

ARCHAEOLOGICAL
SERVICES
DURHAM UNIVERSITY

on behalf of
Mr Brian Cowie

Land east of Milbank Close
Hart
Hartlepool
archaeological evaluation

report 4394
June 2017

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1. Summary

The project

- 1.1 This report presents the results of an archaeological evaluation conducted in advance of a proposed residential development on land east of Milbank Close, Hart, Hartlepool. The works comprised the excavation of four evaluation trenches and the commission of five radiocarbon dates from data already collected.
- 1.2 The works were commissioned by Mr Brian Cowie and conducted by Archaeological Services Durham University.

Results

- 1.3 Archaeological deposits comprising ditches, gullies, pits and post-holes cut into the natural subsoil were present in Trenches 3 and 4, in the southern half of the site. The location and nature of these features supports the findings of a previous archaeological evaluation on the site, i.e. that activity on the site relates to an early medieval settlement in the very near vicinity.
- 1.4 The remains of at least six individuals were identified in five probable burials in Trench 3. These consisted of four adults and two neonates. All the adult burials were aligned east/west. The remains found in the two phases of archaeological evaluation, along with their location, suggest that there was some form of separation between adult and non-adult burials. It is likely that further burials are located in the immediate vicinity of Trench 3, though none were discovered towards the south-west, suggesting the ditch features there marked a boundary to the potential cemetery. Charnel recovered from the subsoil indicated a certain level of disturbance from later agricultural activity.
- 1.5 In Trench 2, two features were identified which correspond to a potential entrance or gap in the large ditch/palaeochannel recorded on the geophysical survey and the initial archaeological evaluation. A coin was recovered from a palaeoenvironmental sample taken from the ditch/palaeochannel during the first phase of works. It was a brass coin, identified as a Northumbrian styca, struck in the name of Wigmund, Archbishop of York (c.837-c.850).
- 1.6 No archaeological deposits were recorded in Trench 1.
- 1.7 A small assemblage of finds, including human remains, animal bone, CBM, iron nails and industrial residue was recovered from the archaeological features. However, no datable finds, such as pottery sherds, were recovered.
- 1.8 The radiocarbon results, all taken from samples from the previous phase of works, returned dates of the late 7th century to 10th century for the human remains. A charred nutshell dated to the late 7th to 9th centuries, with waterlogged hemp seeds dating to the 10th to 12th centuries. These results support the findings of both phases of archaeological evaluation in indicating a settlement and related burial ground dating to the early medieval period.

Recommendations

- 1.9 Where development has the potential to impact on the archaeological resource, a programme of archaeological excavation is recommended in mitigation.

2. Project background

Location (Figure 1)

- 2.1 The site is located on land to the east of Milbank Close, Hart, Hartepool (NGR centre: NZ 47352 35030). The development site is roughly rectangular in plan and covers an area of approximately 0.85ha. A housing estate is located to the west of the site, whilst to the north and east is agricultural land. To the south is the former Front Street, with the A179 road beyond.

Development proposal

- 2.2 The proposal is for the construction of residential properties, with associated services and an access road.

Objective

- 2.3 The objective of the scheme of works was to assess the nature, extent and potential significance of any archaeological resource within the proposed development area, so that an informed decision may be made regarding the nature and scope of any further scheme of archaeological works that may be required in relation to the development.
- 2.4 The regional research framework (Petts & Gerrard 2006) contains an agenda for archaeological research in the region, which is incorporated into regional planning policy implementation with respect to archaeology. In this instance, the scheme of works was designed to address agenda items:
- Early Medieval
 - EMii Settlement
 - EMvi Christianity
 - EMvii Death and Burial

Specification

- 2.5 The works have been undertaken in accordance with a specification provided by Tees Archaeology (Appendix 3) and a Written Scheme of Investigation provided by Archaeological Services Durham University (reference DS16.561rev) and approved by the planning authority. The original specification required four radiocarbon dates to be commissioned; this has now been increased to five.

Dates

- 2.6 Fieldwork was undertaken between 13th and 15th February 2017. This report was prepared for June 2017.

Personnel

- 2.7 Fieldwork was conducted by Hilary Andrews and Rebekah Watson (supervisor). This report was prepared by Rebekah Watson, with illustrations by David Graham. Specialist reporting was conducted by Dr C Barclay (coins), Dr A Caffell (human remains), Dr L Gidney (animal bone) and J Jones (other artefacts). The Project Manager was Daniel Still.

Archive/OASIS

- 2.8 The site code is **HMC17**, for **Hart Milbank Close 2017**. The archive is currently held by Archaeological Services Durham University and will be transferred to Tees Archaeology in due course. Archaeological Services Durham University is registered

with the **Online Access** to the Index of archaeological investigations project (**OASIS**). The OASIS ID number for this project is **archaeol3-277292**.

3. Landuse, topography and geology

- 3.1 At the time of this assessment, the proposed development area comprised a single field of rough grassland with vegetation along the northern boundary.
- 3.2 The proposed development area was undulating, sloping very gently down to a stream at the northern edge, with a mean elevation of approximately 66m OD.
- 3.3 The underlying solid geology of the area comprises Roker Formation (dolostone) sedimentary rocks, which are overlain by Devensian glaciolacustrine and glaciofluvial deposits and alluvium (www.bgs.ac.uk). The soil is characterised as 'Soilscape 18: Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils' (www.landis.org.uk/soilscapes).

4. Historical and archaeological background

Previous archaeological works

- 4.1 Prior to this phase of works an archaeological desk-based assessment was undertaken in conjunction with a geophysical survey of the proposed development area (Archaeological Services 2015a). This was followed up by the excavation of six evaluation trenches, which identified a series of ditches and gullies, a large ditch or palaeochannel and five non-adult inhumations. Assessment of the finds and palaeoenvironmental samples, as well as the burial orientation and lack of artefacts from the graves, indicated an early medieval date (Archaeological Services 2015b).
- 4.2 Building work at several properties in the historic core of the village has been subject to archaeological monitoring. Archaeological investigations at Burn's Close, on the western edge of the village, identified remains of wooden structures and boundary features (Archaeological Services 1995 & 1996). The presence of flint artefacts and the absence of medieval pottery indicated a prehistoric or Anglo-Saxon date for these features. Geophysical survey of Kirkfield (Archaeological Services 2012), to the south of the proposed development area, identified ditches and evidence of ploughing, land drains and recent services. An archaeological evaluation to the south of the site identified the remains of a small chapel or church, dating to before the 12th century, as well as fragmentary remains of burials associated with the structure (Welsh 2016). Geophysical surveys have also been conducted around St Mary Magdalene Church in the village (Archaeological Services 2014); the majority of anomalies detected there corresponded to known or recent features within or around the churchyard.

The prehistoric period (up to AD 70)

- 4.3 Mesolithic flint tools have been found near Crimdon Dene, along the coast to the north. Flint tools have also been found in the fields to the west and south of Hart and in the field immediately to the east of the proposed development site. A Neolithic axe was found in fields to the north-east of Hart. Bronze Age pottery was found during excavations to the north-west of the site, together with later remains.

- 4.4 An Iron Age beehive quern has been built into the wall of White Cottage and may indicate Iron Age occupation in the area. A further indication of late prehistoric settlement in the wider area has come from the analysis of peat deposits at Thorpe Bulmer. This site is located some 2km to the north-west of Hart, and contained cultivated hemp seeds from pre-Roman layers.
- 4.5 Aerial photographs of the area around Hart are indicative of sites of possible prehistoric date. A large circular feature (ring-ditch) has been recorded near Hart Bypass, and at Elwick, to the south-west, a sub-rectangular earthwork was noted. Similar rectangular cropmarks have also been recorded at Whelly Hill, to the south-west of Hart.
- 4.6 There is no direct evidence of prehistoric activity in the proposed development area. However, there is evidence that the surrounding area was exploited in prehistory. A resource relating to this exploitation may therefore survive within the site.

The Roman period (AD 70 to 5th century)

- 4.7 There is no evidence of Roman activity in the vicinity of Hart but there is evidence that native settlement in the area continued into the Roman period. A Romano-British brooch was found to the east of Hart and settlements were found during excavations at Catcote, on the western edge of Hartlepool, and at Greatham Creek, just over 7km to the south. A couple of Romano-British burials were found at Lancaster Road, Hartlepool, and a Roman coin has been recorded in the town.

The early medieval period (5th century to 1066)

- 4.8 Hart was the administrative centre of a large estate extending from Castle Eden Dene in the north to the River Tees in the south. The estate probably belonged to the Northumbrian royal family and in the mid-7th century part of it was used to establish the Anglo-Saxon monastery of Hilde at *Heruteu* (Daniels 2012). The first reference to Hart occurred in a charter of AD 830-845 that refers to '*Heorternesse*' – a name derived from *heorot* (Old English for hart, i.e. a deer) and *gehernes* meaning an administrative area. The name of nearby Hartlepool was given to the town developing around the harbour that served Hart, thus indicating the significance of Hart in the early medieval period.
- 4.9 Secondary settlements grew up around Hart manor, including Nelson, North Hart, High and Low Throston, Naisberry, Tunstall and Thorpe Bulmer. The development site is within an area recorded as Kirkfield, suggesting that it was either close to the location of an early church or was land owned by the church. Fragments of three badly damaged Anglo-Saxon brooches have been found in fields immediately to the east of the development area. Two silver coins (one of mid-8th-century date and one of mid-9th-century date) and a pin of 7th to 11th-century date have also been found in the same area, together with a medieval strap end, brooch, pin and architectural fragments. A 10th-century crosshead was found in Kirkfield, to the south of the development area, together with medieval pottery.
- 4.10 St Mary Magdalene Church may have originated as a wooden structure in the late 7th century and contains fragments of Anglo-Saxon sculpture together with early medieval grave slabs. Other fragments have also been found nearby. Saxon remains have also been found in excavations to the west of the village.

4.11 Previous excavations on the site (Archaeological Services 2015b) identified a series of ditches and gullies. The faunal assemblage and data from the palaeoenvironmental assessment, in particular the presence of charred seaweed and cereal grains, indicated that the features were likely to date from the early medieval period and suggested a settlement of this period in the very near vicinity. A large ditch was recorded in one of the trenches, which may either be a large cut drainage feature or natural watercourse that has been diverted in antiquity. The palaeoenvironmental data recovered from the basal deposits indicated that the feature was permanently waterlogged resulting in marsh-like conditions. These conditions resulted in the anoxic preservation of faunal and palaeoenvironmental remains of probable early medieval date. Of particular interest was the identification of hemp seeds within the samples, likely to be indicative of retting, the processing of the hemp fibres, prior to the feature being backfilled and sealed with clay.

4.12 Also during these works the remains of five non-adult humans were identified in one part of the site. Iron nails within the grave fills indicated that some of the individuals were buried in coffins. The east/west orientation of one grave, the lack of recovered artefacts, and the presence of quartz pebbles within the grave fills are indicative of an early medieval date (*ibid*).

The medieval period (1067-1540)

4.13 To the north of St Mary Magdalene Church are two medieval fish ponds and an earthwork that was part of the manorial complex. The churchyard, grave slab and a cross fragment show continued use of the church throughout the medieval period.

4.14 A medieval lime kiln has been identified in the village. Other medieval remains found in the vicinity include a coin, a ring and a spindle whorl. A number of other finds and features of similar date have been found in fields around Hart.

4.15 From the 14th century the land at Hart was held by the Clifford family. Fields around the village formed part of the medieval agricultural system of common fields and it is likely that the development area was part of a larger open field to the east of the village. A medieval earthwork was noted to the west of the development site and excavations revealed medieval remains. A windmill was recorded at Hart in 1314 (Page 1928) but the present mill dates from the 19th century.

The post-medieval period (1541 to 1899)

4.16 Saxton's map of County Durham in 1576 shows the church at 'Harte' and the much larger settlement of Hartlepool on the coast to the east. The smithy in Hart and Home Farm both date from the 17th century, when the village was no longer such a significant settlement. A 17th-century sword has been found to the west of the village. The population would have been engaged in agriculture and the development site was probably pasture or agricultural land at this time. On the alarm of a Dutch invasion in 1666 a beacon was erected on the hill to the south of Hart (Page 1928).

4.17 Armstrong's map of County Durham in 1768 shows the topography of the area with the village of Hart stretching along the road leading to Hartlepool and around the junction with the road leading south to Dalton Piercy.

- 4.18 A plan of the manor of Harte, drawn up in 1770, shows the proposed development site within an area to be sold as Lot 4, when the manor was broken up. It formed part of a piece of land of 5 acres and 2 rods marked Garth, to the east of the medieval village. To the east of the beck were Fenns [*sic*] and to the north New Closes. A number of properties in and around Hart date to the 18th century and indicate that it continued to be a thriving settlement.
- 4.19 By the early 19th century the settlement had grown. Greenwood's map of County Durham in 1820 shows the village clustered around the crossroads with the church to the north of the beck. Many of the houses in the village date from the 19th century. This map also shows the windmill on a hill to the south of the village. The development site appears to be agricultural land at this date. Increasing industrialisation in the surrounding area included mineral extraction with limestone quarries, sand, gravel and clay pits. In 1832 a mineral railway was constructed which passed through the parish of Hart, to the north-east of the village, leading from mines in the north to Hartlepool on the coast.
- 4.20 The Tithe plan of Hart in 1841 shows the development site as part of Brewery Farm land which was farmed by Robert and William Stephenson. There was little development in the village in the later part of the 19th century and the 1st and 2nd edition Ordnance Survey maps of Hart show a similar layout of houses along the road with the development site remaining as agricultural land.

The modern period (1900 to present)

- 4.21 The village of Hart and the surrounding area remained largely unchanged through the first half of the 20th century, although Hartlepool was expanding rapidly at this time. During the latter part of the century a number of housing estates were built in and around the historic core of Hart (Horsley 2009). The proposed development was pasture during the late 20th century and into the early 21st century.

5. The evaluation trenches

Introduction

- 5.1 Four evaluation trenches were excavated across the proposed development area (Figure 2), positioned to determine the extent of activity on the site, to further evaluate the large ditch/palaeochannel found in the previous phase of works and to identify if the inhumations recorded at that time were part of a larger cemetery. The trenches were dug using a machine equipped with a toothless ditching bucket under constant archaeological supervision. Trench plans and sections are shown on Figure 3. Context data is summarised in Table 1.

Trench 1 (Figure 4)

- 5.2 This trench was 15m long and was aligned roughly east/west. It was located towards the northern end of the site in order to establish if settlement activity continued beyond the ditch/palaeochannel.
- 5.3 Natural subsoil, a red-brown sandy clay [3], was identified between 0.25m and 0.3m below the ground surface. Immediately above this was a brown silty clay topsoil [1: 0.25m to 0.3m deep]. No archaeological features were identified and no artefacts recovered.

Trench 2 (Figure 5)

- 5.4 This trench measured 15m long and was aligned north-east/south-west. It was located near the centre of the eastern edge of the site, targeting a possible entrance through the large ditch/palaeochannel identified on the geophysical survey (Archaeological Services 2015a).
- 5.5 Natural subsoil, a red-brown sandy clay [25], was identified between 0.3m and 0.4m below the ground surface. Cutting this at the south-west end of the trench was a large feature [F24: 16m+ by 1.5m+], filled with a brown sandy clay gravel [23]. At the north-east end of the trench, the natural subsoil was cut by another similar feature [F27: 8m+ by 1.5m+], again filled with a brown sandy clay gravel [26]. These features are part of the large ditch/palaeochannel identified in the previous phase of works and reflect the findings of the geophysical survey. No further excavation of the features was carried out. Overlying the whole trench was a layer of brown silty loam topsoil [1: 0.3m to 0.4m deep]. No artefacts were recovered.

Trench 3 (Figure 6)

- 5.6 Trench 3 was 40m long and was aligned north-west/south-east. It was located to the south-west of Trench 2, in order to determine the extent of the potential inhumation cemetery identified in the previous phase of works.
- 5.7 Natural subsoil was mixed. A brown sandy gravel [3] was identified across much of the trench, at around 0.25m to 0.4m below the ground surface, changing to a reddish-brown silty clay [3] at the south-east end of the trench, between 0.4m and 0.6m below the ground surface. The southern edge of the large ditch/palaeochannel [F24] was identified at the north-western end of the trench, filled by a brown sandy gravel [23], though this was not excavated (Figure 6). Cutting the natural subsoil near the centre of the trench was a post-hole [F33: 0.35m by 0.15m+, 80mm deep], filled by a grey-brown silty clay [32: 80mm deep]. This feature was beneath a linear ditch [F31: 1.75m+ by 0.8m, 0.16m deep], aligned east/west and filled by a grey-brown silty clay [30: 0.16m deep] containing frequent gravel and occasional fragments of animal bone (Figure 7). The post-hole [F33] became evident on excavation of the ditch [F31]. Approximately 3m to the south-east of ditch [F31], another linear ditch [F29: 1.6m+ by 1.0m, 0.2m deep] cut the natural subsoil, aligned north/south. This was filled by a brown silty clay [28: 0.2m deep] containing animal bone (Figure 8). Around 1.5m south-east of the north/south ditch [F29], a small pit [F35: 0.42m by 0.3m, 0.19m deep] was identified, cutting the natural subsoil. This was filled by a brown silty clay [34: 0.19m deep], from which CBM and iron were recovered (Figure 9).
- 5.8 Five probable inhumations containing at least six skeletons were identified in the centre of the trench: [F14, SK1], [F16, SK2], [F18, SK3], [F20, SK6] and [F22, SK4 and SK5]. Of these, SK1, SK2, SK3 and SK6 appeared to be adult remains; SK3 was the most visible on the ground surface (Figure 10). SK4 and SK5 were the remains of two neonates buried in the same grave [F22] (Figure 11). All four adult burials ([F14], [F16], [F18] and [F20]) were aligned east/west. The burial containing the neonates [F22: 0.95m+ by 0.7m] was an oval pit located in the vicinity of the previous trench, approximately 6.3m north-west of the adult inhumations, suggesting some separation between adults and non-adults within the cemetery. It is possible that the features recorded to the south-east of the trench (see 5.7) mark a boundary for

the cemetery. Further skeletal data is given in Table 2. The burials were not excavated and no artefacts were recovered from them.

- 5.9 Above the natural subsoil and covering all the features and burials in the trench was a layer of grey-brown sandy clay [12: 0.1m to 0.4m deep]. This deposit was very gravelly and contained animal bone and industrial residues. Human bone was also recovered from the deposit; this is likely to be charnel from disturbance of the inhumations due to ploughing. Immediately above this was a black-brown silty loam topsoil [1: 0.15m to 0.2m deep].

Trench 4 (Figure 12)

- 5.10 This trench measured 15m long, and was aligned north-west/south-east. It was located in the south-west corner of the proposed development area to establish the extent of settlement activity on the site.
- 5.11 Natural subsoil, a yellow-brown sandy clay [3], was identified at a depth of 0.5m to 0.6m below the ground surface. At the south-east end of the trench, this was cut by a shallow gully terminus [F7: 1.1m+ by 0.3m, 0.16m deep], aligned east/west and filled by a grey silty clay [6], containing fragments of animal bone. This was cut on the southern edge by another linear gully [F5: 3.0m+ by 0.45m, 0.2m deep]. This feature was also oriented east/west and was filled by a grey silty clay [4: 0.2m deep] (Figure 13). Animal bone and a possible worked stone were recovered from the fill.
- 5.12 In the centre of the trench, the natural subsoil was cut by a small post-setting [F9: 0.3m by 0.28m, 60mm deep], filled with a grey silty clay [8: 60mm deep] (Figure 14). No artefacts were recovered from this feature. Slightly to the south-west of this feature was a small circular pit [F11: 0.6m by 0.55m, 0.15m deep], filled by a brownish-grey silty clay [10: 0.15m deep] (Figure 15). This deposit contained wood, though this appeared to be part of a modern fence post; it is likely that these two features are modern and may have been cut through the subsoil.
- 5.13 Two field drains, running east/west across the trench were also identified, cutting the natural subsoil. Above these was a layer of brown silty clay [2: 0.2m to 0.3m deep]. Immediately above this was a black-brown silty loam topsoil [1: 0.3m deep].

6. The artefacts

Animal bone assessment

Results

- 6.1 Animal bone fragments were hand-recovered from five contexts, from which samples were also taken. Contexts [4 and 6] were gully fills, contexts [28 and 30] were fills of linear ditches, possibly the cemetery boundary, and context [12] was subsoil. The bones are well preserved, with fish bone surviving. However, the soil conditions have resulted in fresh breaks during the excavation process.
- 6.2 Fragments were counted as identifiable if they encompassed a non-replicable anatomical 'zone'. The one exception was a cattle scapula from context [4], where the 'zone' had clearly been present in the ground but was lost on excavation. Rib and vertebra fragments were noted as cattle or sheep size.

- 6.3 The species present are listed in Table 3. Context [12] produced the most identifiable fragments and greatest variety of species. Cattle or cattle size fragments were recovered from every context, suggesting size of fragment may have been a factor in recovery in these soil conditions. Sheep or sheep size elements were present in four contexts and those of pig in three contexts. A maxilla from a large gadid fish was found in context [12] and a large and delicate bone (hyomandibular scapula) from the head of a large gadid fish was found in context [28].
- 6.4 Most of the epiphyses on the limb bones of both cattle and sheep are fused, while the vertebral epiphyses are unfused. This pattern is suggestive of the slaughter of young adult animals. A sheep mandibular molar with little wear (Tooth Wear Stage c, after Grant 1982) and a mandible from context [28] with a premolar at an early stage of wear would also fit this pattern. Younger cattle are indicated in context [12] by an unfused femoral head and a smaller femur shaft from a younger animal. An aged animal may be indicated by a cattle mandible with more advanced wear on molars 1 and 2 (Tooth Wear Stages k and g). The pig molar 3 from context [6] shows medium wear, suggesting survival beyond the eruption of this tooth, after 17 months old. The pig mandible from context [12] is from an adult with advanced tooth wear (premolar 4 TWS e, molar TWS m, molar 2 TWS h) and molar 3 erupted, though the crown has been lost in excavation.
- 6.5 Horse is represented in context [12]. The presence of dog is indicated by gnawing marks on bones in contexts [12 and 28]. The only clear butchery chop mark was also seen in context [28]. A complete cattle metacarpal was recovered in fragments from context [12]. The distal lateral condyle has an unusual wear facet on the posterior aspect. This is neither a butchery mark nor the joint damage associated with osteoarthritis. Use as an unknown class of artefact would appear to be indicated.
- 6.6 Bone fragments were found in the residues from all contexts but were mostly tiny unidentifiable scraps. The exceptions were two pig premolars in context [12], from the mandible in the hand-recovered finds, and a bone from a small species of fish in context [30].

Human bone assessment

Introduction

- 6.7 These remains, recovered during exploratory excavations, are likely to date to the early medieval period. Previous excavation at the site in 2015 recovered the partial remains of five non-adults.

Material

- 6.8 A small quantity of disarticulated human bone fragments was recovered from context [12].

Methods

- 6.9 The disarticulated remains were assessed following English Heritage guidelines (Mays *et al.* 2002). A count was made of the number of fragments present, and the surface preservation of the remains was noted (following McKinley 2004) along with the amount of fragmentation. A general observation was made on the potential of the remains to provide more information on age or sex, or pathological conditions.

Assessment of Condition

- 6.10 In total there were eight fragments of disarticulated bone, with two cranial vault fragments joining together. The surface preservation ranged from relatively good (around Grade 2) in four fragments, to poor/very poor (Grade 4/5) in the two cranial vault fragments. Most fragments represented 10-30% of the original bone. The bones present included adult and probable adult bones as well as a non-adult bone. No obvious pathological conditions were noted.

Potential and Recommendations

- 6.11 Disarticulated remains have limited potential for further analysis, but data from the disarticulated remains can provide some basic information that may be relevant to interpreting the site, and they contribute towards calculating the minimum number of individuals present. There would be limited value in further analysis of these remains on their own, but since other human remains have been recovered from this site during previous excavations it would be beneficial to include these with any further analysis of those remains.
- 6.12 Any further analysis of the disarticulated remains should follow current osteological standards (e.g. Buikstra and Ubelaker 1994; Cox and Mays 2000) and the data from skeletal remains recovered during both phases of excavation should be considered together.

Stone object assessment

Results

- 6.13 Gully fill context [4] produced a small, smooth round to oval black pebble 39mm diam max. Its faces are almost flat and the pebble is 9-12mm thick. Microscopic examination suggests it is made of a jet-like, laminated material such as lignite or possibly coal. The shape of the pebble has been produced naturally, probably through the action of water, but the context of its discovery suggests that it may have been deliberately collected, curated and also possibly deposited.
- 6.14 The object cannot be dated by itself, but the inclusion of white stones in burials from the Neolithic onwards is well attested (Tinti 2005, 139), with possible examples of this practice identified in previous excavations at this site (Archaeological Services 2015b). Objects (usually carved) of jet and amber are also often found in early medieval burials (Gilchrist 2008, 139), and the possibility that this jet-like pebble had some similar special significance should not be excluded on a site where human remains have been recovered.

Recommendation

- 6.15 No further work is recommended.

Building materials assessment

Results

- 6.16 A piece of ceramic building material recovered from pit fill [34] may be a fragment of Roman *tegula*. It is 20mm thick and 'L' shaped, the flange standing to c40mm height. The underside is sanded. The piece is damaged and quite poorly preserved, with few original surfaces surviving. However, its measurable dimensions and form are consistent with an identification as a Roman roof tile fragment.

Recommendation

- 6.17 No further work is recommended.

Iron objects assessment

Results

- 6.18 Context [34] produced two highly corroded nail shanks, c120 and 80mm long. As far as can be ascertained, these are hand wrought. While X-radiography revealed the points to be intact, both heads are lost. Probably of pre-industrial date.

Recommendation

- 6.19 No further work is recommended.

Copper alloy objects assessment

Results

- 6.20 A small block of soil with tiny fragments of totally corroded copper alloy came from context [12]. X-radiography unfortunately failed to resolve any shape or form to this fragmentary possible object, which must remain unidentified and undateable.

Recommendation

- 6.21 No further work is recommended.

Industrial residues assessment

Results

- 6.22 Recently broken fragments (435g wt) from a piece of ironworking residue were recovered from subsoil context [12]. Two of the fragments join to show that the original residue was likely circular, c140mm diam, with a surviving thickness of 40mm max. The profile of the fragments is plano-convex in shape and the interior is dark and fairly dense with little vesicularity.

- 6.23 This is probably part of a smithing hearth base. During smithing, the smelted iron bloom is kept at a high temperature to facilitate slag expulsion, with the expelled slag forming drips and small pools around the smithing hearth. These may consolidate into irregularly shaped lumps or form into the characteristic shapes of smithing hearth bottoms, as seen here. Accumulations of smithing slag and hearth bottoms would be periodically cleared out of the smithing hearth and disposed of.

- 6.24 This is a very small quantity of slag and may represent residue from a single episode of smithing. Such fragmentary material cannot be easily dated, but it is consistent with the waste produced by small-scale smithing from the pre-Roman to the later medieval period.

Recommendation

- 6.25 No further work is recommended.

Coin analysis

Introduction

- 6.26 A coin was recovered from a palaeoenvironmental sample taken from the large ditch/palaeochannel during the first phase of archaeological evaluation. However, this sample was processed after the original report had been produced, so the information is included below. The contexts discussed are those recorded during the

earlier works, but it is likely that the feature mentioned below ([F4]) is the same as that identified in Trenches 2 and 3 and recorded as [F24] in this phase of works.

Results

- 6.27 A coin came from the sample from context [7], the primary, waterlogged fill of a probable palaeochannel [F4]. The coin is just over 5mm in diameter and EDXRF analysis shows that it is made of brass. It is highly corroded with some damage to the edge and has been (at least) double-struck. Enough remains legible, however, to identify it as a Northumbrian styca, struck in the name of Wigmund, Archbishop of York (c.837-c.850) (Figures 16 and 17).

Conservation assessment

Results

- 6.28 Iron objects from context [34] and copper alloy fragments from context [12] were X-radiographed in plan and side view. This revealed the iron to be nail fragments. No details of the remains of the highly corroded copper alloy object could be revealed.

Storage

- 6.29 The material should be stored in an airtight container at a stable temperature and below 20% RH (relative humidity), to inhibit further corrosion. The RH should be controlled by active silica gel, which is regularly monitored and regenerated as necessary.

Discussion

- 6.30 No datable finds, such as pottery sherds, were recovered. The human remains have been radiocarbon dated to the late 7th-10th centuries AD. The large gadid bones in contexts [12 and 28] are unlikely to be early medieval in the sense of post-Roman, but would fit with early medieval as post 1066. The lack of settlement and dating evidence limits the interpretation of these finds. However, the good state of preservation and survival of bone in quantity in the subsoil, context [12], suggests that there is potential for any future excavation to retrieve an interesting assemblage. In particular, further examples of the wear facet on the cattle metacarpal would help elucidate the function of this bone, as was shown for another class of wear facets on metapodials (Gidney 2016).

Recommendation

- 6.31 While no further work on the present assemblage is recommended, it should be retained for integration with finds from any further archaeological investigation of this site.

7. The palaeoenvironmental evidence

- 7.1 Environmental samples were taken from all the features excavated in Trenches 3 and 4, but are not being processed at this time.

8. The radiocarbon dates

- 8.1 Five radiocarbon dates were commissioned, all from data recovered in the previous phase of works. One of these dates was taken from waterlogged hemp seeds recovered from the palaeoenvironmental samples taken from the large ditch/palaeochannel, one from a charred nutshell from a ditch fill associated with

occupation activity on the site and the other three from the human remains. The results are summarised in Table 4.

- 8.2 The waterlogged hemp dated to the 10th to 12th centuries, with the nutshell providing a date between the late 7th and late 9th centuries. The three samples taken from the human remains dated from the late 7th to 10th centuries.
- 8.3 These results support the findings of both phases of archaeological evaluation in indicating a settlement and related burial ground dating to the early medieval period.

9. The archaeological resource

- 9.1 Archaeological deposits comprising ditches, gullies, pits and post-holes cut into the natural subsoil were present in Trenches 3 and 4, in the southern half of the site. The location and nature of these features supports the findings of the previous archaeological evaluation on the site (Archaeological Services 2015b), i.e. that activity on the site relates to an early medieval settlement in the very near vicinity.
- 9.2 The remains of at least six individuals were identified in five probable burials in Trench 3. These consisted of four adults and two neonates. All the adult burials were aligned east/west. The remains found in the two phases of archaeological evaluation, along with their location, suggest that there was some form of separation between adult and non-adult burials. It is likely that further burials are located in the immediate vicinity of Trench 3, though none were discovered towards the south-west, suggesting the ditch features there marked a boundary to the potential cemetery. Charnel recovered from the subsoil indicates a certain level of disturbance from later agricultural activity.
- 9.3 In Trench 2, two features were identified which correspond to a potential entrance or gap in the large ditch recorded on the geophysical survey and the initial archaeological evaluation. A coin was recovered from a palaeoenvironmental sample taken from the ditch during the first phase of works. It was a brass coin, identified as a Northumbrian styca, struck in the name of Wigmund, Archbishop of York (c.837-c.850).
- 9.4 No archaeological deposits were recorded in Trench 1.
- 9.5 A small assemblage of finds, including human remains, animal bone, CBM, iron nails and industrial residue was recovered from the archaeological features. However, no datable finds, such as pottery sherds, were recovered.
- 9.6 The radiocarbon results, all taken from samples from the previous phase of works, returned dates of the late 7th century to 10th century for the human remains. A charred nutshell dated to the late 7th to 9th centuries, with waterlogged hemp seeds dating to the 10th to 12th centuries. These results support the findings of both phases of archaeological evaluation in indicating a settlement and related burial ground dating to the early medieval period.
- 9.7 The regional research framework (Petts & Gerrard 2006) contains an agenda for archaeological research in the region, which is incorporated into regional planning

policy implementation with respect to archaeology. In this instance, the archaeological resource addresses Agenda Items:

- Early Medieval
 - EMii Settlement
 - EMvi Christianity
 - EMvii Death and Burial

Developments in and around modern rural villages within the region have been highlighted for the high probability of surviving early medieval occupation and settlements of the time identified during these works. The excavation of well-preserved skeletal assemblages of the type identified on this site, and the precise dating and analysis of such assemblages, has been stated as a key research aim for the region relating not only to issues of ethnicity and cultural identity, but also to wider debates on migration and population movement in the early medieval period (*ibid*).

10. Impact assessment

- 10.1 Development of the site has the potential to remove or truncate a significant archaeological resource through groundworks.

11. Recommendations

- 11.1 Where development has the potential to impact on the archaeological resource, a programme of archaeological excavation is recommended in mitigation.

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Appendix 1: Data tables

Table 1: Context data

The • symbols in the columns at the right indicate the presence of artefacts of the following types: H human bone, B animal bone, M metals, W wood, I industrial residues, C ceramic building material.

No	Area	Description	H	B	M	W	I	C
1	1-4	Topsoil						
2	4	Subsoil						
3	1, 3 & 4	Natural subsoil						
4	4	Fill of gully [F5]		•				
F5	4	Cut of gully						
6	4	Filly of gully terminus [F7]		•				
F7	4	Cut of gully terminus						
8	4	Fill of post-setting [F9]						
F9	4	Cut of post-setting						
10	4	Fill of pit [F11]				•		
F11	4	Cut of pit						
12	3	Subsoil	•	•			•	
13	3	Fill of grave [F14]	•					
F14	3	Cut of grave						
15	3	Fill of grave [F16]	•					
F16	3	Cut of grave						
17	3	Fill of grave [F18]	•					
F18	3	Cut of grave						
19	3	Fill of grave [F20]	•					
F20	3	Cut of grave						
21	3	Fill of grave [F22]	•					
F22	3	Cut of grave						
23	2, 3	Fill of ditch/palaeochannel [F24]						
F24	2, 3	Cut of ditch/palaeochannel						
25	2	Natural subsoil						
26	2	Fill of ditch/palaeochannel [F27]						
F27	2	Cut of ditch/palaeochannel						
28	3	Fill of ditch [F29]		•				
F29	3	Cut of ditch						
30	3	Fill of ditch [F31]		•				
F31	3	Cut of ditch						
32	3	Fill of post-hole [F33]						
F33	3	Cut of post-hole						
34	3	Fill of pit [F35]			•			•
F35	3	Cut of pit						

Table 2: Skeletal data

Skeleton	Feature	Bones visible on surface
1	F14	Skull
2	F16	Skull, arms
3	F18	Skull, L ribs, pelvis, L leg
4	F22	Skull, limb fragments (neonate)
5	F22	Rib, limb fragments (neonate)
6	F20	Ribs

Table 3: Fragment counts for the species present

Contexts	4	6	12	28	30
Hand Recovered					
Cattle	1	1	6	1	
Cattle size		1		2	1
Sheep/goat		3	1	1	
Sheep size	1				
Pig		1	1	1	
Horse			1		
Fish			1	1	
Residues					
Pig			2		
Fish					1

Table 4: Summary of radiocarbon dating

Context	Sample	Laboratory code	Material	$\delta^{13}\text{C}$ ‰	$\delta^{15}\text{N}$ ‰	C/N ratio	Radiocarbon Age BP	Calibrated date 95.4% probability
7	2	SUERC-73706 GU44078	Waterlogged seeds: Cannabis sativa	-28.4	-	-	1010 ± 33	971 (78.0%) 1052 cal AD 1082 (17.4%) 1152 cal AD
16	5	SUERC-73707 GU44079	Charred nutshell: Corylus avellana	-25.0	-	-	1209 ± 33	692 (14.1%) 748 cal AD 762 (81.3%) 893 cal AD
SK1	SK1	SUERC-73708 GU44080	Unburnt bone – humerus: human	-20.1	11.8	2.9	1147 ± 33	776 (95.4%) 975 cal AD
SK3	SK3	SUERC-73709 GU44081	Unburnt bone – left humerus: human	-21.1	9.9	3.3	1187 ± 33	720 (3.3%) 741 cal AD 766 (86.0%) 901 cal AD 920 (6.1%) 953 cal AD
SK4	SK4	SUERC-73713 GU44082	Unburnt bone – right ilium: human	-21.0	11.9	2.9	1218 ± 33	689 (20.0%) 750 cal AD 760 (74.5%) 890 cal AD

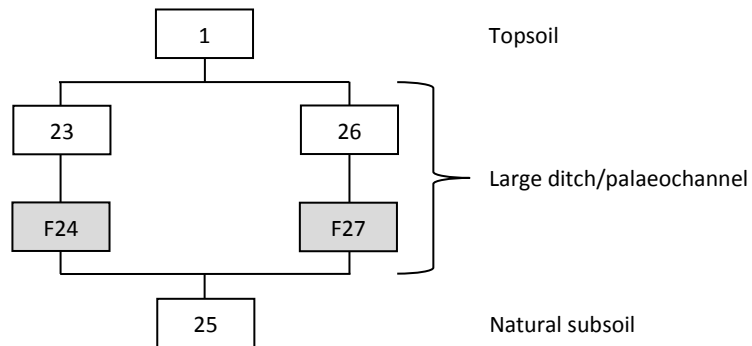
[The calibrated age ranges are determined using OxCal4.2.4 (Bronk Ramsey 2009); IntCal13 curve (Reimer *et al.* 2013)]

Appendix 2: Stratigraphic matrices

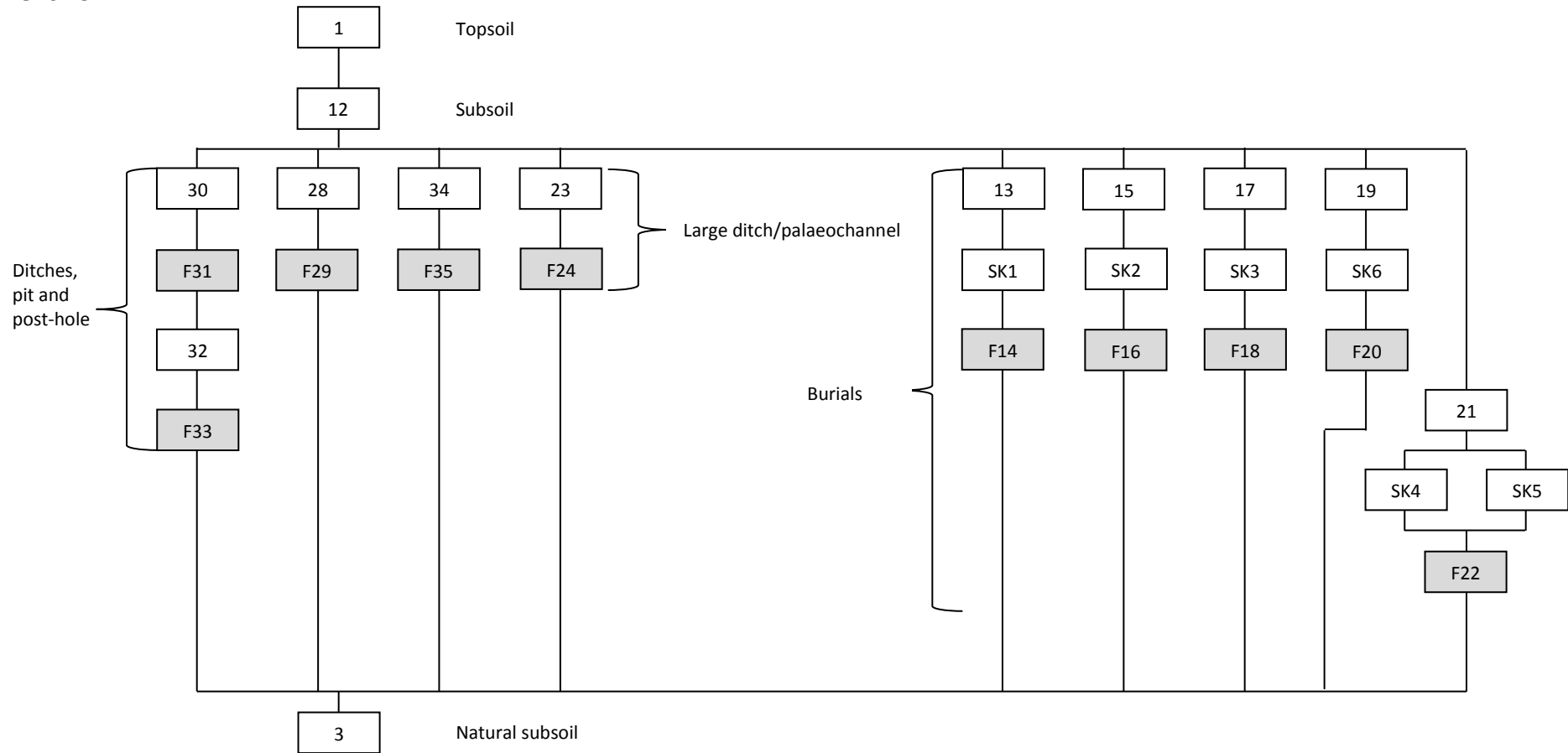
Trench 1



Trench 2



Trench 3



Trench 4

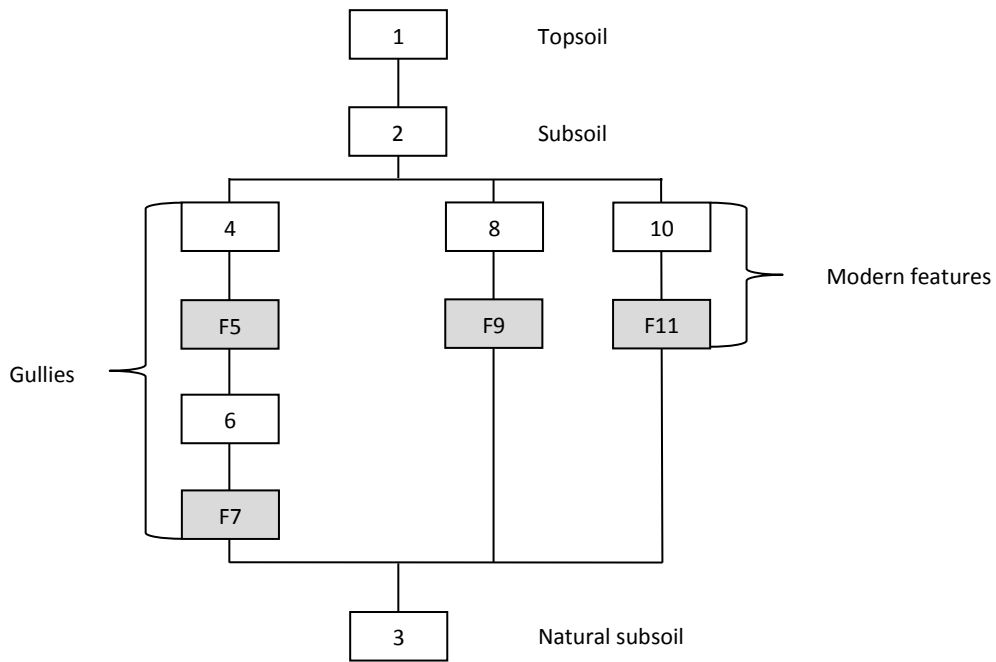


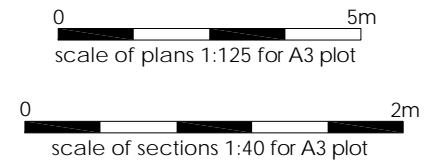
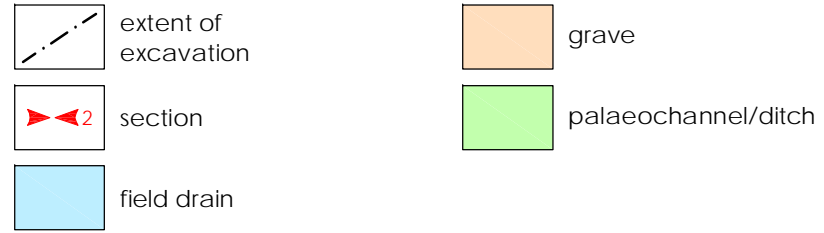
Figure 1: Site location

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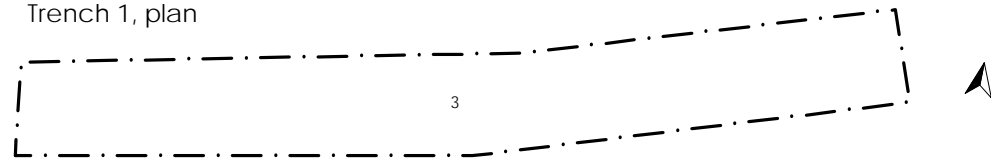


 site boundary

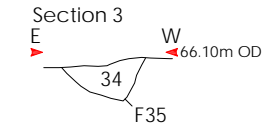
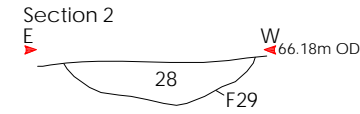
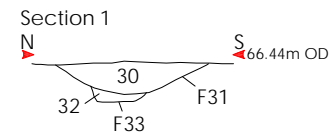
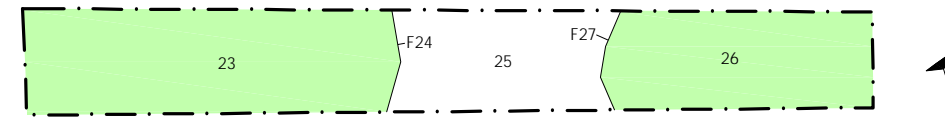
0 1km
scale 1:25 000 for A4 plot



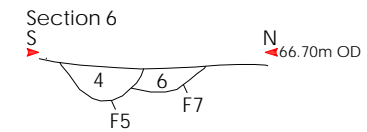
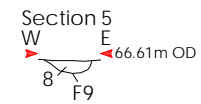
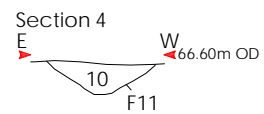
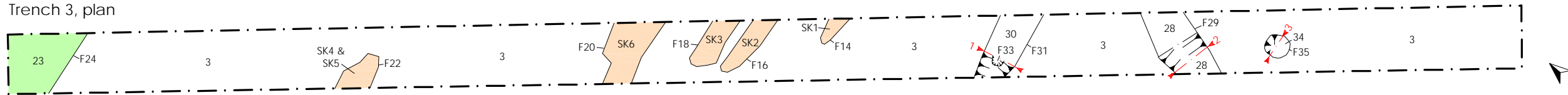
Trench 1, plan



Trench 2, plan



Trench 3, plan



Trench 4, plan

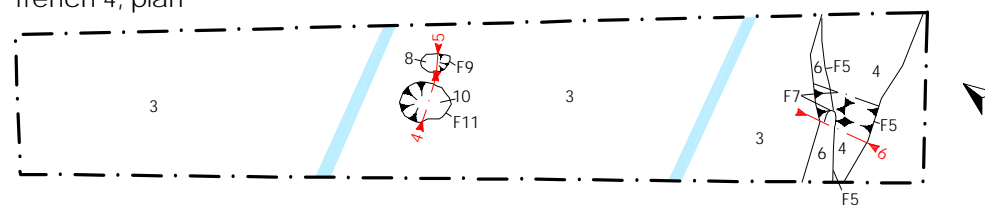




Figure 4: Trench 1, looking east



Figure 5: Trench 2, looking south-west



Figure 6: Trench 3, with the ditch/palaeochannel [F24] in the foreground, looking south-east



Figure 7: Ditch [F31] cutting post-hole [F33], Trench 3, looking east



Figure 8: Ditch [F29], Trench 3, looking south



Figure 9: Pit [F35], Trench 3, looking south



Figure 10: SK3, burial [F18], Trench 3, looking north



Figure 11: SK4 and SK5, burial [F22], Trench 3, looking west



Figure 12: Trench 4, looking north-west



Figure 13: Gully [F5] cutting gully terminus [F7], Trench 4, looking west



Figure 14: Post-setting [F9], Trench 4, looking north



Figure 15: Pit [F11] containing wood, Trench 4, looking south



Figure 16: The 9th-century coin recovered during the previous works, side A



Figure 17: The 9th-century coin recovered during the previous works, side B