rd century AD	
Spot dates									
Context				1134	1136	1127	1131	1116	1103
Sample				51/T	50/T	45/T	47/T	39/T	31/T
Wide ecological niche taxa									
<i>Atriplex/Chenopodium</i>	orache/goosefoot	seed	ch	-	-	+	-	-	-
<i>Lathyrus/Vicia</i>	pea/vetch	seed	ch	-	+	-	-	-	-
Poaceae	grass family	caryopsis (>2 mm)	ch	-	-	-	+	-	-
<i>Prunella vulgaris</i> L.	selfheal	nutlet	ch	-	-	-	-	+	-
<i>Ranunculus</i> subg. <i>Ranunculus</i>	buttercup	achene	ch	-	-	-	-	+	-
Other waterlogged botanical remains									
heather stems			ch	-	-	+	+	-	-
rhizomes/tubers	undiff.		ch	+	-	-	-	-	-
Charcoal identifications									
charcoal (macroscopic)				+++	++	++++	++++	++++	++++
number of fragments >4 mm				+	-	-	-	-	-
number of fragments 2-4 mm				++	++	+++	+++	+++	+++
species present:									
<i>Fraxinus excelsior</i> L.	ash	stemwood		-	-	-	-	yes	-
<i>Quercus</i>	oak	stemwood		yes	yes	yes	yes	yes	yes
non-oak	undiff.	stemwood		yes	yes	yes	yes	yes	yes
non-oak	undiff.	roundwood		-	yes	-	yes	-	-
OTHER REMAINS									
Animal remains									
bone	indet. frag.			-	-	+	-	-	-
bone	frog/toad	long bone		-	-	+	-	-	-
bone	small mammal	femur		-	-	+	-	-	-
bone	small mammal	ulna		-	-	+	-	-	-
bone	small mammal	vertebra		-	-	+	-	-	-
bone (?part-mineralised)	indet. fragment			-	+	-	++	-	-
insect remains	?adult fly			-	-	+	-	-	-
mollusc shell (marine)	indet. fragment			+++	-	-	-	-	-
Artefactual and inorganic material									
coal				-	-	++	-	-	-
cinder				-	-	+	-	-	+
semi-vitrified fuel waste				-	-	++	++	++	++

Table 1 (above) Plant remains from the washovers, with notes on other biological and artefactual components. Key: '+' = present (1-3); '++' = occasional (4-20); '+++ = common (21-50); '++++' = abundant (51-200); '+++++' = super-abundant (201+); 'ch' = charred; 'w/l' = waterlogged

Species		Phase 2	Phase 3	Phase 4	Total
<i>Canis f. domestic</i>	dog	1	1	1	3
<i>Felis f. domestic</i>	cat	-	-	3	3
<i>Equus f. domestic</i>	horse	11	1	2	14
<i>Sus f. domestic</i>	pig	12	4	21	37
<i>Cervus elaphus L.</i>	red deer	2	1	-	3
cf. Cervidae	?deer	-	-	2	2
<i>Bos f. domestic</i>	cow	36	18	81	135
Caprovid	sheep/goat	43	18	34	95
<i>Capra f. domestic</i>	goat	1	-	1	2
<i>Anser sp.</i>	goose	-	-	1	1
<i>Gallus f. domestic</i>	chicken	2	-	2	4
<i>Homo sapiens</i>	human	2	-	-	2
Small mammal		1	-	-	1
Unidentified bird		4	1	6	11
Unidentified fish		-	-	1	1
Unidentified		151	94	331	576
Total		266	138	486	890

Table 2 Hand-collected vertebrate remains.

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