AD199

Land north of Felton, Northumberland

Archaeological Strip and Record

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Commissioned by	Bellway Homes
Project Number	199
OASIS Number	adarchae1-306159
Date	January 2018

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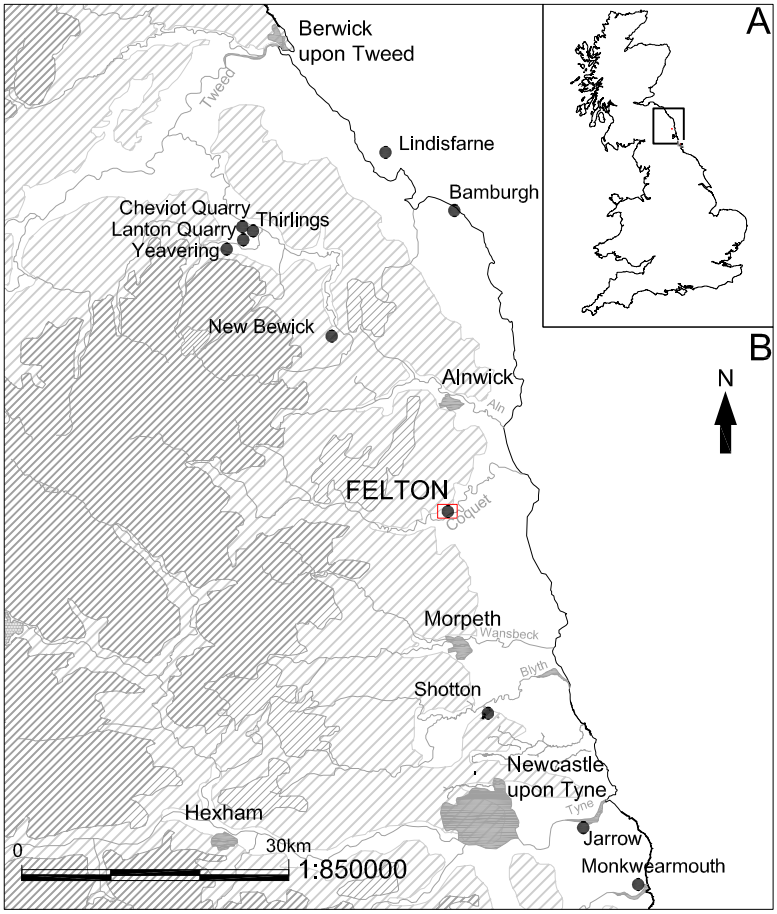
SUMMARY

AD Archaeology was commissioned and funded by Bellway Homes to undertake an archaeological strip and record on land at Felton, Northumberland which was required as mitigation to fulfil a planning condition prior to the construction of a housing development. The discovery and excavation of an Anglo-Saxon settlement during this project has provided a valuable contribution to the study of settlement from this period in the north-east England, which is underrepresented in the archaeological record.

A strip and record was undertaken in the eastern third of the site following the discovery of a scatter of pits and small cut features within two earlier archaeological evaluation trenches, from which a radiocarbon date was produced (cal AD 650–780) *which suggested the presence of settlement activity on the site from the Anglo-Saxon period. No significant archaeological features were located in the trenches in the western and central areas of the site which were excluded from the subsequent mitigation area.*

Prehistoric activity on the strip and record area was represented by a pit that contained the fragmented remains of up to three vessels dating from the mid-later Neolithic period. Two flint debitage flakes were also recovered from a posthole. A number of postholes, pits and several fragmentary gullys concentrated in the central and eastern portion of the excavation represent an unenclosed settlement from the Anglo-Saxon period which is likely to extend eastwards and northwards beyond the edge of excavation. The Anglo-Saxon settlement had been heavily truncated by a later ridge and furrow system which meant that complete ground plans of buildings have not survived. However, it was possible to identify the location of up to fifteen posthole buildings and three Sunken Feature Buildings (grubenhauser). A large number of postholes were identified across the site, many of which lay within distinct clusters and alignments. A total of 26 of these were interpreted as post-built structures (PBS); a descriptive term that includes both linear and rectangular or other discernible patterns of postholes encompassing possible fence lines as well as potential buildings. An absence of stratigraphic and limited artefactual evidence from most of the features has meant that no detailed phasing of the settlement is possible beyond that gained from radiocarbon dating of selected features. A total of nine radiocarbon dates were produced from the site. Bayesian modelling of the radiocarbon dates estimates that the settlement commenced cal AD 580–765 (95% probability) and probably in cal AD 620–760 (68% probability). The settlement probably went out of use by cal AD 780–985 (95% probability).



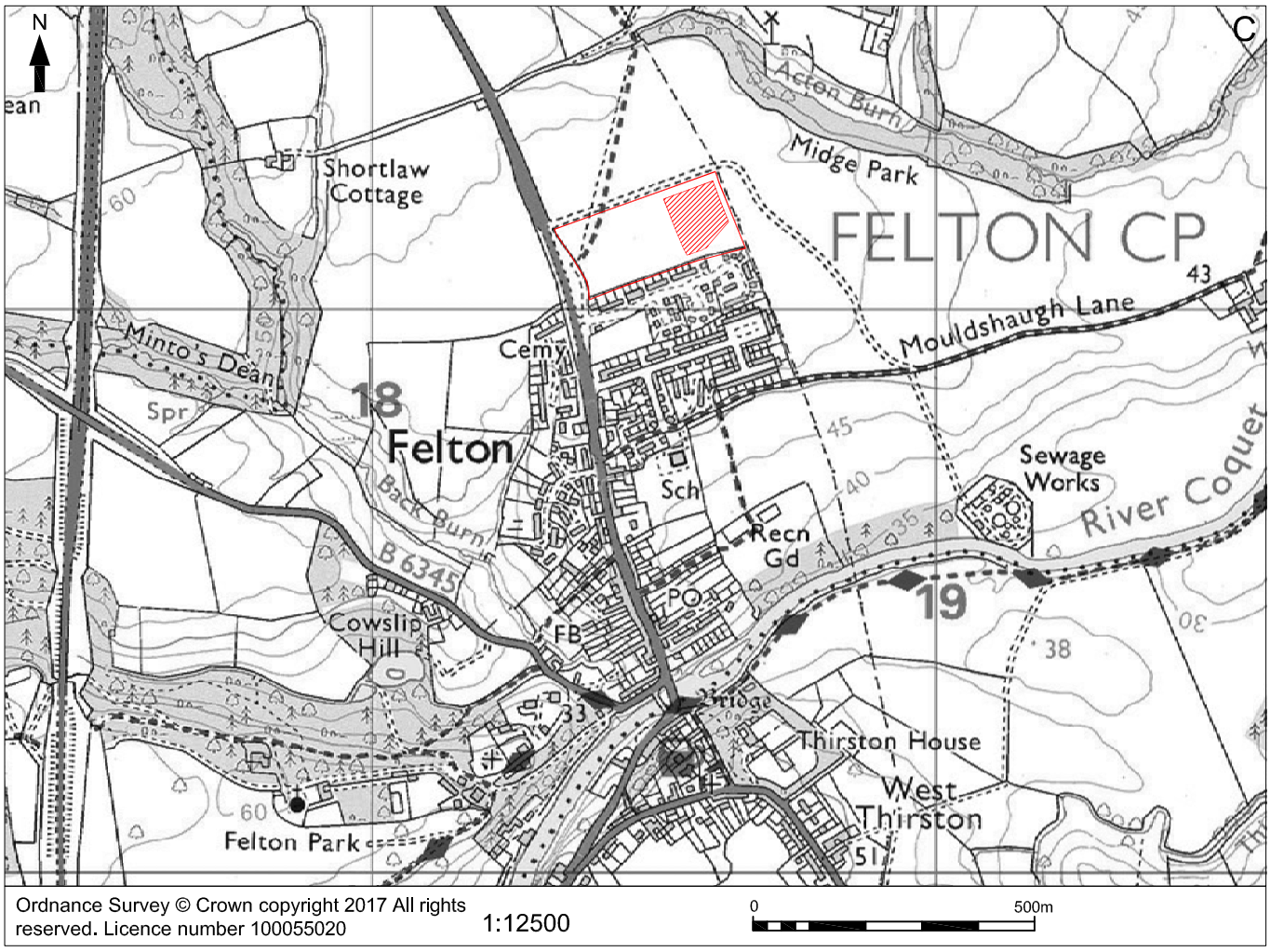


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Figure 1: General Location of Site

Felton Strip and record, Northumberland
Project number 199

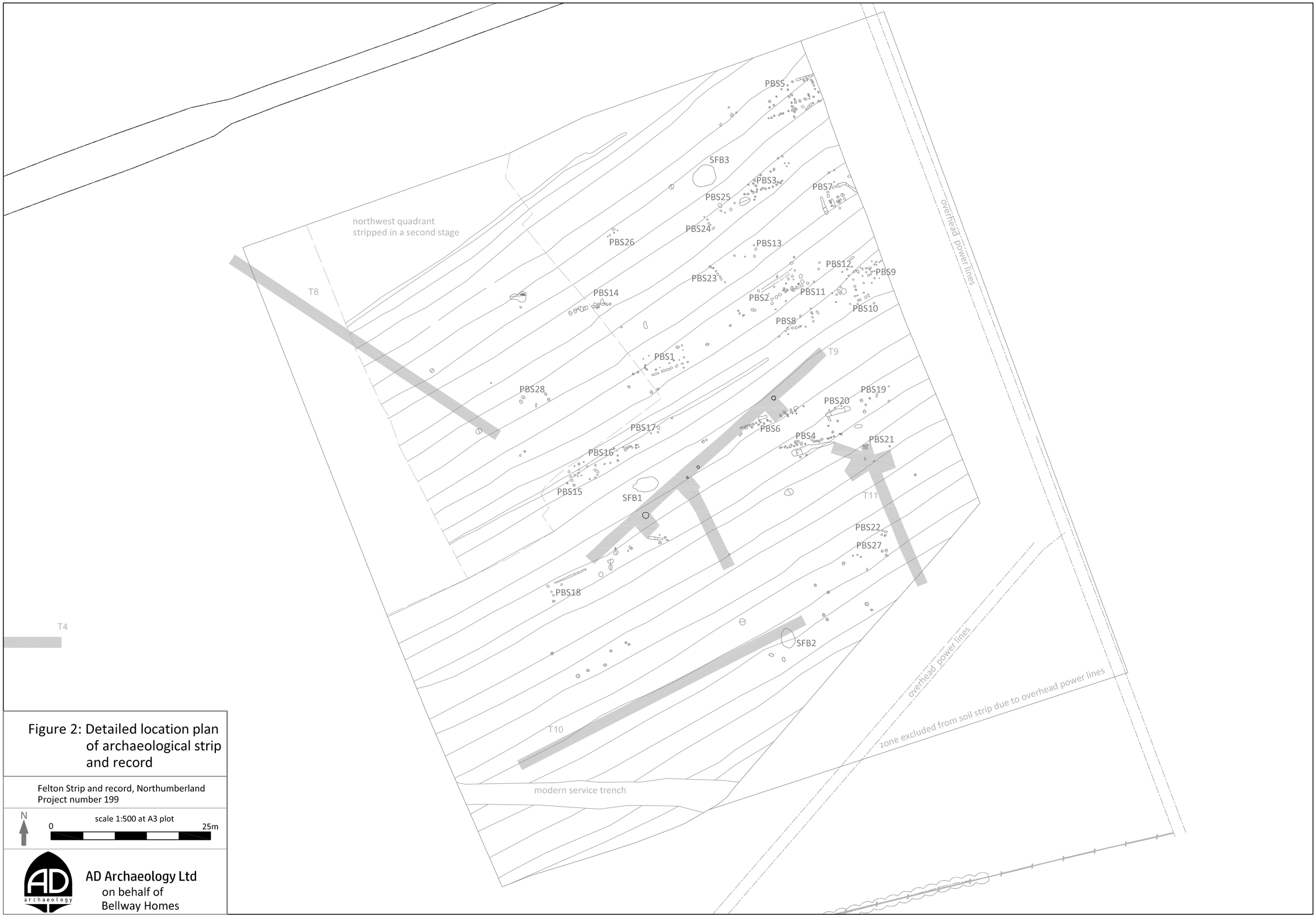

Figure 2: Detailed location plan of archaeological strip and record

Felton Strip and record, Northumberland
Project number 199

N

scale 1:500 at A3 plot

0 25m

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1. INTRODUCTION

1.1 **The Project** (fig. 1)

1.1.1 AD Archaeology Ltd was commissioned by Bellway Homes to undertake a strip and record excavation in advance of a proposed housing development on land to the north of Felton. The excavation was recommended by the Northumberland County Council Conservation Team (NCCCT) and formed the final archaeological mitigation to fulfil a planning condition. The preceding archaeological investigation of the site consisted of a desk based assessment (AD Archaeology 2015a), geophysical survey (AD Archaeology 2015b) and evaluation (AD Archaeology 2016). The archaeological works were conducted between September 2016 and February 2017.

1.1.2 The report, a requirement of the planning process, contains a written and illustrated Post-Excavation Archive report of the strip and record excavation including specialist contributions on the material culture and environmental data recovered.

1.2 **Location, Geology and Topography** (figs. 1, 2, plates 1 & 2)

1.2.1 The site is centred on NGR NU 1840 0110 and lies to the north of Felton village. Felton is situated on the historic route of the Great North Road, which is now bypassed to the west by the A1, and lies approximately equidistant from Alnwick and Morpeth at an important crossing point of the River Coquet. Overall the field measured 4 hectares in size (the total area of strip and record covered 0.92 hectares) and consisted of a single open field to the east of Main Street leading out of the village. To the south are residential properties on Benlaw Grove and to the north and east is agricultural land.

1.2.2 The site is relatively level with a very slight gradient southwards (58.3 - 57.3m AOD) towards the valley and the River Coquet where the historic core of the village lies. The River Coquet lies approximately 550m to the south, while the nearest watercourse to the site is Acton Burn which lies 280m to the north.

1.2.3 The bedrock geology of the site comprises Pennine Lower Coal Measures Formation mudstone, siltstone and sandstone. These are overlain by superficial deposits consisting of glaciofluvial deposits of sand and gravel (BGS 2015). The soils encountered during the excavation were generally derived from the glacial drift and consisted of loamy soils.

2. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The archaeological and historical background to the area is detailed in an archaeological assessment (AD Archaeology 2015a) of the site and the discussion in this report (chapter 11).

2.1 Whilst there are no known prehistoric sites recorded in the HER within the development site itself, there is evidence of prehistoric settlement and activity in the wider area. A scatter of Mesolithic flints was located on the north bank of the Coquet in Felton Park 1.2km south-west of the site (Beckensall 2003, in AD Archaeology 2015a). A number of Neolithic stone-axe heads (HER 4348) have been recovered from the Felton area (ibid.) and a flint arrowhead (HER 4326) found 600m from the site. Recent discoveries have indicated that the Northumberland Coastal Plain contains a high density of Iron Age settlements. One such Iron Age settlement is located at Swarland (HER 4327) 3.5km north-west of the site. The background of prehistoric artefactual evidence suggests that the Felton area, lying close to the River Coquet, would have been a fertile and populated area throughout the prehistoric period.

2.2 Archaeological evidence of early medieval settlement is extremely sparse in the North-East although some areas, particularly the Milfield Basin in North Northumberland, contain important sites. However, the identification and excavation of a hitherto unknown Anglo-Saxon settlement beside Shotton village in south Northumberland (Muncaster, McKelvey, Bidwell 2014), suggests that there is likely to be many other early-medieval sites throughout the North-East of England on the periphery of existing settlements. Felton follows this pattern, where prior to its discovery through archaeological investigations the HER did not record any known features of early-medieval period date within the development site or wider study area. During the archaeological evaluation (AD Archaeology 2016) a scatter of pits and small cut features were identified in Trenches 9 and 11 at the eastern end of the site. Charcoal recovered from one of the features (Tr. 9, pit 904) was radiocarbon dated to the 7th/8th Century AD (cal AD 650-780) suggesting the presence of settlement activity on the site from the early-medieval period. No significant archaeological features were located in any trenches within the western portion of the site. The discussion section (refer chapter 11) of this report considers the salient issues of this period.

2.3 Its position on the line of the Great North Road between Newcastle-Berwick meant that Felton remained an important crossing point of the River Coquet throughout the medieval period (AD Archaeology 2015a). An early charter shows there has been a bridge of some kind at Felton since at least the 12th century (HER4325). Much of the medieval village layout survives with long thin burgage plots at the south end of Main Street containing houses with frontages built up to the pavement. Recreation Lane was the main route to the fields to the east, with a path to the west leading to a spring on the hillside. The area of Felton Park (a designed landscape 1.2km south-west of the site), to the west of the church, was a hunting

forest.

2.4 In the medieval period the parish (HER 13257) was quite densely settled with villages and hamlets documented at Felton, Old Felton and Acton. On the south side of the river Coquet, Thirston is known to have been settled by 1242. Felton lay within the barony of Mitford, and was in the hands of the Bertram family. Over time ownership of the village passed through several families, among them Scrope, Percy, Lisle, Widdrington and finally to the Riddell family, named in 19th century trade directories of the county as principal landowners. Felton's position close to the Scottish border meant that it was subject to cross border raids and skirmishes between the 16th-17th centuries. In response to these unsettled times, bastles were constructed at Acton Hall and Lanehead. Felton's position on the main north-south communication route meant that although it was always an important settlement it suffered during the period of border warfare, and very few buildings date recognisably from before the 18th century; no. 6 Riverside is an exception (HER 20178), retaining its early 17th century longhouse plan.

3. AIMS AND OBJECTIVES

3.1 The objective of the strip and record excavation was to undertake sufficient intrusive excavation to ascertain information about the nature, extent and chronology of the site, and to ensure the preservation by record of archaeological features exposed during the development. The information gained has made a contribution to the existing body of archaeological knowledge and the results will be disseminated through the production of a report for publication.

4. METHODOLOGY (figs. 1-2)

4.1 General Methodology

4.1.1 The strip and record was carried out in compliance with all the relevant codes of practice by suitably qualified and experienced staff.

4.2 Excavation and Recording

4.2.1 The strip and record excavation was agreed with the County Archaeology Officer and was undertaken in accordance with an approved Written Scheme of Investigation (Appendix 3). Following the removal of topsoil by machine under archaeological supervision a pre-excavation plan was surveyed. Features exposed were sample excavated although the extent of excavation required varied according to the informative potential of different features.

4.2.2 The Written Scheme of Investigation provided for a contingency should archaeological remains be encountered of a greater number or extent than anticipated (Appendix 3, section 7). A contingency resource of up to 50 person-days was allocated to allow the excavation and recording of archaeological remains during this phase of mitigation works. This contingency was enacted in full with the

kind agreement of NCCCT and Bellway Homes following the discovery of more extensive archaeological remains than was initially anticipated prior to the strip and record.

4.2.3 The full extent of the strip and record area could not be exposed along the eastern and northern edges of the site due to the presence of overhead power lines.

5. EXCAVATION RESULTS

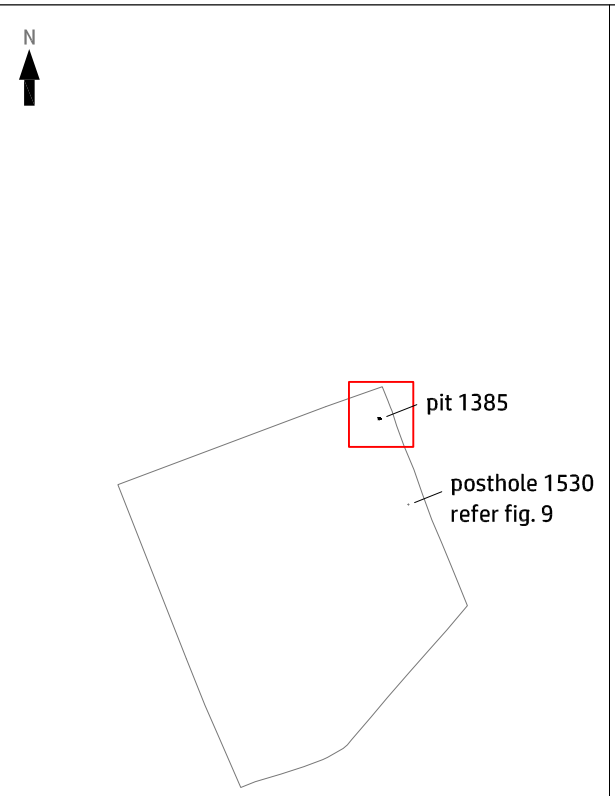
5.1 PHASE 1 PREHISTORIC PERIOD (fig 3, plate 3)

5.1.1 The only feature securely identified from the prehistoric period was a 'midden' pit (1385) located in the northeast corner of the strip and record area which contained the fragmentary remains of up to three vessels of mid-late Neolithic date, charcoal and hazelnut shells (refer 5.1.4). Two flakes of flint debitage (fill 1531, SF11) were recovered within the fill of posthole 1530 in Area 3 (fig. 9) assigned to PBS 10 of the phase 2 Anglo-Saxon settlement. This raises the possibility that if the finds are not residual this posthole and maybe others in the vicinity are instead prehistoric in origin. (fill 1531, SF11). The posthole was the only one excavated in PBS 10 and the flint was visible in the surface of the feature prior to its excavation. In general there was an absence of dating evidence from most features across the site leaving open the possibility that a small number of features assigned to the phase 2 Anglo-Saxon settlement across the site may instead be considerably earlier in date and originate from the Neolithic period.

5.1.2 Pit 1385 had been heavily truncated by plough action and was cut by two later postholes (1381, 1388) from post-built structure (PBS) 5. The pit was sub-circular in plan and measured 0.63m by 0.56m by 0.12m in depth. In profile its upper edges were gently sloped, steepening sharply along its northern side and remaining more gently sloped elsewhere down to a slightly rounded base.

5.1.3 The lower fill of the pit consisted of grey sandy silt (1386) with brown silty lenses and rare flecks of charcoal. The upper portion of the fill (1386) contained numerous pottery sherds (see below) that were spread across the surface of much of the fill. Deposit 1386 and the pottery were overlain by grey sandy silty (1387) containing occasional flecks of charcoal.

5.1.4 Sherds from two Fengate Ware vessels (1 and 2) of mid-later Neolithic date were recovered from fill 1386, as well as sherds from a large thick walled vessel (vessel 3) which may be of later Neolithic date (refer chapter 7). An environmental sample of fill 1386 produced a predominance of charred hazelnut shells which is typical of prehistoric deposits (sample 21-refer chapter 6).



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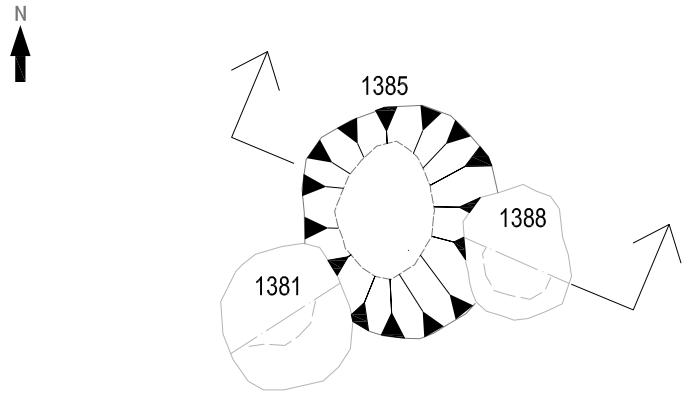
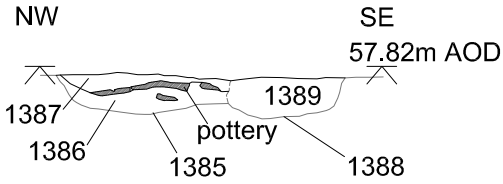


plan view



South southwest facing section

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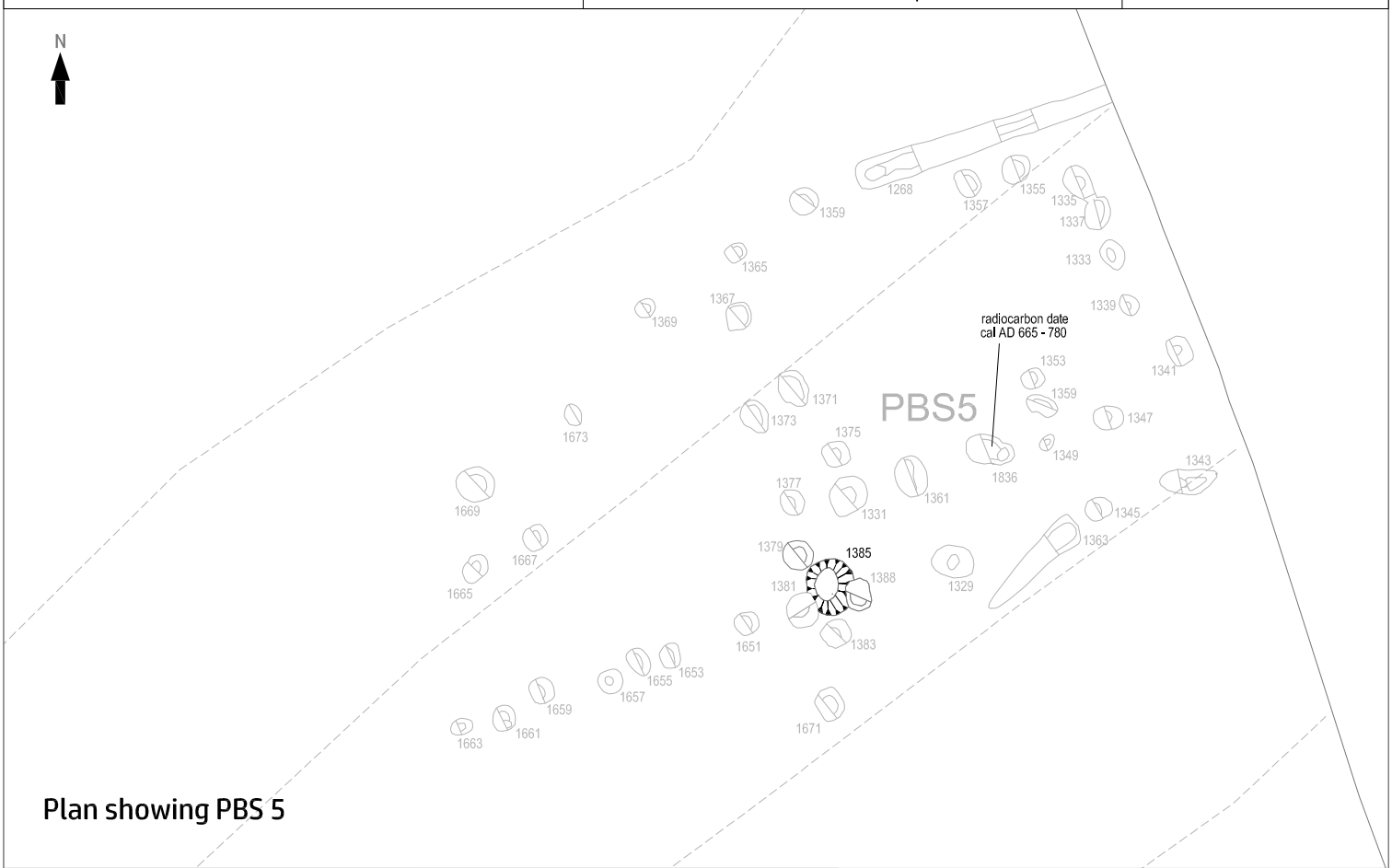

Plan showing PBS 5

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Figure 3: Phase 1: Plan and section of pit 1385

scale 1:75 at A4 plot

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Project number 199

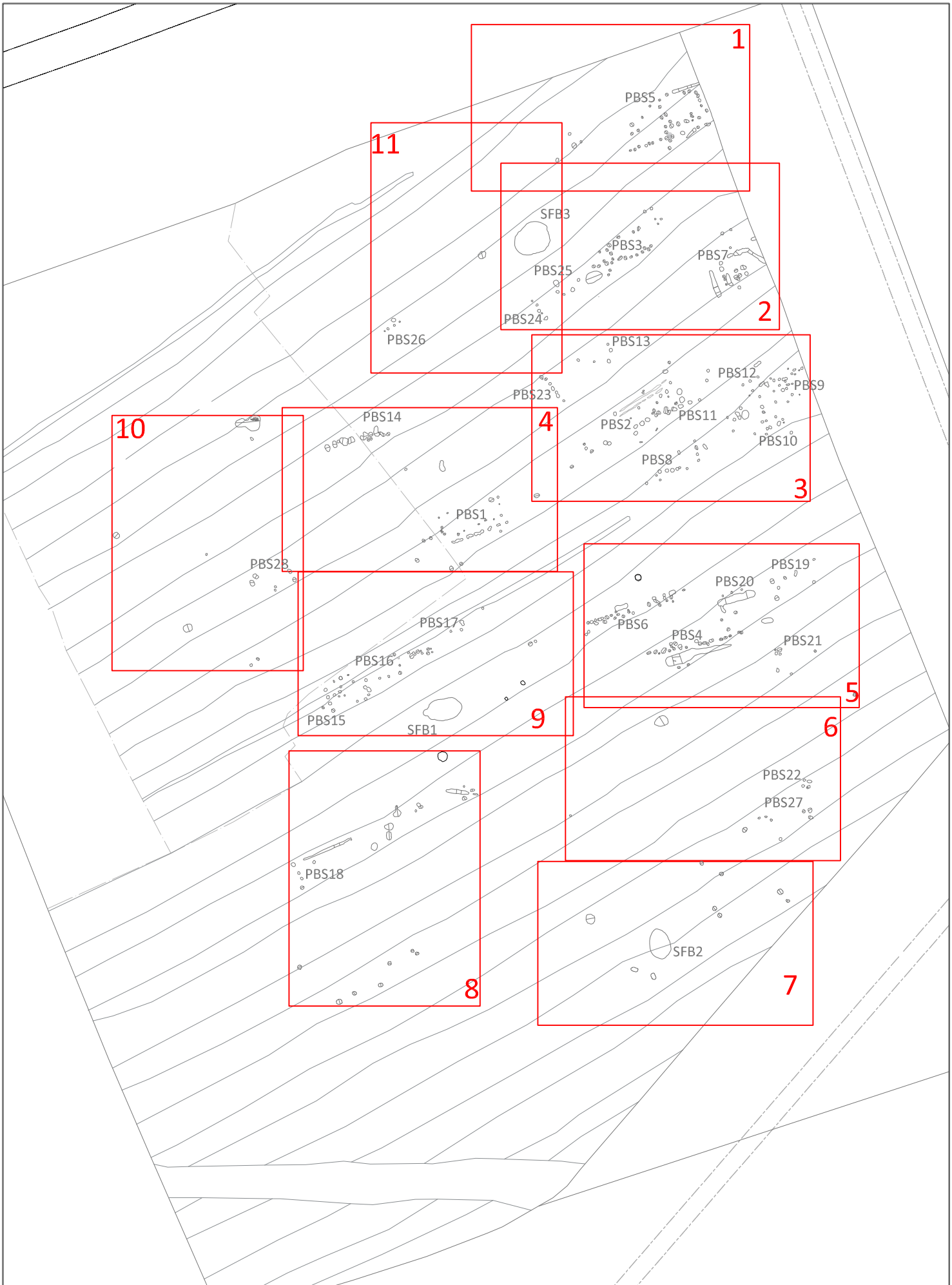

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Figure 4: Detailed Area plans of Felton strip and record

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scale 1:500 at A4 plot

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Felton Strip and record, Northumberland
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5.2 PHASE 2 ANGLO-SAXON SETTLEMENT

(figs.4 – 25; plates 4 - 18)

5.2.1 A series of heavily truncated postholes, pits and several fragmentary gullys concentrated in the central and eastern portion of the excavation (figs. 2, 4) represent an unenclosed Anglo-Saxon settlement which is likely to extend further to the north and east beyond the limits of the excavation. Groupings of postholes aligned on a predominant ENE-WSW axis indicate the presence of a number of buildings (figs. 2, 25) all of which have been badly truncated by deep furrows from a later ridge and furrow system to such an extent that no complete floorplan of a building could be identified from the surviving postholes. Therefore, structures identified from these partial remains are necessarily speculative and it is possible that they instead belong to other structures or were utilised for purposes such as fencing or shelters.

5.2.2 The postholes identified across the site lay in varying densities and clusters and have been defined as post-built structures (PBS), 26 of which have been assigned, encompassing possible fence lines as well as buildings. Fifteen buildings have been identified with varying degrees of confidence (PBS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 16, 18), at least eight of which may represent rectangular buildings commonly known as 'halls' which formed standard family dwellings (fig. 25). Three large pits are likely to represent Sunken Featured Buildings (SFB1, 2, 3).

5.2.3 A general lack of stratigraphic and artefactual evidence from most of the features has meant that no detailed phasing of the settlement is possible beyond that gained from radiocarbon dating of selected features (refer 11.1). For the purposes of this report the site has been sub-divided into 11 areas (fig. 4) to facilitate its presentation.

5.2.4 AREA 1 (figs. 5, 6, 25, plates 4, 5)

5.2.4.1 Area 1 occupies the northeast corner of the site and contained at least two possible phases of building represented by PBS 5, a complex group of postholes with multiple alignments of postholes and a narrow gully or wall trench. Another small group of postholes or pits lay a short distance to the east of PBS5 (see 5.2.4.6). Two postholes (1381, 1388) from the structure cut the phase 1 pit (1385), though it is possible that some postholes assigned to PBS 5 may relate to this earlier phase of occupation. Bayesian analysis of radiocarbon determinations suggests that PBS 5 was contemporary with PBS 1 (chapter 10, p76).

PBS 5 (plates 4, 5)

5.2.4.2 The exact layout of PBS5 remains conjecture with various interpretations of the posthole arrangements possible and it's uncertain how much if any of the structure continued under the eastern edge of excavation. The postholes are likely to represent the remains of at least one or possibly two (successive?) structures.

5.2.4.3 A row of twelve postholes (5a: 1663/61/59/57/55/53/51; 1381/

88/30/45/43) perhaps defined the southern wall of the building aligned in an ENE-WSW direction for a distance of 8.8m. A radiocarbon date was produced from posthole 1330 (see below, and chapter 10). The final 4m of the eastern end of the row contained only 3 postholes along its length, which may reflect at least in part where a short linear feature (1363) probably representing a heavily truncated gully extended towards the southwest from the edge of the posthole row. The eastern gable of the putative structure was formed by a row of postholes (5-b: 1335/37/33/39/41/43) that extended for 3.8m from posthole 1343 at the eastern end of the southern row (5-a). No postholes were present along the southern 1.8m of the row with the exception of postholes 1341 which lay to the E of the main line of postholes. The northern portion of the building was cut across by a later furrow which had probably truncated most of the structure in this area. The northern side of the structure was probably at least partially defined by a row of three postholes (5-e: 1365/57/55), which lay at a distance of 3.5m parallel to the south side (5-a). A narrow gully or fence/wall trench (1268) and posthole (1359) (5-f) lay immediately north of row 5-e and may represent the wall line of a separate phase of building perhaps associated with row 5-c to the south (see below). The cut (1268) terminal deepened along the final 0.6m of its length. An environmental assessment of posthole 1330 (fill 1329) included a small quantity of fired clay and pot fragments, a wheat grain, and charred seaweed (sample 19, chapter 6).

5.2.4.4 A perpendicular line of postholes (5-d: 1365/67/73/77/79) that extended south from posthole 1365 of row 5-e may form an internal wall line/sub-division of the building represented by row 5-a mid-way along its length, 3.8m west of the putative eastern gable (5-b), alternatively it may represent the west or perhaps less likely east gable of another building. An additional posthole (1371) lay slightly east from line 5-d alongside posthole 1373. Five postholes (1665/67/73/69, 1369) in the northwest portion of the building did not lie on any identifiable wall lines, although postholes 1669 and 1371 to the east did lie along the approximate centre line of the putative building and may represent central supports. The purpose of a row of postholes (5-c: 1331/61/49/47, 1836) within the 'interior' of the building (parallel to the south wall (5-a) that lies 0.65m to the south) is uncertain, they may represent an internal feature another phase of structure. Posthole 1375 lay alongside the north side of its west end (posthole 1331), and two other postholes 1351/53 lay in a short row immediately north of posthole 1349 of the row (5-c). Linear cut 1268 continued east beyond the edge of excavation from its square ended western terminal. In profile it varied from U-shaped to a wider shallower more gently sloped profile, measuring between 0.23m and 0.33m in width by 0.08m in depth before deepening to 0.19m at its terminal.

Other Features in Area 1

5.2.4.5 Three postholes (1674, 1675, 1678) and a larger pit or posthole (1677) lay 5m west of PBS 5. Posthole 1677 was one of the three postholes (1674/75/77) that lay in a row that extended 3.4m in a WSW-ENE orientation. The row lay on the immediate edge of a later furrow that could have truncated further postholes that may have lain on this alignment. Another posthole (1678) lay 0.9m north of the eastern end of the row. Posthole 1677 was sub-circular in plan and had irregularly

sloped sides that were steeper on the east, with rounded narrow base. It was filled with greyish brown sandy silt with few inclusions (1676).

Radiocarbon dating
PBS 5 - Fill1329, posthole 1330. cal AD 665-780 (SUERC-75837).

Table 1-**Features in Area 1**

Context	Description	Max. Dimensions	Depth	Fill	Comments
PBS 5					
1663	Posthole	0.25m x 0.18m	0.03m	1662- dark grey-brown clayey silt	S wall (5-a)
1661	Posthole	0.28m x 0.23m	0.09m	1660- dark grey-brown clayey silt	S wall (5-a)
1659	Posthole	0.30m x 0.26m	0.06m	1658- dark grey-brown clayey silt	S wall (5-a)
1657	Posthole	0.28m x 0.27m	0.08m	1658- dark grey-brown clayey silt	S wall (5-a)
1655	Posthole	0.33m x 0.22m	0.04m	1654- dark grey-brown clayey silt	S wall (5-a)
1653	Posthole	0.28m x 0.24m	0.05m	1652- dark grey-brown clayey silt	S wall (5-a)
1651	Posthole	0.27m x0.25m	0.03m	1650- dark grey-brown clayey silt	S wall (5-a)
1381	Posthole	0.38m x 0.34m	0.11m	1380- dark grey-brown clayey silt	S wall (5-a), cuts pit 1385
1383	Posthole	0.31m x 0.31m	0.06m	1384- dark grey-brown clayey silt	lies immediately S of S wall row of postholes
1388	Posthole	0.34m x 0.27m	0.11m	1389- dark grey-brown clayey silt	S wall, cuts pit 1385
1671	Posthole	0.36m x 0.29m	0.12m	1670- dark grey-brown clayey silt	outlier S of S wall row of postholes
1330	Posthole	0.40m x 0.34m	0.10m	1329- dark grey sandy clay	S wall (5-a)Env. sample 19- refer chapter 6 Radiocarbon date cal AD 665-780/SUERC-75837
1363	Posthole	1.30m x 0.26m	0.08m	1364- dark grey sandy clay	Linear feature on outer edge of S wall (5-a)
1345	Posthole	0.31m x 0.26m	0.09m	1346- dark grey-sandy clay	S wall (5-a)
1343	Posthole	0.60m x 0.29m	0.15m	1344- dark grey-sandy clay	S wall (5-a) SE corner of building?, S end of row 5-b
1341	Posthole	0.30m x 0.25m	0.10m	1342 brown sandy clay	E wall? (5-b), slightly offset to E from N-S row of postholes
1339	Posthole	0.24m x 0.20m	0.10m	1340 brown sandy clay	E wall (5-b)
1333	Posthole	0.33m x 0.25m	0.12m	1334 brown sandy clay	E wall (5-b)
1337	Posthole	0.36m x 0.29m	0.08m	1338 grey brown sandy clay	E wall (5-b)
1335	Posthole	0.43m x 0.28m	0.16m	1336 grey brown sandy clay	E wall (5-b)
1355	Posthole	0.33m x 0.30m	0.10m	1356- grey brown sandy clay	N wall? (5-e), forming E-W return to row 5-b
1357	Posthole	0.32m x 0.25m	0.11m	1358- grey brown sandy clay	N wall? (5-e),

1365	Posthole	0.23m x 0.19m	0.16m	1366- dark grey-brown clayey sandy silt	N wall? (5-e), also forms N end of N-S row (5-d) an internal subdivision of bld 5? or W gable
1367	Posthole	0.30m x 0.27m	0.18m	1368- grey- sandy clay	N-S row (5-d),
1373	Posthole	0.38m x 0.29m	0.06m	1374- grey- sandy clay	N-S row (5-d)
1377	Posthole	0.30m x 0.26m	0.12m	1378- silty sandy clay	N-S row (5-d)
1379	Posthole	0.33m x 0.32m	0.16m	1380- grey- sandy clay	N-S row (5-d)
1371	Posthole	0.44m x 0.32m	0.20m	1372- grey- silty sandy clay	Immediately E of row (5-d), along central axis of bld
1347	Posthole	0.30m x 0.23m	0.10m	1348- grey- sandy clay	E-W row (5-c) internal or S wall from different phase of building
1349	Posthole	0.18m x 0.18m	0.10m	1350- brown - sandy clay	E-W row (5-d)
1836	Posthole	0.52m x 0.32m	0.26m	1835- dark grey- sandy clay	E-W row (5-d) contains possible timber socket
1361	Posthole	0.40m x 0.28m	0.14m	1362- grey- sandy clay	E-W row (5-d)
1331	Posthole	0.47m x 0.38m	0.23m	1332- dark grey- sandy clay	E-W row (5-d)
1375	Posthole	0.32m x 0.30m	0.18m	1376- grey- silty sandy clay	Immediately N of posthole 1331 at W end of row (5-c)
1268	Posthole	2.90m excav x0.32m	0.07m-0.17m	1267- dark grey-brown sandy clayey silt	N wall slot/ gully? (5-f), continues E beyond excavation
1359	Posthole	0.30m x 0.30m	0.11m	1360- grey brown sandy clay	Immediately W of terminal of slot 1268 maybe related (5-f)
1353	Posthole	0.30m x 0.30m	0.11m	1354- grey brown sandy clay	N-S short row with 1351, and 1349 of row 5-c
1351	Posthole	0.17m x 0.36m	0.10m	1352- grey brown sandy clay	N-S short row with 1353, and 1349 of row 5-c
1369	Posthole	0.23m x 0.21m	0.12m	1370- dark grey-brown sandy clay	Internal? NW portion of PBS5
1669	Posthole	0.40m x 0.39m	0.07m	1668- grey- sandy clay	One of 2 postholes and 1371 along NE-SW internal central axis of bld
1673	Posthole	0.33m x 0.18m	0.04m	1672- grey- sandy clay	Internal? NW portion of bld5
1665	Posthole	0.33m x 0.24m	0.18m	1664- grey- sandy clay	Internal? NW portion of bld5
1667	Posthole	0.27m x 0.26m	0.09m	1666- grey- sandy clay	Internal? NW portion of bld5
Other features in Area 1					
1674	posthole	0.26m x 0.21m	-	grey sandy silt	-
1675	posthole	0.44m x 0.26m	-	grey sandy silt	-
1677	Pit/ posthole	0.54m dia.	0.15m	1676-grey brown sandy silt	-
1678	posthole	0.26m x 0.25m	-	grey sandy silt	-

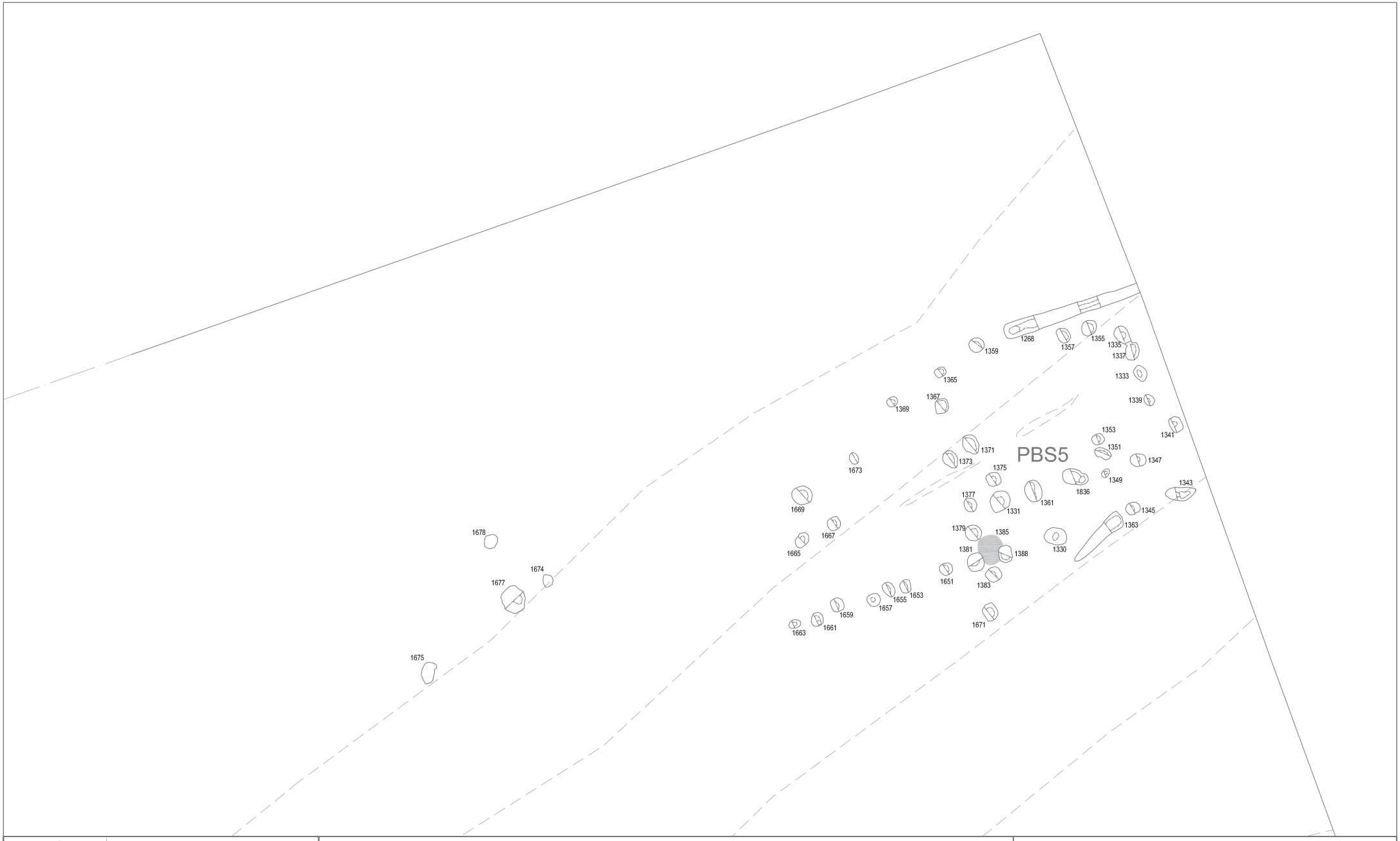

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Figure 5: Plan of Area 1 showing building 5

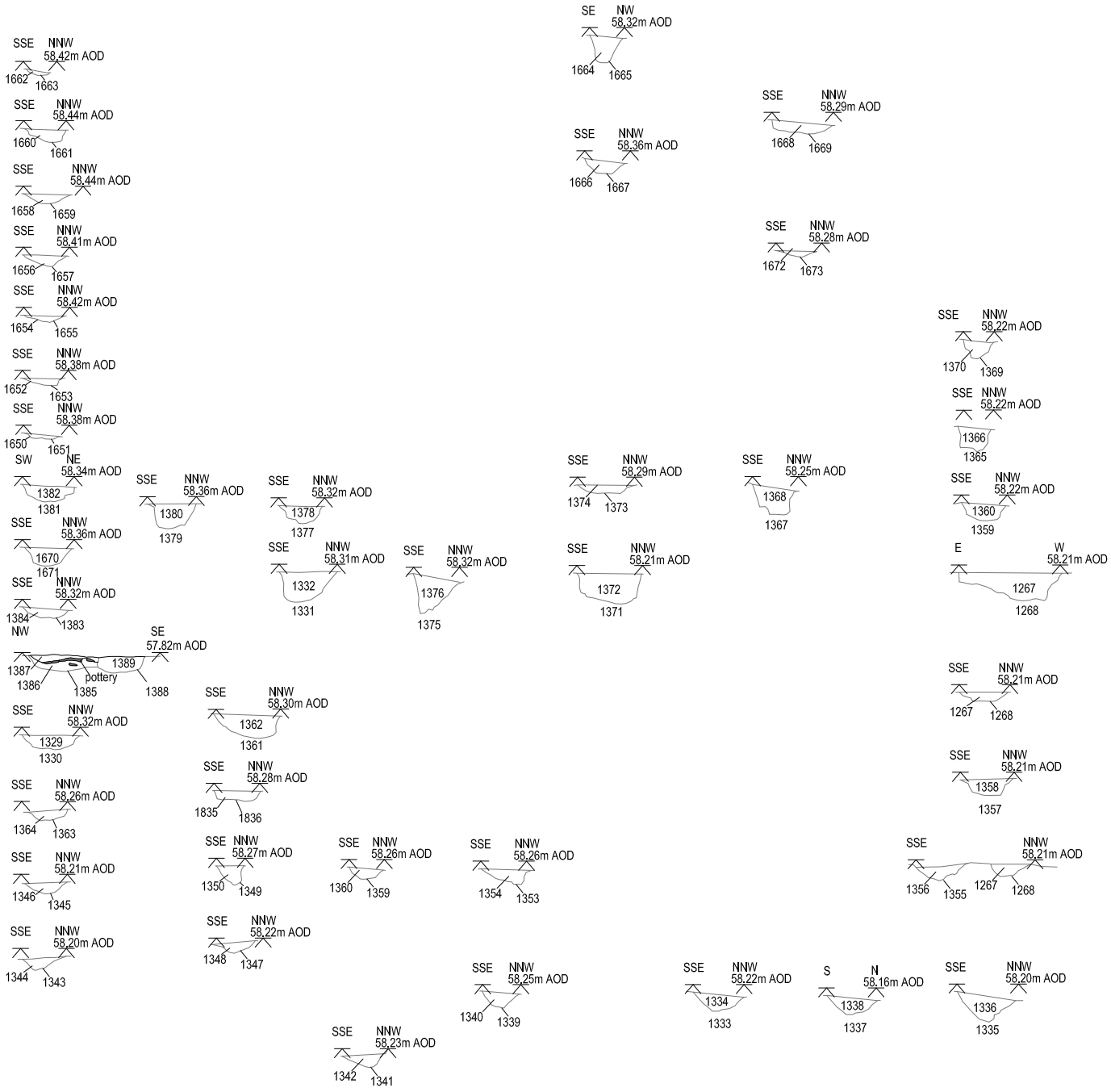
N

0 5m

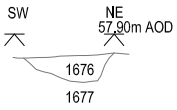
scale 1:100 at A4 plot

Felton Strip and record, Nothumberland
Project number 199

PBS 5



Other sections from Area 1



AD Archaeology Ltd on behalf of Bellway Homes	Figure 6: Area 1 sections	0 1m scale 1:40 at A4 plot Felton Strip and record, Northumberland Project number 199

5.2.5 AREA 2 (figs. 7, 8, 18, 25, plates 6 - 8)

5.2.5.1 Area 2 lies near the northeast corner of the site and contained three concentrations of archaeological features. Features on the eastern edge of the excavation probably represent more than one phase of activity, consisting of postholes, a possible wall trench from PBS 7, and gullies. PBS 3 in the mid-portion of Area 2 was represented by a complex group of postholes with multiple alignments that may represent one or more structures. Pit 1220 lay immediately southwest of PBS 3 with two further groups of postholes (PBS24, 25) to the west of this. PBS 24 was formed by a row of postholes perhaps associated with a fence line that lay 6.9m southwest of PBS 3. A large pit that probably represents a sunken featured building (SFB 3) lay in the northwest corner of Area 2. Bayesian analysis of radiocarbon determinations from SFB 3, PBS 3 and 7 estimated that of all the dated PBSs on the site PBS 3 was the latest (chapter 10, p76), probably postdating PBS 7 and SFB 3. It was also estimated that SFB 3 was contemporary with SFB 1 in the central portion of the site (Area 9).

PBS 3 (plate 6)

5.2.5.2 The most prominent element of PBS3 was an east-west line of postholes (3-a; 1222/24/26/28/30/32/34/36/52/58: 3-b; 1264/60/56/54) that may represent the south wall of a structure 6.4m in length or alternatively form elements of two structures. Posthole row 3-b at the west end of the group which lies slightly south and offline from row 3a may represent a separate structure associated with a north-south return (3-c) together forming the southeast corner of a structure truncated elsewhere by the furrow. The perpendicular line of postholes (3-c; 1252/46/48/44) that extended from posthole 1252 of row 3-a may alternatively: represent an internal feature; the east gable wall of a structure associated with row 3-b; or the west gable associated with row 3-a. Three outlying postholes (1248, 1250, 1258) lie within the area define by rows 3-b and 3-c and may be associated. A line of 3 postholes (3-d; 1242/40/38) lay 2m parallel to the north of line 3-a, and may be related to the same structure. A group of four unexcavated postholes (3-e; 1686/87/88/89/90), with 1 outlying (1689) lay to the northeast and formed a right angle corner perhaps related to a structure associated with row 3-a, 3.7m to the south. The western return of the alignment was truncated by a furrow and presumably extended further, whereas the NNW-SSE line of postholes (3-e) were very ephemeral and probably also originally extended further, perhaps forming the east gable of a structure. A pair of outlying postholes (1266, 1262) to the south of row 3-b lay on the same alignment as 1252 and 1264 of lines 3-b and 3-c and may be related. An environmental assessment of posthole 1236 (fill 1235) contained charcoal and charred seaweed (sample 10, chapter 6). A radiocarbon date was produced from the fill of posthole 1390 (refer 5.2.5.1 and chapter 10).

PBS 7 (plate 7)

5.2.5.3 PBS 7 alongside the eastern edge of excavation consisted of a number of postholes a wall trench and gullies perhaps representing more than one phase of activity. The features conform to a general NNW-SSE or ENE-WSW axis.

5.2.5.4 The putative western wall of PBS 7 is represented by a row of five postholes (1468, 1470, 1472, 1392, 1482) at the northern end of which lay an elongated pit (1456) possibly for a post-in-trench wall that ran perpendicular perhaps partially defining the northern wall. The south side was likely to have been truncated by a later furrow, with the exception of one posthole (1842) which lay opposite the west end of trench 1456. The minimum footprint of a building defined by the above elements is 3.36m north-south by 3.2m east-west. It is uncertain whether the putative building extended east beyond the trench and under the edge of excavation which lay 1m to the east. The trench (1456), which measured 2.34m by 0.56m by 0.21m in depth, had irregular sides and narrowed sharply for a short distance near its western end before widening again. In profile it had near vertical sides with a flattish base and was filled with mixed greyish brown and orange-brown sandy silt with occasional flecks of charcoal (1457). A very shallow linear cut (1486) of uncertain origin, only 0.02m in depth, intersected the east end of slot 1456; which lay on a NW-SE orientation to the other features and was unlikely whether it was contemporary with them.

5.2.5.5 It is unclear how a tight group of six postholes (1390, 1458, 1460, 1462, 1464, 1718) located in the interior of the area defined by PBS 7 are related. They were clearly not all contemporary with posthole 1462 cutting posthole 1464 to the north. A sherd of Anglo-Saxon pottery (SF.2, chapter 7) was recovered from the fill (1459) of posthole 1458 which consisted of greyish brown sandy silt. A spindle whorl (SF.1, chapter 8) was recovered from the fill (1391) of the neighbouring eastern posthole 1390. Posthole 1390 was the largest of the group measuring 0.59m by 0.43m by 0.14m in depth, and in profile had mainly steep near vertical sides with a flattish base. It was filled with greyish brown sandy silt with lenses of orange natural subsoil and contained frequent inclusions of soot and charcoal (1391). An environmental assessment of the fill (1391) from posthole 1390 included a small quantity of fired clay, possible pot fragments, and semi-vitrified fuel waste, oat grains and seaweed (sample 22, chapter 6). A radiocarbon date was produced from the fill of posthole 1390 (refer 5.2.5.1, see end of section). There was no direct stratigraphic relationship between the two parallel linear features (1474, 1466), spaced 1m apart, that probably represent heavily truncated gullys, and the postholes of PBS7. Their southern end was truncated by a furrow and to the north they petered out and had almost certainly extended further north. The NNW row of postholes (1390, 1458, 60, 62, 64 and 1710) lay immediately west of gully 1466 between the two gullys and it is uncertain whether they are contemporary. Gully 1466 measured 1.33m in length by 0.38m by 0.10m in depth, and in profile was gently sloped on its western side steeper to the east with a flattish base. The fill consisted of greyish brown sandy silt (1467) with few inclusions. Gully 1474 measured 0.54m by 0.15m in depth, and in profile was steeply sloped on its western side more gentle to the east with a flattish base. Posthole 1483 and linear feature 1485 lay 0.40m to the north of slot 1456, they lay on a similar ENE-WSW orientation as the slot and may be related. The linear feature (1485) probably represents a gully or slot and continues east beyond the edge of excavation. Two further postholes (1484, 1843) identified 1.6m to the north of posthole 1483, ran on the same axis.

PBS 24 (Fence line)
5.2.5.6 PBS 24 consisted of a NW-SE orientated row of five postholes (1697/98/99, 1700/01) spaced between 0.40m and 0.70m apart. Although it measured only 2.54m in length it is likely to have originally extended further to the north and possibly to the south before its truncation by later furrows. It was notable though perhaps coincidental that 5.1m to the southwest posthole 1706 (Area 3) from the west end of PBS 13 lay on the same projected axis as PBS 24 and therefore may potentially be related.

PBS 25
5.2.5.7 PBS 25 consisted of five postholes (1692/93/94/95/96) which together lay in a rough u-shape occupying an area of 2.76 x 1.6m. Posthole 1696, the largest of the group, was cut by a later furrow that may have truncated further postholes related to this group if it extended northwards. The purpose of this arrangement of postholes remains uncertain.

Sunken Featured Building 3 (SFB 3) (fig. 18, plate 8)
5.2.5.8 SFB 3, located 5m northwest of PBS3, consisted of a large, slightly irregular oval shaped pit (1397). It was aligned ENE-WSW along its main axis and measured 3.67m by 3.18m and 0.64m in depth. The pit had moderate to steeply sloped sides with a gradual break of slope towards the base that was slightly concave. The east end of the pit was gently sloped with a shallow steeper drop to the base.

5.2.5.9 The pit was filled with successive layers of silting the earliest of which was a layer of grey clay (1396) containing occasional sandstone fragments an average of 70m x 160mm x 170mm. Deposit 1396 was overlain by a layer of iron mottled, brown sandy clay (1395) with occasional small sandstone fragments an average of 10m x 80mm x 60mm. The partially silted pit and deposit 1395 was overlain with fe mottled, greyish brown silty clay (1394) containing occasional small sandstone fragments and charcoal flecks. A plant macrofossil assessment of fill 1396 (sample 24, chapter 6) included calcined bone, a fragment of flint, a barley grain and charcoal. A radiocarbon date was produced from deposit 1396 (refer 5.2.5.1 and chapter 10).

Additional features
5.2.5.10 Pit 1220 lay between PBS 3 and PBS 25. It was sub-oval in plan with concave sides and base, and filled with dark grey silty clay (1219) containing occasional small fragments of sandstone and lenses of clay. Two fragments of metalworking debris (SF.8, chapter 9) were recovered from the fill. An environmental assessment of the fill contained common charcoal fragments and a charred hazel nutshell fragment (sample 10, chapter 6).

Radiocarbon dating
PBS7 - Fill1391, posthole 1390. cal AD 770-970 (SUERC-75838).
PBS3 - Fill1235, posthole 1236. cal AD 640-690 (SUERC-75844): *cal AD 640–715 (60%) cal AD 740–770 (35%)*.
SFB3 - Fill1396, Cut 1397. cal AD 770-980 (SUERC-75840).

Table 2-**Features in Area 2**

Context	Description	Max. Dimensions	Depth	Fill	Comments
PBS 3					
1254	posthole	0.30m x 0.27m	0.10m	1253-dark grey silty clay	Row of 4 postholes at E end of S wall (3-b) that lie slightly S of main wall line
1256	posthole	0.34m x 0.27m	0.10m	1255- dark grey silty clay	Row of 4 postholes at E end of S wall (3-a) that lie slightly S of main wall line
1260	posthole	0.39m x 0.34m	0.10m	1259- dark grey silty clay	Row of 4 postholes at E end of S wall (3-b) that lie slightly S of main wall line
1264	posthole	0.45m x 0.30m	0.13m	1263- dark grey-brown silty clay	Row of 4 postholes at E end of S wall (3-b) that lie slightly S of main wall line; also forms 2nd of SSW row of 4 postholes (3-f) outlying Bld.
1258	posthole	0.26m x 0.23m	0.10m	1257- dark grey silty clay	S wall? in line with end of row 3-a, or internal posthole associated with 3-b & 3-c
1252	posthole	0.26m x 0.23m	0.10m	1251- dark grey silty clay	S wall (3-a), also lies at S end of line 3-c of three NNW-SSE postholes and S end of NNE orientated line of 4 postholes (3-f)
1236	posthole	0.57m x 0.29m	0.25m	1235-dark grey silty clay	S wall (3-a), contains two posthole settings or a recut Env. Sample 11- refer chapter 6). Radiocarbon date cal AD 640-690/SUERC-75844
1234	posthole	0.37m x 0.34m	0.11m	1233- dark grey silty clay	S wall (3-a)
1232	posthole	0.30m x 0.20m	0.07m	1231- dark grey-silty clay	S wall (3-a)
1230	posthole	0.24m x 0.24m	0.08m	1229- dark grey-brown silty clay	S wall (3-a)
1228	posthole	0.25m x 0.24m	0.15m	1227- dark grey silty clay	S wall (3-a)
1226	posthole	0.32m x 0.25m	0.10m	1225- dark grey-silty clay	S wall (3-a)
1224	posthole	0.34m x 0.26m	0.21m	1223- dark grey-silty clay	S wall (3-a)
1222	posthole	0.24m x 0.23m	0.08m	1221- dark grey-silty clay	S wall (3-a)
1246	posthole	0.35m x 0.30m	0.08m	1245- dark grey-silty clay	Gable/ internal NNW orientated row of 3 postholes (3-c); may be assoc. with return row 3-b 1254/56/60 forming separate Bld.
1244	posthole	0.40m x 0.35m	0.15m	1243- dark grey-silty clay	Gable/ internal middle of NNW orientated row of 3 postholes (3-c);
1248	posthole	0.30m x 0.24m	0.05m	1247- dark grey-silty clay	E-W row of 2 postholes, parallel to row 3-b, may be

					related
1250	posthole	0.20m x 0.20m	0.07m	1249- dark grey-silty clay	E-W row of 2 postholes, parallel to row 3-b, may be related
1242	posthole	0.34m x 0.22m	0.07m	1241- dark grey-silty clay	E-W row of postholes (3-d); may lie within footprint of building associated with 3-a?
1240	posthole	0.26m x 0.21m	0.13m	1239- dark grey-silty clay	E-W row of postholes (3-d); may lie within footprint of building?
1238	posthole	0.50m x 0.29m	0.08m	1237- dark grey-silty clay	E-W row of postholes (3-d); may lie within footprint of building?
1690	posthole	0.17m x 0.16m	unexc	dark grey- silty clay	NE corner of structure?, row (3-e)
1688	posthole	0.52m x 0.35m	unexc	dark grey- silty clay	NE corner of structure?, row (3-e)
1689	posthole	0.22m x 0.17m	unexc	dark grey- silty clay	NE corner of structure?, row (3-e), lies slightly to E of the row
1687	posthole	0.28m x 0.27m	unexc	dark grey- silty clay	NE corner of structure?, row (3-e)
1686	posthole	0.31m x 0.29m	unexc	dark grey- silty clay	NE corner of structure?, row (3-e)
1262	posthole	0.26m x 0.26m	0.10m	1261- dark grey-silty clay	SSW alignment of 4 postholes (possibly incorporating 1252, 1264) outlying to S of Bld, (3-f)
1266	posthole	0.20m x 0.20m	0.05m	1265- dark grey-silty clay	SSW alignment of 4 postholes (possibly incorporating 1252, 1264) outlying to S of Bld, (3-f)
PBS 7					
1468	posthole	0.19m x 0.18m	0.15m	1469- grey brown-sandy silt	-
1470	posthole	0.28m x 0.20m	0.17m	1471- grey brown-sandy silt	-
1472	posthole	0.30m x 0.26m	0.10m	1473- grey brown-sandy silt	-
1392	posthole	0.46m x 0.41m	0.15m	1393- grey brown-sandy silt	-
1482	posthole	0.34m x 0.34m	-	grey brown-sandy silt	-
1390	posthole	0.59m x 0.43m	0.14m	1391- grey brown-sandy silt	Env. Sample 22- refer chapter 6 Radiocarbon date cal AD 770-970/SUERC-75838
1458	posthole	0.41m x 0.30m	0.16m	1459- grey brown-sandy silt	-
1460	posthole	0.35m x 0.33m	0.07m	1461- grey brown-sandy silt	-
1462	posthole	0.29m x 0.27m	0.11m	1463- grey brown-sandy silt	-
1464	posthole	0.39m x 0.34m	0.05m	1465- grey brown-sandy silt	-
1718	posthole	0.39m x 0.34m	-	grey brown-sandy	-

				silt	
1842	posthole	0.30m x 0.28m	-	grey sandy silt	-
1456	slot	2.34m x 0.56m	0.21m	1457- mixed grey brown-sandy silt and orangey brown sandy silt	-
1483	posthole	0.22m x 0.20m	-	grey brown-sandy silt	-
1485	Gully/slot?	0.46m x 0.30m	-	grey brown-sandy silt	-
1484	posthole	0.23m x 0.22m	-	grey brown-sandy silt	-
1843	posthole	0.31m x 0.31m	-	grey sandy silt	-
1486	Gully?	1.90m x 0.26m	0.02m	1844- grey brown-sandy clayey silt	-
1466	Gully	1.33m x 0.36m	0.10m	1467- grey brown-sandy silt	-
1474	Gully	2.66m x 0.54m	0.15m	1475- grey brown-sandy silt	-
PBS 24					
1697	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
1698	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
1699	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
1700	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
1701	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
PBS 25					
1692	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
1693	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
1694	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
1695	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
1696	posthole	0.20m x 0.20m	Unexc.	grey-silty clay	-
Other features in Area 1					
1220	pit	1.78m x 1.00m	0.28m	1219-greyish black silt clay	SF8 metal debris refer chapter 9 Env. sample10- refer chapter 6
SFB 3					
1397	Pit cut	3.67m x 3.18m	0.64m	1396, 1395, 1394	-
1394	Fill of 1397	2.40m x 2.20m	0.27m	grey silty clay, charcoal flecks and small fragments of stone	-
1395	Fill of 1397	3.00m x 2.40m	0.30m	brown sandy clay with occ. stone frags.	-
1396	Fill of 1397	3.48m x 3.24m	0.18m	grey silty clay	Env. sample24- refer chapter 6 Radiocarbon date cal AD 770-980/SUERC-75840

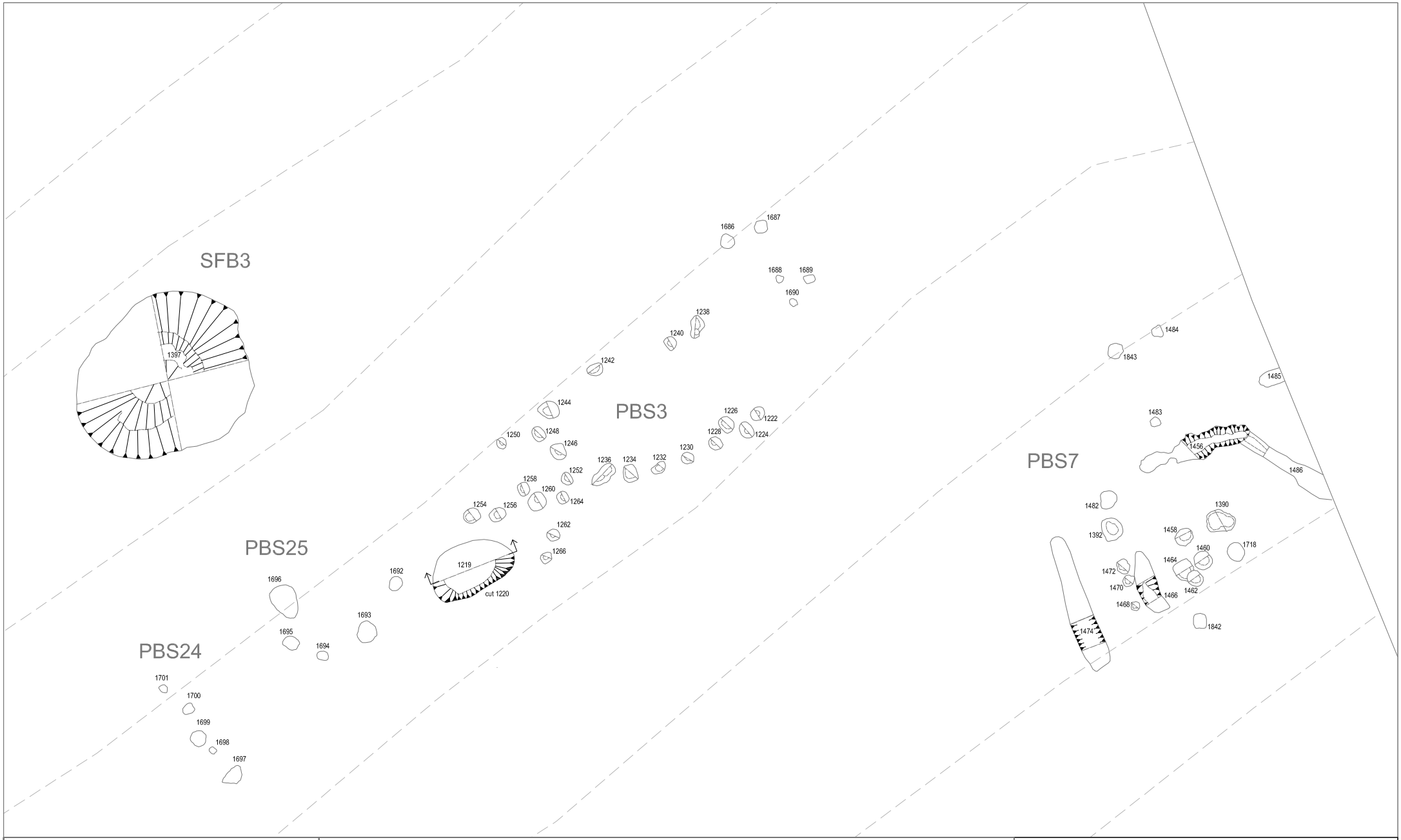


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Figure 7: Plan of Area 2

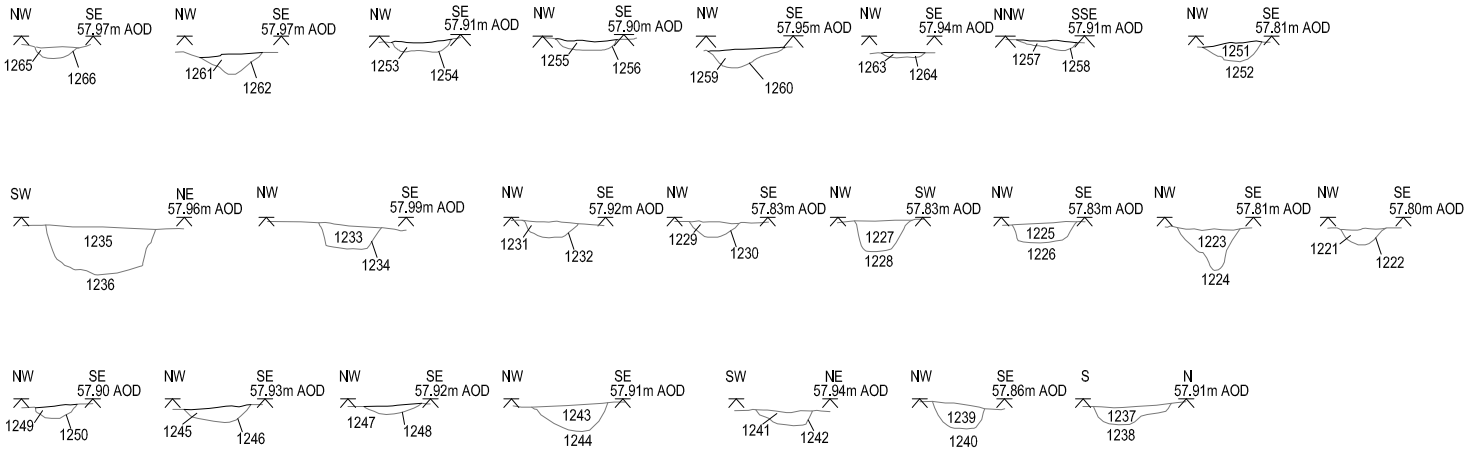
N

0 5m

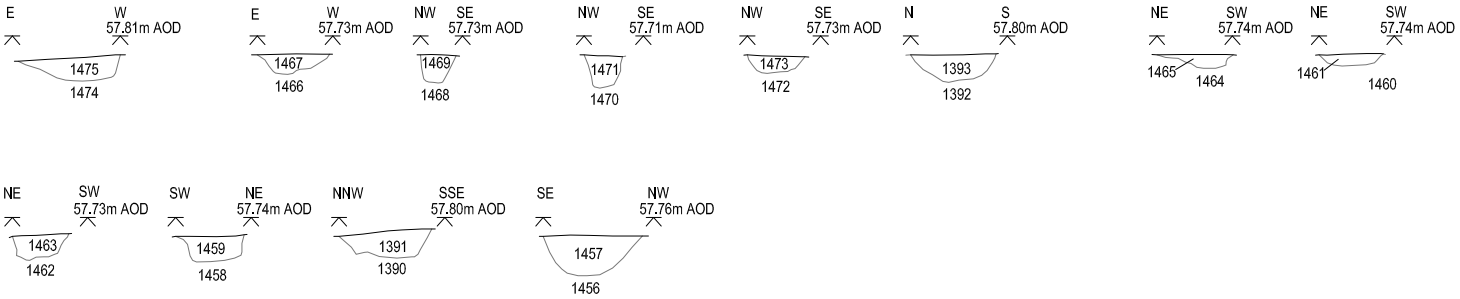
scale 1:100 at A4 plot

Felton Strip and record, Nothumberland
Project number 199

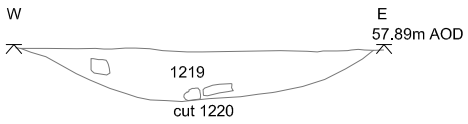
PBS 3



PBS 7



Other sections from Area 2



SFB 3 see fig. 18

AD Archaeology Ltd on behalf of Bellway Homes	Figure 8: Sections from Area 2	0 1m scale 1:40 at A4 plot Felton Strip and record, Northumberland Project number 199

5.2.6 AREA 3 (figs. 9, 10, 25, plates 9, 10)

5.2.6.1 Area 3 in the east central portion of the site contained a complex arrangement of postholes that were open to a number of possible interpretations and may belong to approximately 7 structures, including fence lines as well as possible free standing buildings (PBS2, 8, 9, 11, 12, 13, 23). In common with elsewhere on the site, with the exception of one small area (PBS12), no features survived within the footprint of the later furrows which had evidently truncated many of the structures to the extent that their complete building footprint cannot be identified with confidence. Two flakes of flint debitage (fill 1531, SF11) were recovered within the fill of posthole 1530 assigned to PBS 10. These finds are most likely to be residual, but if not this posthole and maybe others in the vicinity are potentially prehistoric in origin. The posthole was the only one excavated in PBS 10 and the flint was visible in the surface of the feature prior to its excavation.

PBS 2 (plate 9)

5.2.6.2 PBS 2 was located in the central portion of Area 3. The southern and eastern walls were the only wall alignments that could be identified with some level of confidence. The southern wall of the building was the most clearly defined with a 6m long alignment of postholes (1194, 1218, 1174/76/78/80/86/88/90) orientated ENE-WSW. It was notable that the row lay on the same axis as at least four postholes to the WSW that were more widely spaced and may represent a heavily truncated former fence line extending for another 7.7m in that direction. Posthole 1172 from PBS11 was cut by posthole 1174 of the PBS2 south row, which was itself intersected or formed a double post-setting with posthole 1176 to the north.

5.3.6.3 Posthole 1172 represented the westernmost of a row of postholes forming PBS 11 (refer 5.2.6.12) that lay on a similar though slightly more eastwards orientation to those of PBS2 and may represent an earlier phase of activity.

5.2.6.4 An outlying posthole (1192) lay to the south of the westernmost posthole (1190) from the south row with another narrow sub-rectangular cut (1202) 0.8m to the south of it that was in turn mirrored by another cut (1724) 1.7m to the northeast. The shape of cuts 1202 and 1724 may reflect timber impressions rather than simply postholes (see table 3 below).

5.2.6.5 The eastern wall, or at least one phase of the PBS 2 wall, was represented by an irregular line of four postholes (1194/96/98, 1200) that extended for 3.85m in a NNW orientation. To the north-east of this wall line was a small outlying posthole (1202). It is unclear whether a number of postholes (1218, 1182/84/98, 1204/06/08/10/12/14/16) located within the footprint of this building as defined by the southern and eastern wall alignments represented internal features or derived from other phases of a structure at this location. An environmental assessment of posthole 1194 (fill 1193, sample 9, chapter 6) contained calcined bone, semi-vitrified fuel waste, oats and seaweed.

PBS 8 (plate 10)

5.2.6.6 PBS 8 in the north-eastern quadrant of the site consisted of two rows of postholes, truncated across the west and north side by a furrow. The two rows of postholes (8-a, 8-b) were orientated north-south and east-west and may represent the south and east walls of a building. The east row consisted of four equidistant postholes (1737, 1540, 1542, 1744) arranged at approximately 0.70m intervals, one of which (1540) was excavated. Posthole 1540 was relatively deep compared with many surviving on the site and measured 0.55m by 0.33m by 0.23m in depth; it was sub-oval in plan with steep sides that was stepped on the north side with a flat base that measured 0.20m across. The fill (1541) consisted of greyish brown sandy clayey silt with few inclusions.

5.2.6.7 The postholes of the south wall (1550,1740, 1545/43/49/48) lay 1m to the west of the east wall with no corner post present in the southeast corner of the putative building. Two postholes (1740, 1545) from the row were visible as one contiguous feature when initially exposed, prior to subsequent weathering, suggesting that the postholes may have originally lain within a shallow trench. Postholes 1543 and 1545 along the row were excavated and in plan were sub-circular and measured up to 0.15m in depth. Posthole (1551) lay within the interior of the putative building and may represent an internal feature. Several other postholes of uncertain purpose were recorded in the immediate area outside the footprint of the building: posthole 1539 lay 0.6m east of posthole 1540 from the east wall (row 8-b); and three postholes (1741, 1742, 1743) lay to the south of the south wall (row 8-a).

PBS 9/ 10/ 12

5.2.6.8 A concentration of postholes along the eastern edge of the site in Area 3 were difficult to interpret as coherent patterns from recognisable structures, despite this there are discernible differences in the general alignments of some groups of postholes, that may indicate separate structures which have been assigned separate PBS numbers (PBS 9, 10, 12).

PBS 9 (9-a, 9-b)

5.2.6.9 PBS 9 encompasses two principal components (9-a, 9-b) occupying a relatively small overall area of 3.55m by 3.2m. A small rectangular arrangement of postholes lay on the west side of the PBS (9-a), with another layout to its east side (9-b), which were all orientated in a general north-south or east-west direction. Postholes (1755, 1521/10/14) formed the four corners of a rectangular pattern (9-a) defining an area of only 1.5m by 2.6m. Four postholes (1510/12/13/14) lay along the northern side and with opposing postholes (1757, 1759) approximately midway along the long sides. Three postholes (1511, 1515, 1756) lay within its interior which may be associated.

5.2.6.10 A row of four postholes (1509, 1506, 1505, 1504) ran along the north edge of the western group of postholes (9-b). A further posthole (1507) lay perpendicular at a short distance to the south. A north-south row of three postholes (1508, 1516, 1519) extended south for 2.18m from the west side of posthole 1507. An east-west

row of four postholes (1515, 1758, 1520, 1516) extended west across 9-a, from posthole 1516 at the centre of the north-south row (9-b).

PBS 10

5.2.6.11 PBS 10 is composed of several irregular lines of postholes of varying length and orientation which follow a different ENE-SSW or NNW-SSE layout from the neighbouring PBS 9 alignment. The postholes occupied a total overall area of approximately 5.2m by 3.4m. A line of postholes was orientated NNW (10-a; 1528/29/30, 1753) with a fifth pair of postholes (1747/48) at the southern end. Posthole 1753 near the south end of row 10-a also formed part of a row (10-b; 1752/53/54/40) that ran perpendicular to it. Another posthole row (10-e; 1756, 1529, 1536) lay 1.5m to the north of row 10-b, which also incorporated a posthole of row 10-a. There was a large gap of over 3m between the postholes at the western ends of rows 10-b and 10-e and the next postholes along the rows. Within this gap were several features (5.2.6.16) including a reddened area of clay subsoil (1768) that may have been heat-affected. It was also notable that postholes 1759 and 1755 of PBS9 (10-b, 10-e) also lie within alignments that may instead belong to PBS 9 (refer 5.2.6.9). A further ENE orientated line of five postholes joined the south end of the north-south row 10-a (10-d; 1745, 1747, 1748, 1543, 1750). Postholes 1759 and 1755 also line up with postholes 1751 and 1750 at the east end of row 10-c to form a posthole row that runs parallel to row 10-a. Two Flint debitage flakes (fill 1531, SF11) were recovered from posthole 1530 of row 10-a (refer 5.2.6.1). The posthole was sub-oval in plan and in profile had steep sides with a flattish base.

PBS 11 (plate 9)

5.2.6.12 The purpose of PBS 11 is uncertain, it was formed by an ENE line of postholes (1172/70/68/66/64) immediately south of PBS2, the westernmost of which (1172) was cut by posthole 1174 from PBS2. It lies on an ENE orientation slightly different, to the putative south wall of PBS2. During excavation it was initially assumed that the postholes represent repairs or another phase of the PBS2 wall line, although it was noted that the easternmost two postholes (1164 and 1166) lay beyond the line of the eastern wall (1194, 1196, and 1200) of PBS2.

PBS12

5.2.6.13 PBS 12 is represented by two short lines of roughly parallel postholes (0.60m apart) which follow a slightly different NE-SW layout from neighbouring PBS9 and PBS10. The northern row of postholes (1763/64/65) consisted of three equispaced postholes that extend for a distance of 2.3m. The southern row of postholes consisted of three postholes (1760, 1526, 1761), with two additional postholes which lies (1762, 1525) slightly off centre to the south. The purpose of the postholes is unclear, and they may equally represent a remnant of fence lines or a structure.

PBS 13

5.2.6.14 PBS 13 may represent a fence line or heavily truncated building and is composed of two short lines of postholes orientated east-west - north-south. The east-west row of postholes (1704, 1705, 1706) consisted of three equispaced

postholes that extend for a distance of 3.5m. The north-south row of postholes consisted of three postholes (1704, 1703, 1702), the second one of which lay (1703) slightly off centre to the east.

PBS 23

5.2.6.15 PBS 23 was located 3.6m west of PBS13 and consisted of a row of seven postholes (1707/08/09/10/11/13/15) orientated northwest - southeast, truncated at either end by later furrows, two further postholes (1730, 1732) on the same axis 4.7m to the south may be related. The seven postholes extended for 3.8m in length and were regularly spaced between 0.53m and 0.64m apart. The northernmost posthole (1715) lay slightly off axis towards the west. The two postholes (1730, 1732) at the southern end lay immediately north of a perpendicular line of widely spaced postholes (1726/25/28/24/34) that may represent a heavily truncated ENE-WSW fence line with which they were associated.

Additional features in Area 3

5.2.6.16 A cluster of features lay on or within the western side of PBS10 bounded by postholes (1540 and 1538 from row 10-b and 10-e on the western side. Two postholes (1534, 1539) lay to the east of postholes 1538/40 on either side of a linear feature (1536). Feature 1536 probably represents a pit or posthole/slot and lay on the same NNW axis as postholes 1538/40. It was oblong in plan and measured 0.90m in length by 0.34m by 0.26m in depth and in profile had steep sides and a flattish base. The fill consisted of grey sandy silt with few inclusions (1537). An area of red coloured natural clay subsoil (1768) measuring 0.72m by 0.93m was observed to the east of feature 1536. The reddened colour may reflect an area of intense burning from a feature such as a hearth for which there was no other evidence on the site despite clear evidence that metalworking was undertaken at the settlement (refer chapter 7).

5.2.6.17 Several postholes were aligned on a broad ENE axis, and in-line with the principal row of postholes from PBS2, 3.2m to the east suggesting they may have been contemporary perhaps representing the remnant of a fence line. The eastern end was formed by a pair of postholes (1725, 1726) with the next posthole (1728) 1.6m to the southwest, followed by posthole 1730, 2.6m away to the southwest. Another posthole (1734) lay slightly off centre 4.6m away to the southwest. Two postholes (1732, 1730) that may be associated with the fence line of PBS 23 lie immediately northwest of posthole 1728 running perpendicular from it.

5.2.6.18 Two postholes (1722, 1723) lay 2.6m to the northeast of PBS 2. An oblong feature (1766) lay to the north of PBS12 both of which lay within the footprint of a later furrow. Feature 1766 measured 0.81m in length and probably represented two interconnected postholes.

Table 3-**Features in Area 3**

context	Description	Max. dimensions	Depth	Fill	Comments
PBS 2					
1192	posthole	0.42m x 0.32m	0.10m	1191-grey-brown silty clay	external? S of S wall
1190	posthole	0.47m x 0.30m	0.17m	1189- grey-brown silty clay	S wall
1188	posthole	0.51m x 0.44m	0.26m	1187-grey-brown silty clay	S wall
1186	posthole	0.47m x 0.38m	0.11m	1185-grey-brown silty clay	S wall
1180	posthole	0.32m x 0.30m	0.20m	1179- grey-brown silty clay	S wall, intersects with posthole 1178
1178	posthole	0.40m x 0.28m	0.07m	1177- grey-brown silty clay	S wall, intersects with posthole 1180
1174	posthole	0.40m x 0.40m	0.22m	1173-grey-brown silty clay	S wall, cuts 1172 and intersects with posthole 1176
1176	posthole	0.30m x 0.30m	0.19m	1175-grey-brown silty clay	S wall, intersects with posthole 1174
1218	posthole	0.36m x 0.30m	0.13m	1217-grey-brown silty clay	Posthole to N of S wall
1194	posthole	0.60m x 0.50m	0.17m	1193-grey-brown silty clay	E wall Env. sample 9- refer chapter 6
1196	posthole	0.60m x 0.52m	0.20m	1195-grey-brown silty clay	E wall
1198	posthole	0.27m x 0.23m	0.08m	1197-grey-brown silty clay	Posthole within footprint of building
1200	posthole	0.58m x 0.28m	0.14m	1199-grey-brown silty clay	E wall
1202	posthole	0.28m x 0.25m	0.16m	1201-grey-brown silty clay	Outlying posthole
1182	posthole	0.30m x 0.30m	0.08m	1181- grey-brown silty clay	Posthole within the footprint of the building
1184	posthole	0.30m x 0.22m	0.07m	1183-grey-brown silty clay	Posthole within the footprint of the building
1204	posthole	0.38m x 0.32m	0.06m	1203-grey-brown silty clay	posthole within footprint of building
1206	posthole	0.52m x 0.35m	0.10m	1205-grey-brown silty clay	Posthole within footprint of building
1208	posthole	0.35m x 0.27m		1207-grey-brown silty clay	Posthole within footprint of building
1210	posthole	0.35m x 0.16m	0.06m	1209-grey-brown silty clay	Posthole within footprint of building
1212	posthole	0.35m x 0.16m	0.08m	1211-grey-brown silty clay	Posthole within footprint of building
1214	posthole	0.14m x 0.13m	0.15m	1213- grey-brown silty clay	Posthole within footprint of building
1216	posthole	0.42m x 0.30m	0.10m	1215-grey-brown silty clay	Posthole within footprint of building
PBS 11					
1164	posthole	0.26m x 0.25m	0.11m	1163-grey silty clay	may be assoc. with PBS 2
1166	posthole	0.42m x 0.32m	0.22m	1165-grey-brown silty clay	may be assoc. with PBS 2
1168	posthole	0.42m x 0.34m	0.15m	1167- grey-brown silty clay	may be assoc. with PBS 2
1170	posthole	0.56m x 0.46m	0.10m	1169- grey-brown silty clay	may be assoc. with PBS 2
1172	posthole	0.45m x 0.30m	0.13m	1171-grey-brown silty clay	may be assoc. with PBS 2 cut by posthole 1174
PBS 8					
1550	posthole	0.39m x 0.35m	-	grey-brown clayey sandy silt	S wall?, row 8-a
1740	posthole	0.35m x 0.34m	-	grey-brown clayey sandy	S wall?, row 8-a originally

				silt	visible as one feature with 1545
1545	posthole	0.41m x 0.41m	0.15m	1546- grey-brown clayey sandy silt	S wall?, row 8-a originally visible as one feature with 1740
1543	posthole	0.37m x 0.37m	0.12m	1544- grey-brown clayey sandy silt	S wall?, row 8-a
1548	posthole	0.23m x 0.22m	-	grey-brown clayey sandy silt	S wall?, row 8-a
1549	posthole	0.23m x 0.22m	-	grey-brown clayey sandy silt	S wall?, row 8-a
1744	posthole	0.29m x 0.21m	-	grey-brown clayey sandy silt	E wall?, row 8-b
1542	posthole	0.30m x 0.29m	-	grey-brown clayey sandy silt	E wall?, row 8-b
1540	posthole	0.55m x 0.32m	0.23m	1541 grey-brown clayey sandy silt	E wall?, row 8-b
1737	posthole	0.22m x 0.21m	-	grey-brown clayey sandy silt	E wall?, row 8-b
1539	posthole	0.65m x 0.30m	-	grey-brown clayey sandy silt	External
1551	posthole	0.40m x 0.21m	-	grey-brown clayey sandy silt	Internal?
1743	posthole	0.29m x 0.24m	-	grey-brown clayey sandy silt	External S of bld
1741	posthole	0.20m x 0.17m	-	grey-brown clayey sandy silt	External S of bld
1742	posthole	0.18m x 0.18m	-	grey-brown clayey sandy silt	External S of bld
PBS 9					
1510	posthole	0.27m x 0.30m	-	grey-brown clayey sandy silt	E-W, row 9-a, intercut with 1512
1512	posthole	0.31m x 0.28m	-	grey-brown clayey sandy silt	E-W, row 9-a, intercut with 1512
1513	posthole	0.31m x 0.22m	-	grey-brown clayey sandy silt	E-W, row 9-a
1514	posthole	0.30m x 0.22m	-	grey-brown clayey sandy silt	E-W, row 9-a, 9-b, corner post
1759	posthole	0.17m x 0.17m	-	grey-brown clayey sandy silt	N-S, row 9-b
1755	posthole	0.28m x 0.19m	-	grey-brown clayey sandy silt	N-S, row 9-b, 9-c
1521	posthole	0.20m x 0.19m	-	grey-brown clayey sandy silt	E-W, row 9-c
1757	posthole	0.25m x 0.20m	-	grey-brown clayey sandy silt	N-S, row 9-d
1758	posthole	0.20m x 0.18m	-	grey-brown clayey sandy silt	N-S, row 9-b; E-W row 9-f, intercut 1758
1520	posthole	0.20m x 0.18m	-	grey-brown clayey sandy silt	E-W row 9-f, intercut 1520
1515	posthole	0.25m x 0.19m	-	grey-brown clayey sandy silt	E-W row 9-f
1756	posthole	0.35m x 0.32m	-	grey-brown clayey sandy silt	Internal
1511	posthole	0.19m x 0.18m	-	grey-brown clayey sandy silt	internal

1508	posthole	0.21m x 0.17m	-	grey-brown clayey sandy silt	N-S, row 9-e
1516	posthole	0.22m x 0.14m	-	grey-brown clayey sandy silt	N-S, row 9-e, E-W row 9-f
1519	posthole	0.24m x 0.22m	-	grey-brown clayey sandy silt	N-S, row 9-e
1518	posthole	0.11m x 0.10m	-	grey-brown clayey sandy silt	External
1505	posthole	0.15m x 0.11m	-	grey-brown clayey sandy silt	External
1504	posthole	0.26m x 0.23m	-	grey-brown clayey sandy silt	row 9-g
1506	posthole	0.35m x 0.22m	-	grey-brown clayey sandy silt	row 9-g
1507	posthole	0.20m x 0.15m	-	grey-brown clayey sandy silt	row 9-g
1509	posthole	0.16m x 0.12m	-	grey-brown clayey sandy silt	row 9-g
PBS 10					
1528	posthole	0.25m x 0.21m	-	grey-brown sandy silt	N-S row 10-a
1529	posthole	0.37m x 0.32m	-	grey-brown sandy silt	N-S row 10-a
1530	posthole	0.31m x 0.21m	0.13m	1531- grey-brown sandy silt	N-S row 10-a 2 flint flakes (SF 11)
1753	posthole	0.23m x 0.18m	-	grey-brown sandy silt	N-S row 10-a, E-W row 10-b
1752	posthole	0.24m x 0.22m	-	grey-brown sandy silt	E-W row 10-b
1754	posthole	0.29m x 0.23m	-	grey-brown sandy silt	E-W row 10-b, another posthole (1540) 3.1m to W maybe assoc. with row
1746	posthole	0.25m x 0.18m	-	grey-brown sandy silt	N-S row 10-d
1745	posthole	0.24m x 0.17m	-	grey-brown sandy silt	E-W row 10-c
1747	posthole	0.28m x 0.23m	-	grey-brown sandy silt	E-W row 10-c
1748	posthole	0.37m x 0.28m	-	grey-brown sandy silt	E-W row 10-c
1543	posthole	0.49m x 0.35m	-	grey-brown sandy silt	E-W row 10-c
1750	posthole	0.14m x 0.11m	-	grey-brown sandy silt	E-W row 10-c
1751	posthole	0.23m x 0.20m	-	grey-brown sandy silt	N of posthole 1750 row 10-c
PBS 12					
1763	posthole	0.25m x 0.20m	-	grey-brown sandy silt	
1764	posthole	0.29m x 0.26m	-	grey-brown sandy silt	
1765	posthole	0.24m x 0.20m	-	grey-brown sandy silt	
1760	posthole	0.18m x 0.15m	-	grey-brown sandy silt	
1525	posthole	0.48m x 0.39m	-	grey-brown sandy silt	
1526	posthole	0.66m x 0.28m	-	grey-brown sandy silt	
1761	posthole	0.27m x 0.19m	-	grey-brown sandy silt	
1762	posthole	0.14m x 0.11m	-	grey-brown sandy silt	
PBS 13					
1702	posthole	0.21m x 0.22m	-	grey-brown clayey sandy silt	N-S
1703	posthole	0.35m x 0.33m	-	grey-brown clayey sandy silt	N-S
1704	posthole	0.38m x 0.32m	-	grey-brown clayey sandy silt	Corner post
1705	posthole	0.20m x 0.18m	-	grey Brown clayey sandy silt	E-W
1706	posthole	0.30m x 0.24m	-	grey-brown clayey sandy silt	E-W

PBS 23					
1730	posthole	0.29m x 0.23m	0.11m	1729-grey sandy silt	S postholes NW-SE fence line?
1732	posthole	0.22m x 0.21m	0.12m	1731-grey- sandy silt	S postholes NW-SE fence line?
1707	posthole	0.30m x 0.24m	-	grey-brown sandy silt	NW-SE fence line?
1708	posthole	0.42m x 0.33m	-	grey-brown sandy silt	intersects 1708, NW-SE fence line?
1709	posthole	0.34m x 0.26m	-	grey-brown sandy silt	intersects 1709, NW-SE fence line?
1710	posthole	0.45m x 0.30m	-	grey-brown sandy silt	NW-SE fence line?
1711	posthole	0.26m x 0.26m	-	grey-brown sandy silt	NW-SE fence line?
1713	posthole	0.31m x 0.24m	0.06m	1712-grey-brown sandy silt	NW-SE fence line?
1715	posthole	0.47m x 0.34m	0.10m	1714-grey-brown sandy silt	NW-SE fence line?
Other features in Area 3					
1534	posthole	0.28m x 0.27m	-	grey- sandy silt	W of PBS10
1536	pit/ posthole	0.90m x 0.34m	0.26m	1537-grey sandy silt	W of PBS10
1538	posthole	0.24m x 0.16m	-	grey- sandy silt	W of PBS10
1539	posthole	0.30m x 0.30m	-	grey- sandy silt	W of PBS10
1540	posthole	0.24m x 0.20m	-	grey- sandy silt	Lies on projected line of row 10-b of PBS10 postholes 3.1m to E
1768	reddened clay	0.93m x 0.71m	-	red clay	Stained/ heat effected natural clay subsoil
1766	posthole	0.81m x 0.31m	-	grey- sandy silt	survived within furrow
1722	posthole	0.30m x 0.28m	-	grey- sandy silt	E of PBS2
1723	posthole	0.31m x 0.30m	-	grey- sandy silt	E of PBS2
1725	posthole	0.38m x 0.37m	-	grey- sandy silt	NW-SE fence line?
1726	posthole	0.43m x 0.39m	-	grey- sandy silt	NW-SE fence line?
1728	posthole	0.39m x 0.28m	0.18m	1727-grey- sandy silt	NW-SE fence line?
1739	posthole	0.38m x 0.29m	0.23m	1738-grey- sandy clayey silt	NW-SE fence line?
1734	posthole	0.57m x 0.41m	0.14m	1733-grey- sandy clayey silt	NW-SE fence line?

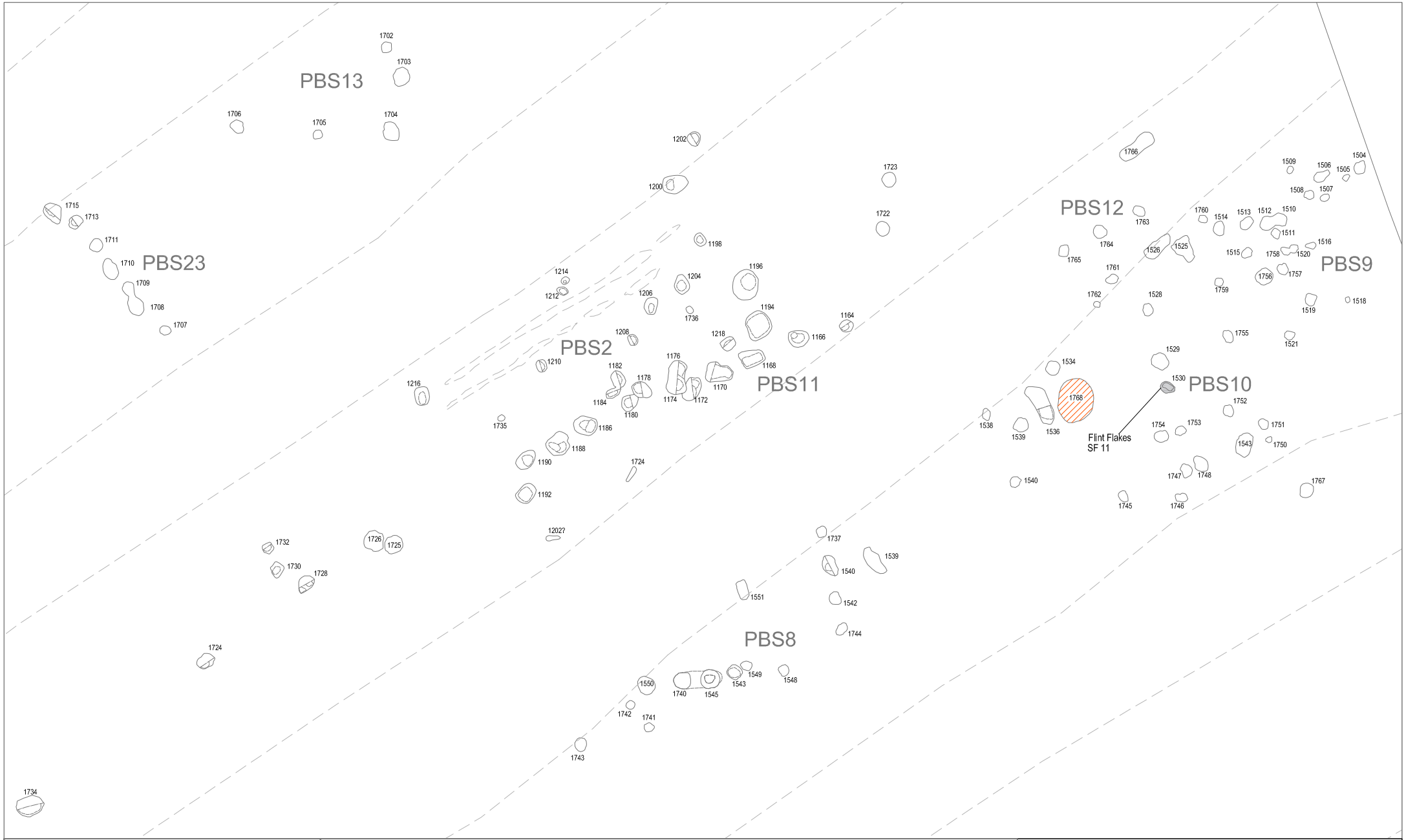


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Figure 9: Plan of Area 3 showing buildings 2, 8 & 11

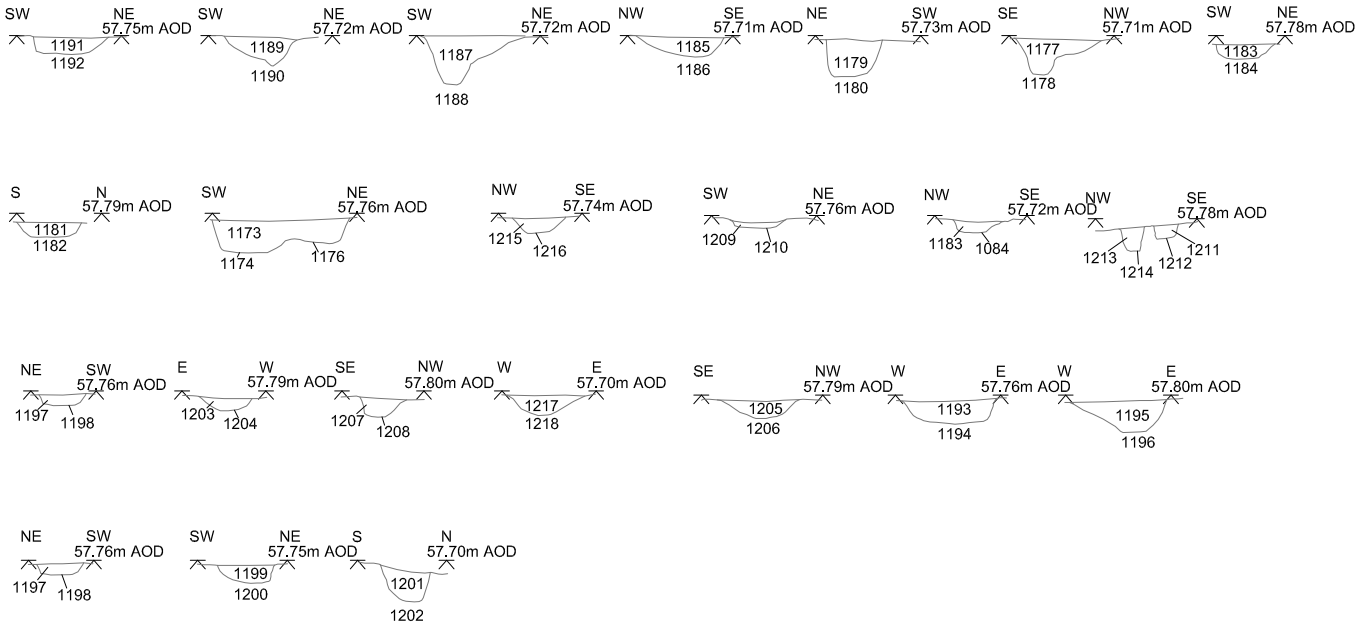
N

0 5m

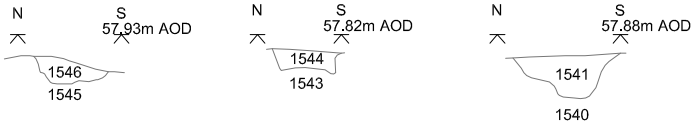
scale 1:100 at A4 plot

Felton Strip and record, Nothumberland
Project number 199

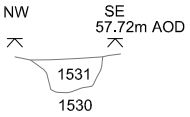
PBS 2



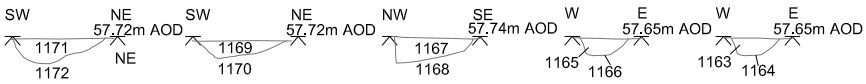
PBS 8



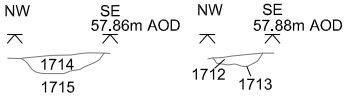
PBS 10



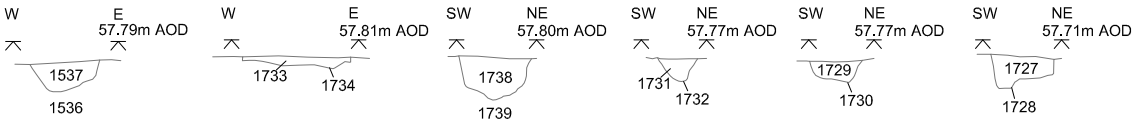
PBS 11



PBS 23



Additional sections in Area 3



AD Archaeology Ltd on behalf of Bellway Homes	Figure 10: Area 3 sections	0 1m scale 1:40 at A4 plot Felton Strip and record, Northumberland Project number 199

5.2.7 AREA 4 (figs. 11, 12, 25, plate 11)

5.2.7.1 Area 4 lies in the central portion of the site and contained two concentrations of postholes belonging to PBS 1 and PBS 14 which are likely to represent buildings. Several isolated pits and postholes were also identified within the area. In common with elsewhere on the site with the exception of one small area of PBS1 no features survived within the footprint of the later furrows which had evidently truncated much of the structures to the extent that extent of a building footprint cannot be identified with certainty. Bayesian analysis of radiocarbon determinations suggests that PBS 1 was contemporary with PBS 5 (chapter 10, p76).

PBS 1 (plate 11)
5.2.7.2 PBS 1 measured approximately 6.5m by 3.25m. A furrow is likely to have removed the north wall of the building.

5.2.7.3 The southern wall of the building (1124/26/23/32/34/38/40/42/48/50/ 54) was clearly defined, an contained a number of intercutting postholes which potentially may be indicative of repairs along its length or simply the excavation of tightly spaced postholes (see below). Toward its eastern end the southern wall line survived as three evenly spaced postholes (1154, 1150 and 1148) *c*.1m-0.9m apart (measured from centre point of each feature). The central and western portion of the wall consisted of two intercutting postholes (1134 and 1132) and two sets of three intercutting postholes (1142, 1140 and 1138; and 1128, 1126 and 1124). Their fills, comprising of grey-brown silty clay, were indistinguishable and it was not possible to determine relationships or establish whether certain postholes were replacements. It is possible that posthole (1146) which was offset 0.5m to the south of posthole 1150 may represent a raking timber, supporting the southern wall. A 5m long alignment of smaller postholes (1156, 1164, 1152, 1144, 1136 and 1130) lay 0.50-0.60m to the north and parallel to the southern wall, which may represent a different structural phase of this building. It is possible that posthole 1156 may form one component of the eastern gable wall (1154, 1156, 1158 and 1160). An environmental assessment of posthole 1140 (fill 1139, sample 6, chapter 6) contained calcined bone, charcoal, seaweed and oats. A radiocarbon date was produced from posthole 1140 (see below, and chapter 10).

5.2.7.4 The northern wall was very poorly preserved being cut by the southern side of a furrow with only four postholes (1160, 1162, 1112 and 1114) surviving along its projected line. The western gable wall was indistinct with four postholes (1116, 1118, 1120 and 1122), in a tight group probably marking part of its former line.

PBS 14
5.2.7.5 PBS14 was situated 9.7m northwest of PBS 1 in the northwestern quadrant of the site and consisted of a row of postholes orientated ENE-WSW. It may represent the surviving long wall of a Building, truncated elsewhere to the north or south by a later furrow that runs either side or alternatively the remnant of a structure with one principal row of load-bearing posts. The row of postholes

measured 6.85m in length and may originally have extended further. The postholes were all tightly spaced with the exception of a 0.6m gap midway along its length which may represent a narrow entranceway. Two postholes (1102, 1100) that lay immediately south of the main row may represent repairs along the wall. Many of the postholes along the east portion were intercut; although it is possible that some may represent later repairs, there was no indication from the fills that they were not all contemporary.

Other Features in Area 4

5.2.7.6 Several pits and postholes were identified in Area 4, six of which lay a short distance from PBS 1. A pair of postholes (1607, 1609) spaced 0.82m apart, lay 1.2m west of the putative western gable of PBS 1 following the central axis of the building. The postholes lay on the southern edge of a later furrow and may have originally extended further westwards perhaps representing part of a fence line aligned and contemporary with PBS 1. Another pair of postholes (1601, 1603) spaced 1.2m apart, lay 2.07m south of the west end of PBS 1. They also lay on the edge of a later furrow which may have truncated any other postholes along this alignment, particularly as they only survived to a depth of 0.04m. An isolated posthole (1605) lay 3.8m southwest of PBS 1 and 2m SSW of posthole 1607. A large posthole (1734) lay 3.8m to the ENE of PBS 1 also lying along the central axis of the building as its counterparts to the west (1607, 1609) and possibly relating to a fence line heading ENE towards PBS 2 (refer 5.2.6.17). A pit (1717) lay 4.3m north of PBS 1 with a posthole (1716) 3.33m to the west. The pit (1717) was kidney-shaped in plan and measured 1.13m by 0.5m

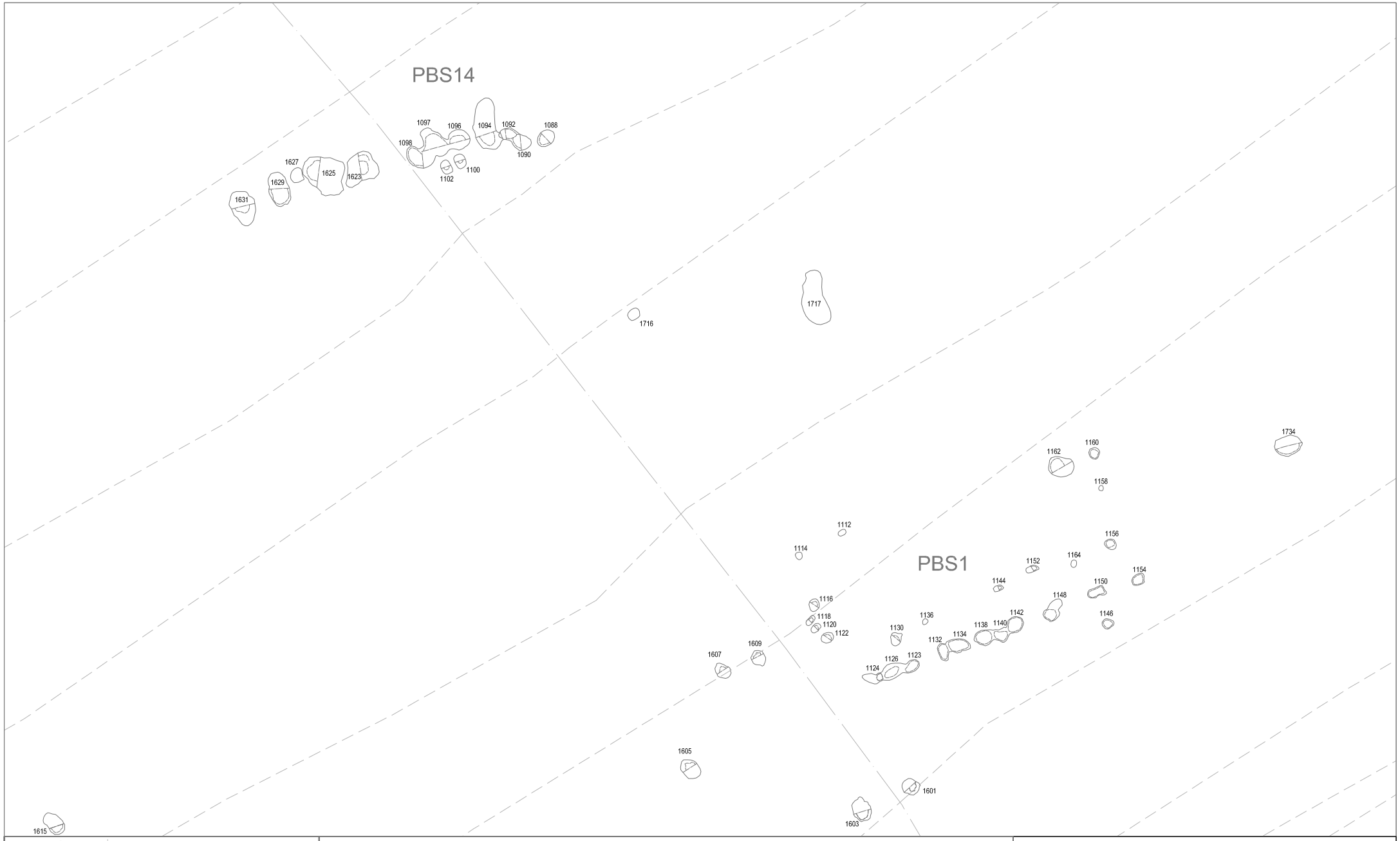
Radiocarbon dating

PBS1 - Fill1139, posthole 1140. cal AD 660-780 (SUERC-75834).

Table 4-**Features in Area 4**

context	Description	Max. dimensions	Depth	Fill	Comments
PBS 1					
1154	posthole	0.25m x 0.22m	0.05m	1153-grey-brown silty clay	S &E wall
1150	posthole	0.40m x0.17m	0.12m	1149-grey-brown silty clay	S wall
1148	posthole	0.42m x 0.25m	0.12m	1148- grey-brown silty clay	S wall
1142	posthole	0.38m x 0.30m	0.12m	1141-grey-brown silty clay	S wall, intercutting with 1140
1140	posthole	0.35m x 0.28m	0.13m	1139-grey-brown silty clay	S wall, intercutting with 1142 & 1138 Env. Sample 6 refer chapter 6 Radiocarbon date cal AD 660-780/SUERC75834
1138	posthole	0.40m x 0.33m	0.09m	1137-grey-brown silty clay	S wall, intercutting with 1140
1134	posthole	0.40m x 0.27m	0.19m	1133-grey-brown silty clay	S wall, intercutting with 1132
1132	posthole	0.35m x 0.22m	0.13m	1131-grey-brown silty clay	S wall, intercutting with 1132
1128	posthole	0.40m x 0.25m	0.20m	1127-grey-brown silty clay	S wall, intercutting with 1126
1126	posthole	0.40m x 0.30m	0.10m	1125-grey-brown silty clay	S wall, intercutting with 1128 & 1124
1124	posthole	0.48m x 0.20m	0.10m	1123-grey-brown silty clay	S wall, intercutting with 1126

1156	posthole	0.22m x 0.22m	0.10m	1155-grey-brown silty clay	E wall
1158	posthole	0.08m x 0.08m	Unexc	1157-grey-brown silty clay	E wall
1160	posthole	0.24m x 0.24m	0.11m	1159-grey-brown silty clay	E & N wall
1162	posthole	0.50m x 0.50m	0.08m	1161-grey-brown silty clay	N wall
1112	posthole	0.18m x 0.15m	Unexc.	1111-grey-brown silty clay	N wall
1114	posthole	0.15m x 0.15m	Unexc.	1113-grey-brown silty clay	N wall
1116	posthole	0.25m x 0.22m	0.04m	1115-grey-brown silty clay	W wall
1118	posthole	0.22m x 0.11m	0.03m	1117-grey-brown silty clay	W wall
1120	posthole	0.20m x 0.11m	0.03m	1119-grey-brown silty clay	W wall
1122	posthole	0.26m x 0.20m	0.06m	1121-grey-brown silty clay	W wall
1146	posthole	0.24m x 0.20m	0.07m	1145-grey-brown silty clay	?raking timber
1164	posthole	0.16m x 0.11m	-	1163-grey-brown silty clay	E-W alignment of postholes
1152	posthole	0.28m x 0.13m	0.05m	1151-grey-brown silty clay	E-W alignment of postholes
1144	posthole	0.20m x 0.12m	0.05m	1143-grey-brown silty clay	E-W alignment of postholes
1136	posthole	0.10m x 0.10m	Unexc.	1135-grey-brown silty clay	E-W alignment of postholes
1130	posthole	0.25m x 0.22m	0.09m	1129-grey-brown silty clay	E-W alignment of postholes
PBS 14					
1631	posthole	0.76m x 0.47m	0.15m	1230- grey-brown sandy silt	-
1629	posthole	0.73m x 0.43m	0.14m	1228- grey-brown sandy silt	-
1627	posthole	0.29m x 0.26m	0.06m	1226- grey-brown sandy silt	-
1625	posthole	0.87m x 0.78m	0.11m	1224- grey-brown sandy silt	-
1623	posthole	0.75m x 0.56m	0.13m	1222- grey-brown sandy silt	-
1098	posthole	0.42m x 0.40m	0.23m	1099- grey-brown sandy silt	-
1097	posthole	0.64m x 0.52m	0.21m	1099- grey-brown sandy silt	-
1096	posthole	0.41m x 0.38m	0.17m	1099- grey-brown sandy silt	-
1102	posthole	0.32m x 0.24m	0.08m	1103- grey-brown sandy silt	-
1100	posthole	0.34m x 0.26m	0.11m	1101- grey-brown sandy silt	-
1094	posthole	1.12m x 0.46m	0.17m	1095- grey-brown sandy silt	-
1092	posthole	0.43m x 0.32m	0.13m	1093- grey-brown sandy silt	-
1090	posthole	0.48m x 0.33m	0.10m	1091- grey-brown sandy silt	-
1088	posthole	0.39m x 0.32m	0.16m	1089- grey-brown sandy silt	-
Other features in Area 4					
1734	posthole	0.57m x 0.41m	0.14m	1733- grey sandy clayey silt	Fence line heading ENE Also lies on same central axis as 1601, 1603 & centre of PBS1
1601	posthole	0.36m x 0.34m	0.04m	1600- grey sandy silt	Paired with 1603
1603	posthole	0.51m x 0.37m	0.04m	1602- grey-brown sandy silt	Paired with 1601
1605	posthole	0.46m x 0.33m	0.07m	1604- grey-brown sandy silt	-
1607	posthole	0.37m x 0.31m	0.04m	1606- grey sandy silt	Paired with 1609
1609	posthole	0.35m x 0.28m	0.04m	1608- grey-brown sandy silt	Paired with 1607
1716	posthole	0.27m x 0.21m	-	grey-brown sandy silt	Unexc.
1717	pit	0.39m x 0.32m	-	grey-brown sandy silt	Pit Unexc.



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Bellway Homes

Figure 11: Plan of Area 4

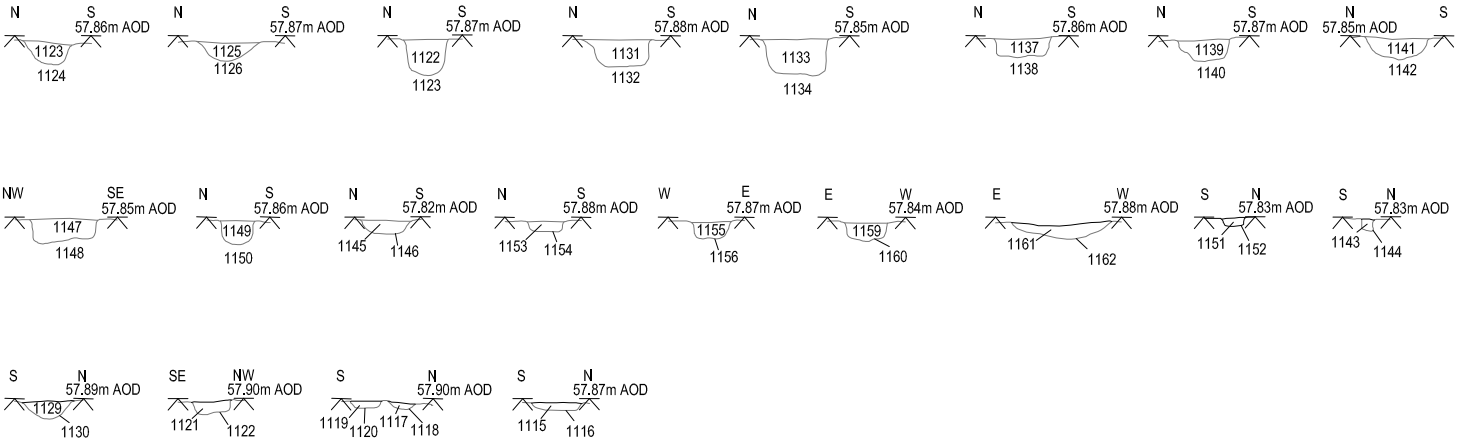
N

0 5m

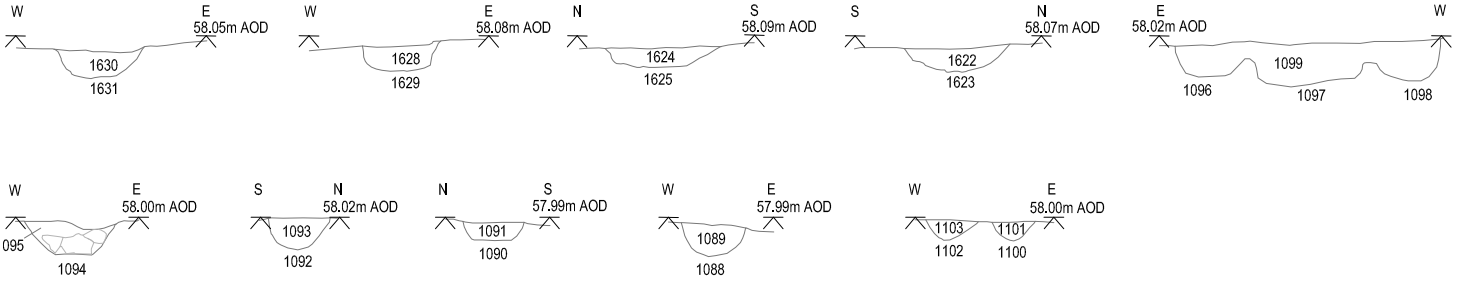
scale 1:100 at A4 plot

Felton Strip and record, Nothumberland
Project number 199

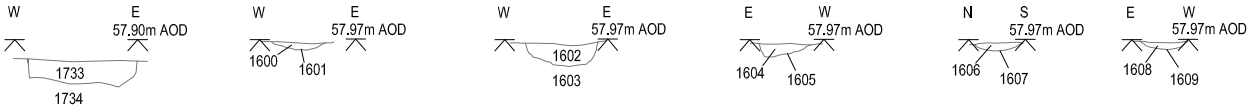
PBS 1



PBS 14



Additional sections in Area 4



AD Archaeology Ltd on behalf of Bellway Homes	Figure 12: Area 4 Sections	0 1m scale 1:40 at A4 plot Felton Strip and record, Northumberland Project number 199

5.2.8 AREA 5 (figs. 13, 14, 25, plates 12, 13)

5.2.8.1 Area 5 lies in the southeast quadrant of the site and contained a number of postholes in several different groupings, including two east-west linear alignments, PBS 4, PBS 6 that may represent the surviving walls of two buildings, one large building or fence lines. A gully (1270) ran alongside PBS 4 which is likely to be contemporary. Another short length of gully also had postholes (PBS20) alongside the northern side. Linear alignments PBS 19 and PBS 20 probably represent fence lines, and elsewhere the purpose of a tight cluster of four postholes (PBS 21) is uncertain. A similar arrangement of postholes to PBS 21 was located 13m to the south (PBS 22, 27, see 5.2.9). In common with elsewhere on the site few features survived within the footprint of the later furrows which had evidently truncated much of the structures to the extent that a building footprint or fence line cannot be identified with certainty. Analysis of radiocarbon dates from PBS 4 and gully 1839 suggest they may be contemporary (chapter 10, p76).

PBS 4 (plate 12)

5.2.8.2 PBS 4 consisted of a row of postholes orientated ENE-WSW that extended for 10.1m alongside the north edge of gully 1270 (see 5.2.8.9). The row of postholes may represent the surviving long wall of a heavily truncated structure or simply a fence line. The original length of this row is uncertain as it continues at either end up to the edge of the later furrows suggesting that it may have originally extended further. Pit 1042 (refer 5.2.8.11) lay within the footprint of the furrow, 2m to the east on approximately the same axis as three of the postholes (1290, 1292, 1316) from the northern edges of the row perhaps indicative of its original continuation. Several postholes (1288, 1290, 1292, 1298, 1316) that lay immediately north of the main row may represent repairs or additional supports along the wall/ fence line or a separate phase of activity. A gap of 1.2m along the length of the row may represent an area where the posthole has been truncated rather than a deliberate absence for a feature such as an entranceway. An environmental assessment of the fill (1291) of posthole 1292 contained calcined bone, charcoal, a wheat grain, charred weed seed (sample 14, chapter 6). A radiocarbon date was produced from posthole 1292 (see p30, and chapter 10).

5.2.8.3 Postholes 1316, 1318, 1320 lay to the north of the east end of the row. It was notable (though possibly coincidental) that posthole 1320 lay perpendicular to postholes 1314/ 1837 at the end of the row and was situated midway at a distance of 2m between the later and posthole 1326 to the north from PBS20 (refer 5.2.8.7).

PBS 6 (plate 13)

5.2.8.4 PBS 6 can be sub-divided in three closely spaced rows (6-a, 6-b, 6-c) of postholes orientated in a ENE-WSW direction for 9.3m in length that may represent the surviving long (north?) wall of a building or simply a fence line. It is uncertain whether the rows of postholes represent repairs/ replacements, separate phases of structure, or how many were contemporary, representing staggered pairing of postholes to form a wall or fence line. In general the postholes were all shallow and it is likely that the locality has undergone considerable horizontal truncation with a

number of postholes probably lost with any gaps along its length reflecting this factor rather than a structural detail such as an entranceway. The original length of this row is uncertain as its eastern limit coincided with a later furrow suggesting that it may originally have extended further in this direction. It is unclear whether postholes 1398 and 1552, located south of the western end of the row are associated with a return in the structure perhaps even forming part of the west gable of a putative building.

5.2.8.5 The northernmost row of postholes (6-c; 1426, 1440, 1829, 1452, 1454) was absent along the western portion of the structure and began at the western end with a large oblong cut (1426) that lay near the midway point with a 2.6m long gap until a row of four roughly equidistant postholes at the eastern end. Cut 1426 probably represented a post trench and measured 1.35m in length by 0.53m in width and had steep sides and a flattish base. Three postholes (1442, 1830, 1450) from the eastern end of the central of the three rows of postholes (6-a) lay immediately south of their counterparts from the north row (6-c) whereas postholes from the southern row (6-b) lay in general slightly off-centre to the east. The postholes along the central row (6-a; 1400/02/08/10/12/16/18/24/30/38/42, 1830, 1450) were closely spaced at the western end with their centres spaced approximately 0.20m apart, elsewhere along the row they were spaced at 0.40m. The postholes of the southern row (6-b; 1406/14/20/28/34/36/44/46?/ 48) were spaced at an average intervals of 1.00m. A plant macrofossil assessment of the fill (1441) of posthole 1440 (sample 27, chapter 6) included a barley grain and charred seaweed.

PBS 19

5.2.8.6 PBS 19 consisted of a 2.60m long row of three postholes (1052, 1054, 1056) orientated ENE-WSW with a posthole (1048) positioned 1.9m to the south and perpendicular to the west end of the row. The row of postholes lay on the same axis as PBS 20 (see below) situated 3m to the west which may be two contemporary structures or represent part of the same structure such as a fence line. Postholes 1052 and 1048 mirror postholes (1326, 1320) of PBS20, 4.5m to the west, lying on the same axis. Another posthole (1050) lay between postholes 1052 and 1048 slightly offset to the east. Two further postholes (1058, 1060) that lay up to 1.90m east of the group may be associated with PBS19.

PBS 20 (plate 14)

5.2.8.7 PBS 20 lay alongside the northern edge of an oblong gully (1839) and is likely to have been contemporary (see 5.2.8.10). PBS 20 consisted of a 2.2m long row of three postholes (1324, 1326, 1328) orientated ENE-WSW on the same axis as PBS19 (see above), 3m to the east which may represent a continuation of the same structure. The purpose of the structure is uncertain and may simply represent a fence line or a structure related to the use of gully 1839 which would function more like a pit. PBS 20 may have originally extended further west and been truncated by the furrow which lies along its northern edge. On the south side of gully 1839, another posthole (1320) lay at a distance of 2m directly perpendicular to posthole 1326 from the row and may have formed part of the same structure. It is also

notable that posthole 1320 also lay opposite posthole 1048 from PBS19, 4.4m to the east.

PBS 21

5.2.8.8 PBS 21 consisted of a compact group of four postholes (1032, 1034, 1036, 1038), occupying an area of 0.76m by 0.76m, with three further postholes (1040, 1827, 1828) that may be associated at a further distance, the latter two of which were excavated during the earlier evaluation (AD Archaeology 2016, tr11). The four postholes are similar in arrangement to the two clusters of PBS22 and PBS27 (refer 5.2.9.2) to the south and may have had a similar function. Posthole 1038 from the group consisted of a double post setting. Posthole 1040 lay 3.34m to the east of the group, with postholes 1828 and 1827 up to 2.1m to the south.

Other features in Area 5 (plate 14)

5.2.8.9 Gully 1270 was orientated ENE-WSW and ran alongside the southern edge of PBS4 for most of its length and may be contemporary. The gully survived for 6.93m in length and became at its eastern end progressively more truncated by the later furrow therefore its original extent is unknown. In profile the gully had gently sloping upper edges with a slight step on the southern side, steepening towards the base to concave sides and a rounded base and measured up to 1m in width by 0.3m in depth. Its fill consisted of blackish brown charcoal rich clayey silt with frequent flecks of sandstone (1269). An environmental assessment of the fill (1269) showed occupation deposits including small sherds of pot, vitrified fuel waste, calcined bone, teeth, charcoal, and charred weed seed (sample 16, chapter 6). Two postholes (1272, 1274) spaced 1m apart lay alongside the southern side of the western end of the gully, the easternmost of which was cut by a later furrow which would have removed any further postholes in this direction if they were originally present.

5.2.8.10 Gully 1839 (plate 14) ran parallel, 3.8m to the north of gully 1270 in a ENE-WSW direction. The row of three postholes (1324, 1326, 1328) from PBS20 alongside the northern edge of the gully (1839) may be contemporary. The gully measured 4m in length, and had clearly defined terminals at either end (segments 1322, 1044) resembling more of an elongated pit than a gully. Its southwestern end was joined by a shallow curvilinear channel (1841) that fed in to the gully. In profile gully 1839 was steep sided with a slightly rounded base and measured up to 0.79m in width by 0.27m in depth. The fill consisted of blackish brown charcoal rich clayey silt (1321) towards its western end becoming more greyish brown and less charcoal rich silty clay towards its eastern end (segment 1044) where three fills (1046, 1047, 1045) were identified. The earliest deposit in segment 1044 consisted of greyish brown silty clay (1046), overlain by a similar deposit containing redeposited natural clay (1047) against its northern side. The upper fill in the eastern portion consisted of mid-brown to greyish brown silty clay with flecks of charcoal (1045). An environmental assessment of deposit 1321 included a small quantity of fired clay, calcined bone, teeth, oat grains, and charred seaweed and hazel nutshell fragments (sample 17, chapter 6). A radiocarbon date was produced from deposit 1321 (see below, and chapter 10).

5.2.8.11 Pit 1042 lay 2m east of the eastern end of PBS4 and lay on the same axis as three of its northerly row of postholes (1290, 1292, 1316) and may therefore may be associated. The feature represents a rare survival due presumably to its greater depth in comparison to postholes within the footprint of the later furrow which truncated the pit. It was oblong shaped in plan and in profile was moderately sloped with a concave base, and measured 0.52m by 0.13m in depth. It was filled with greyish brown sandy silty clay (1043) (see 5.2.8.12). Pit 904, excavated during the earlier archaeological evaluation (AD Archaeology 2016) lay 2.2m north of PBS6. Pit 904 was sub-circular in shape meaning 0.70m by 0.62m in plan and in profile had concave sides coming down onto a flattish base. It was 0.16m in depth and filled with grey silty clay containing occasional small sandstone fragments (903).
A radiocarbon date was produced from pit 904 (see below, and chapter 10).

Radiocarbon dating
PBS4 - Fill1291, posthole 1292. cal AD 715-890 (SUERC-75835).
Pit - Fill903, cut 904. cal AD 650-780 (SUERC-66707).
Pit/gully 1839 - Fill1321, seg1322. cal AD 770-970 (SUERC-75836).

Table 5-**Features in Area 5**

context	Description	Max. dimensions	Depth	Fill	Comments
PBS 4					
1276	posthole	0.45m x 0.26m	0.07m	1275- dark grey-brown clayey silt	2 post settings or recut?
1278	posthole	0.41m x 0.31m	0.11m	1277- dark grey-brown clayey silt	2 post settings or recut?
1280	posthole	0.17m x 0.15m	0.06m	1279- dark grey-brown clayey silt	S side of row
1282	posthole	0.65m x 0.42m	0.20m	1281- dark grey-brown clayey silt	2 post settings or recut?
1284	posthole	0.27m x 0.25m	0.10m	1283- dark grey-brown clayey silt	-
1286	posthole	0.29m x 0.27m	0.06m	1285- dark grey-brown clayey silt	-
1288	posthole	0.29m x 0.18m	0.07m	1287- dark grey-brown clayey silt	N of main E-W row (p.hole1286)
1290	posthole	0.36m x 0.24m	0.13m	1289- dark grey-brown clayey silt	N of main E-W row
1292	posthole	0.43m x 0.32m	0.26m	1291- dark grey-brown clayey silt	N of main E-W row Env. sample14- refer chapter 6 Radiocarbon date cal AD 715-890/SUERC-75835
1294	posthole	0.52m x 0.41m	0.14m	1293- dark grey-brown clayey silt	2 post settings or recut?
1296	posthole	0.25m x 0.23m	0.06m	1295- dark grey-brown clayey silt	-
1298	posthole	0.37m x 0.34m	0.06m	1297- dark grey-brown clayey silt	N of main E-W row
1300	posthole	0.37m x 0.33m	0.09m	1299- dark grey-brown clayey silt	-

1302	posthole	0.46m x 0.29m	0.15m	1301- dark grey-brown clayey silt	intercuts 1304
1304	posthole	0.36m x 0.22m	0.09m	1303 dark grey-brown clayey silt	intercuts 1302
1306	posthole	0.50m x 0.30m	0.10m	1305- dark grey-brown clayey silt	2 post settings or recut?
1308	posthole	0.39m x 0.26m	0.14m	1307- dark grey-brown clayey silt	-
1310	posthole	0.37m x 0.26m	0.11m	1309- dark grey-brown clayey silt	-
1312	posthole	0.30m x 0.22m	0.04m	1311- dark grey-brown clayey silt	-
1316	posthole	0.32m x 0.32m	0.11m	1301- dark grey-brown clayey silt	N of main E-W row Lines up with posthole 1312 of PBS4 and 1324 of PBS20
1314	posthole	0.31m x 0.21m	0.05m	1313- dark grey-brown clayey silt	intercuts 1837
1837	posthole	0.32m x 0.29m	0.11m	1838- dark grey-brown clayey silt	intercuts 1314
Other postholes and features adjacent PBS 4					
1318	posthole	0.26m x 0.24m	0.05m	1317- dark grey-brown clayey silt	Outlying, N of PBS 4
1320	posthole	0.35m x 0.30m	0.04m	1319- dark grey-brown clayey silt	Outlying, N of PBS 4
1272	posthole	0.29m x 0.22m	0.06m	1271- dark grey-brown clayey silt	S side of gully 1270
1274	posthole	0.29m x 0.23m	0.12m	1273- dark grey-brown clayey silt	S side of gully 1270
PBS 6					
1400	posthole	0.29m x 0.28m	0.06m	1401- grey-brown sandy silt	Middle row 6-a
1402	posthole	0.37m x 0.28m	0.11m	1403- grey-brown sandy silt	Middle row 6-a
1404	posthole	0.24m x 0.16m	0.07m	1405- grey-brown sandy silt	S row 6-b
1406	posthole	0.31m x 0.30m	0.05m	1407- grey-brown sandy silt	S row 6-b
1408	posthole	0.25m x 0.22m	0.03m	1409- grey-brown sandy silt	Middle row 6-a
1410	posthole	0.23m x 0.21m	0.05m	1411- grey-brown sandy silt	double/intercutting postholes 1410, 1412 Middle row 6-a
1412	posthole	0.50m x 0.28m	0.06m	1413- grey-brown sandy silt	double/intercutting postholes 1410, 1412 Middle row 6-a
1414	posthole	0.48m x 0.29m	0.04m	1415 grey-brown sandy silt	S row of postholes Middle row 6-a
1416	posthole	0.38m x 0.35m	0.08m	1417- grey-brown sandy silt	Middle row 6-a
1418	posthole	0.28m x 0.20m	0.05m	1419- grey-brown sandy silt	Middle row 6-a
1420	posthole	0.28m x 0.22m	0.08m	1421- grey-brown sandy silt	S row 6-b
1422	posthole	0.22m x 0.20m	0.08m	1423- grey-brown sandy silt	slightly N of main row of postholes Middle row 6-a

1424	posthole	0.33m x 0.15m	0.03m	1425- grey-brown sandy silt	Middle row 6-a
1426	posthole	1.48m x 0.41m	0.17m	1427- grey-brown sandy silt	linear cut is it a pit or multiple setting N row 6-c
1428	posthole	0.32m x 0.31m	0.09m	1429- grey-brown sandy silt	S row 6-b
1430	posthole	0.19m x 0.18m	0.03m	1431- grey-brown sandy silt	intercutting 1432 Middle row 6-a
1432	posthole	0.26m x 0.17m	0.07m	1433- grey-brown sandy silt	intercutting 1430 Middle row 6-a
1434	posthole	0.22m x 0.20m	0.03m	1435- grey-brown sandy silt	S row 6-b
1436	posthole	0.19m x 0.18m	0.03m	1437- grey-brown sandy silt	S row 6-b
1438	posthole	0.44m x 0.34m	0.14m	1439- grey-brown sandy silt	S row 6-b
1440	posthole	0.36m x 0.29m	0.17m	1441- grey-brown sandy silt	intercutting 1442 Env. sample 27- refer chapter 6
1442	posthole	0.47m x 0.26m	0.05m	1443- grey-brown sandy silt	intercutting 1440
1444	posthole	0.30m x 0.27m	0.16m	1445- grey-brown sandy silt	S row 6-b
1446	posthole	0.22m x 0.20m	0.10m	1447- grey-brown sandy silt	S row 6-b
1448	posthole	0.18m x 0.17m	0.06m	1449- grey-brown sandy silt	S row 6-b
1450	posthole	0.36m x 0.29m	0.06m	1451- grey-brown sandy silt	Middle row 6-a
1452	posthole	0.70m x 0.44m	0.10m	1453- grey-brown sandy silt	N row 6-c
1454	posthole	0.29m x 0.19m	0.08m	1401- grey-brown sandy silt	N row 6-c
1829	posthole	0.28m x 0.23m	-	grey-brown sandy silt	N row 6-c
1830	posthole	0.29m x 0.22m	-	grey-brown sandy silt	Middle row 6-a
PBS 19					
1052	posthole	0.36m x 0.36m	0.09m	1053 grey-brown sandy silty clay	ENE-WSW line same line as PBS20 to W
1054	posthole	0.20m x 0.20m	0.09m	1055 grey-brown sandy silty clay	ENE-WSW line same line as PBS20 to W
1056	posthole	0.60m x 0.60m	0.18m	1057grey-brown sandy silty clay	ENE-WSW line same line as PBS20 to W
1048	posthole	0.40m x 0.48m	0.16m	1049 grey-brown sandy silty clay	perpendicular to 1052/54/56 lines up with posthole1320 to W
1050	posthole	0.24m x 0.24m	0.07m	1051 grey-brown sandy silty clay	S of posthole line
1058	posthole	0.22m x 0.22m	0.22m	1059 grey-brown sandy silty clay	SE of posthole line
1060	posthole	0.13m x 0.13m	0.13m	grey-brown sandy silty clay	E of posthole line
PBS 20					
1324	posthole	0.20m x 0.16m	0.06m	1323 grey-brown clayey silt	ENE-WSW line same line as PBS19 to E lines up with 1316/12 PBS4

1326	posthole	0.24m x 0.20m	0.07m	1325 grey-brown clayey silt	ENE-WSW line same line as PBS19 to E lines up with 1320 of PBS4
1328	posthole	0.21m x 0.17m	0.12m	1327 grey-brown clayey silt	ENE-WSW line same line as PBS19 to E
PBS 21					
1032	posthole	0.27m x 0.19m	0.06m	1033-grey-brown sandy silty clay	Group of 4 postholes
1034	posthole	0.30m x 0.29m	0.11m	1035-grey-brown sandy clay	Group of 4 postholes
1036	posthole	0.18m x 0.14m	0.04m	1037-grey-brown sandy clay	Group of 4 postholes
1038	posthole	0.45m x 0.38m	0.11m	1039-grey-brown sandy clay	Group of 4 postholes; double posthole setting
1040	posthole	0.20m x 0.20m	0.07m	1041-grey-brown sandy clay	E of group of 4 postholes
1828	posthole	0.24m x 0.22m	0.05m	1554-grey-brown sandy clay	S of group of 4 postholes excavated in evaluation Tr11. Cut1106 (AD Archaeology 2016)
1827	posthole	0.43m x 0.30m	0.09m	1553-grey-brown sandy clay	S of group of 4 postholes Excavated in Evaluation Tr11, cut1104 (AD Archaeology 2016)
Other features in Area 5					
1270	gully	6.93m x 1.12m	0.15m	1269-blackish-brown charcoal rich clay silt	Lies along S side of PBS4 Env. sample16- refer chapter 6
1839	gully	4m x 0.76m	0.27m	1321, 1046, 1047, 1045	Connects to gully 1839 (1322)
1322	gully 1839 W seg.	0.85m x 0.76m	0.27m	1321- blackish-brown charcoal rich clay silt	W segment of gully Env. sample 17- refer chapter 6 Radiocarbon date cal AD 770-970/SUERC-75836
1044	gully 1839 E seg.	0.90m x 0.70m	0.25m	1046-grey-brown silty clay 1047-grey-brown silty clay and redeposited clay 1045-grey-brown sandy silty clay	E segment of gully
1841	gully	0.89m x 0.31m	0.04m	1321-blackish-brown charcoal rich clay silt	Connects to gully 1839 (seg 1322)
904	pit	0.70m x 0.62m	0.16m	903-grey silty clay	Excavated in Evaluation Tr9 Radiocarbon date cal AD 650-780/SUERC-66707
1042	pit	1.21m x 0.52m	0.13m	1043-grey brown sandy silty clay	Same line as 1316, 1292, 1290 of PBS4 to W

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Figure 13: Plan of Area 5

N

0 5m

scale 1:100 at A4 plot

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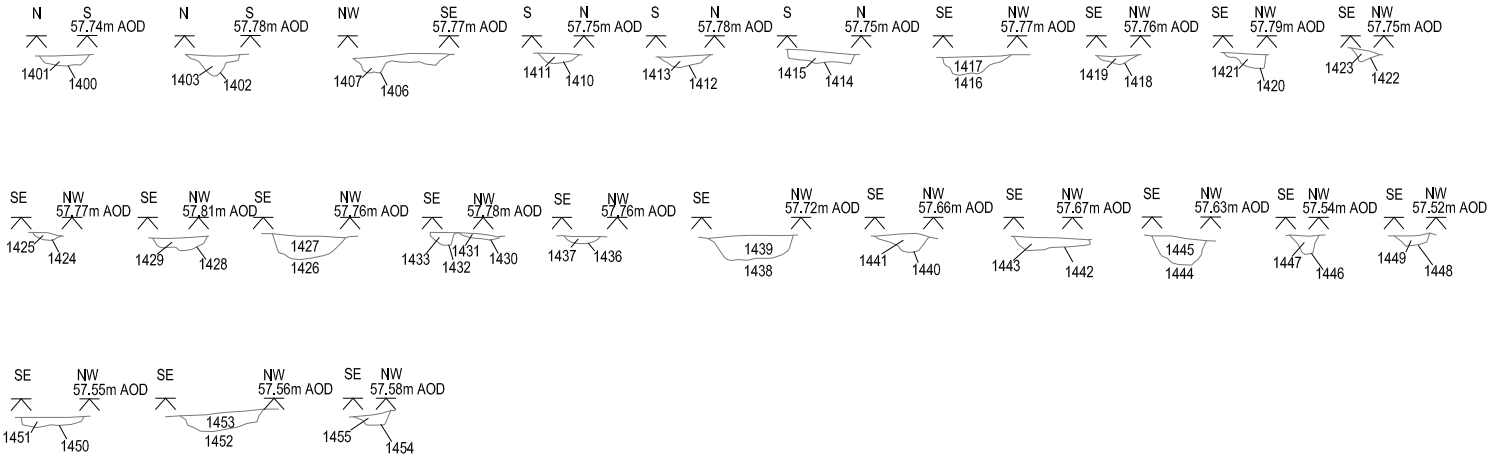
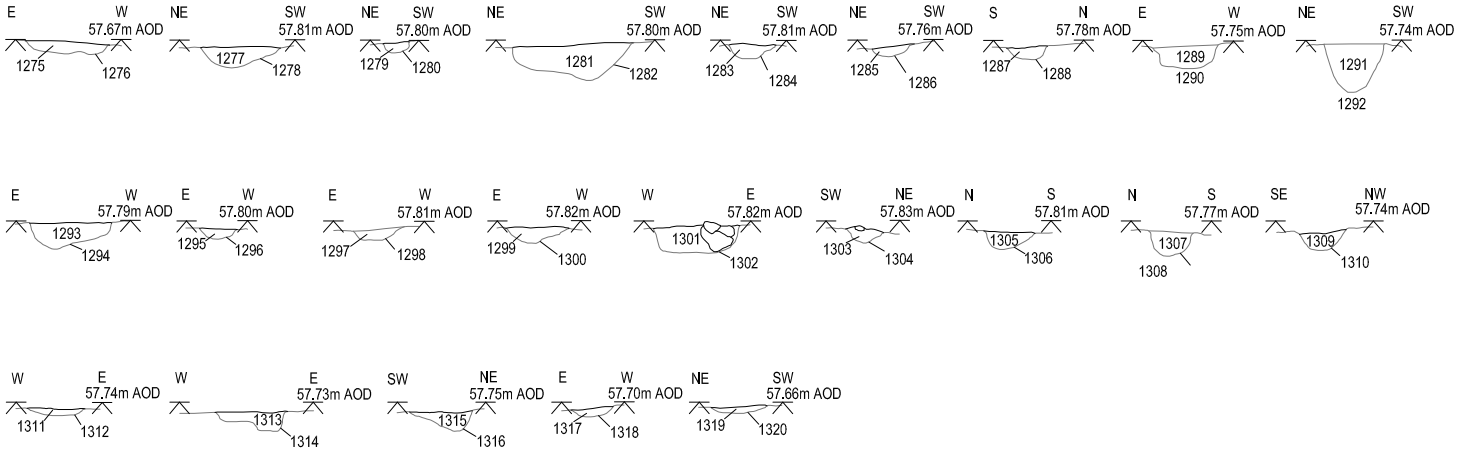
Project number 199

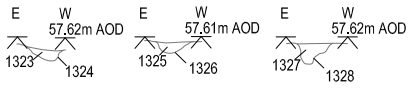
PBS 6



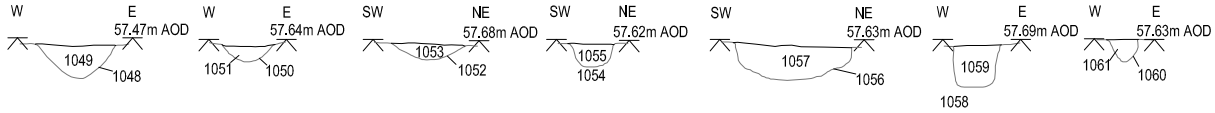
PBS 4



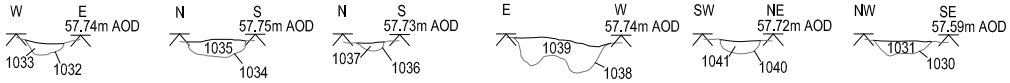
PBS 20



PBS 19



PBS 21



Additional sections in Area 5

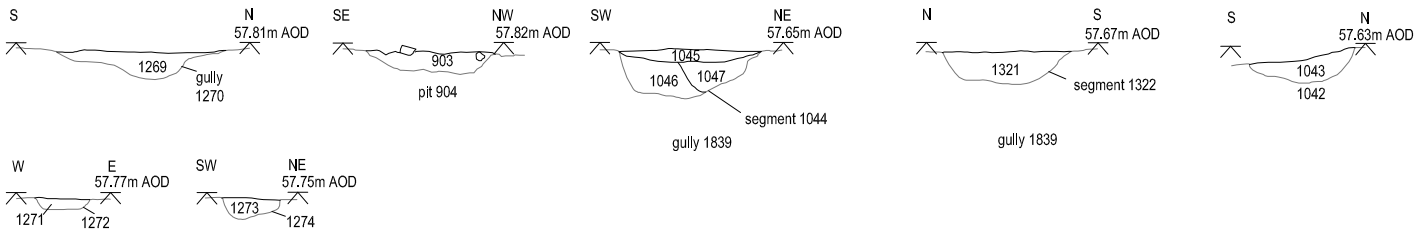


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Figure 14: Area 5 sections

0 1m
scale 1:40 at A4 plot

Felton Strip and record, Northumberland
Project number 199

5.2.9 AREA 6 (figs. 15, 16, 25, plate 15)

5.2.9.1 Area 6 lies in the southeast quadrant of the site near its southern edge and contained a low density of features with a concentration of postholes in the south eastern portion of the area (PBS28, 22, 27) and a pit (1649) in the northwest. An isolated posthole (912) initially exposed during the earlier evaluation (AD Archaeology 2016; tr9) lies in the western edge of the area. The closely set arrangements of postholes of PSB 22 and 27 each occupied an area of less than 1m, and contained relatively high proportions of metalworking debris within their fills (refer chapter 9) suggesting that although there was no evidence of smithing hearths, the PBS are likely to be associated with smithing or forging activity (refer 11.3) or at the very least it had been practiced in their vicinity (refer table 6).

PBS 22, 27 (plate 15)

5.2.9.2 PBS 22 and 27 lay only 2m apart, their proximity and similarity raises the possibility that together they may represent part of the same structure or were at least related in some other way, although alternatively they may represent successive phases of construction. The northern group of postholes (PBS22) consisted of three, regularly spaced, relatively deep postholes (1008, 1012, 1010) with a fourth (1110) differing both in size and fill from the others (see below). The postholes were arranged in a grid pattern occupying an area of only 0.92m by 0.93m. Posthole 1008 contained two post settings in the base although it was difficult to tell from the fill whether it was a double post setting or a recut. The three postholes were filled with grey silty clay with charcoal flecks from which vitrified ceramic and metalworking debris was recovered from postholes 1012 and 1008 (fill 1011 SF4, 1007 SF5, refer chapter 9). An environmental sample from posthole 1010 (fill 1011, sample 2, refer chapter 7) recovered fragments of fired clay and semi-vitrified fuel ash and material which is highly magnetic including a small quantity of hammerscale (ball/flake). In contrast to the others, posthole 1110 was slightly smaller in size and depth and filled with a very different brown clayey silt containing few inclusions suggesting that the post was removed and infilled at a different occasion to the other postholes.

5.2.9.3 PBS 27, to the south of PBS 22, consisted of three postholes (1002, 1004, 1006) with no posthole in the SW corner of the arrangement, it is notable that while obviously differing from its neighbour PBS22 to the north it does mirror it when posthole 1110 is omitted which was different in character to the other postholes of the group. The postholes of PBS 27 contained similar fills to their counterparts to the north containing flecks of daub and charcoal. Vitrified ceramic fragments were recovered from postholes 1002 and 1004 (fill 1001 SF7; fill 1003 SF3; refer chapter 9) and a smithing slag cake (1003; SF3) suggesting that iron smelting was undertaken at or near this location (refer 11.3).

5.2.9.4 The structural purpose of PBS 22 and 27 remains unclear as is whether they were utilised together in association with a single or two superstructures and if so whether they were contemporary or represent successive phases. The fills contained debris associated with smithing and smelting metalworking activity (refer 5.2.9.2,

5.2.9.3) strongly suggesting that this was undertaken in the vicinity, and indeed within the structures represented by PBS 22 and 27. PBS21 located 12.8m to the north in Area 5 was similar in appearance with a tightly spaced arrangement of postholes.

PBS 28

5.2.9.5 PBS 28 lay 3m west of PBS27 and consisted of a cluster of 5 postholes (1014, 1016, 1018, 1020, 1063) occupying an area of 3.1m by 3.3m that may relate to one structure and. Postholes 1014 and 1016 lay 2.1m apart on a NNW-SSE axis, with two postholes (1018, 1020) lying approximately perpendicular at the northern end with no 'corner' posthole present between the two lines. Posthole 1063 lay opposite posthole 1016, 3m away to the WSW.

Other features in Area 6

5.2.9.6 Pit 1649 lay 5m south of gully 1270 that ran alongside PBS4.It was sub-oval in plan and steep sided in profile with a gentle break of slope at the base which was flat. It measured 1.42 by 1.05m by 0.17m in depth and was filled with greyish brown sandy silty clay (1648). An isolated posthole (912) initially exposed during the earlier evaluation (AD Archaeology 2016; tr9) lay on the western edge of area 6.

Table 6-**Features in Area 6**

context	description	Max. dimensions	Depth	Fill	Comments
PBS27					
1002	posthole	0.47m x 0.30m	0.10m	1001-blackish grey-silty clay	SF 7 industrial debris refer chapter 9
1004	posthole	0.40m x 0.32m	0.27m	1003-blackish grey-silty clay	SF 3 industrial debris refer chapter 9
1006	posthole	0.30m x 0.25m	0.12m	1005-blackish grey-silty clay charcoal inclusions	-
PBS22					
1008	posthole	0.42m x 0.25m	0.22m	1007-blackish grey-silty clay	double posthole setting SF 5 industrial debris refer chapter 9
1012	posthole	0.50m x 0.27m	0.30m	1011-grey-silty clay	SF 4 industrial debris refer chapter 9 Env. sample 2-refer chapter 6
1010	posthole	0.40m x 0.26m	0.39m	1009-grey-brown sandy clay, daub inclusions	-
1110	posthole	0.22m x 0.18m	0.12m	1109-grey-brown sandy silt	-
PBS28					
1014	posthole	0.50m x 0.60m	0.19m	1013-grey- silty clay	-
1016	posthole	0.30m x 0.30m	0.03m	1015-grey- silty clay	-
1018	posthole	0.30m x 0.11m	0.03m	1017-grey- silty clay	-
1020	posthole	0.60m x 0.50m	0.06m	1019-grey- silty clay	-
1063	posthole	0.40m x 0.40m	0.15m	1062-grey- silty clay	-
Other features					
912	posthole	0.23m x 0.23m	0.04m	911-grey- sandy clay	Excavated during evaluation (AD Archaeology 2016, tr.9)
1649	pit	1.42m x 1.05m	0.17m	1648-grey-brown sandy clayey silt	-

5.2.10 AREA 7 (figs. 16, 17, 18, plate 16)

5.2.10.1 Area 7 on the southern edge of the southeast quadrant of the site contained a large pit likely to represent a Sunken Featured Building (SFB 2) and a relatively low density of postholes and pits.

Sunken Featured Building 2 (SFB 2) (fig. 18, plate 16)
5.2.10.2 SFB2 consisted of a large ovoid-shaped pit (1104) that measured 3.14m by 2.11m and 0.94m in depth, and was aligned north-south along its main axis. The south end of the cut had concave steeply sloped sides in contrast to its northern side that had a shallower slope. The base which was located in the south end of the cut was generally flat. No potentially associated postholes or other features were located in the immediate vicinity of the pit. The pit was filled with a homogenous layer of greyish brown silty clay (1105) with no evidence of primary silting suggesting that it may have been deliberately backfilled when it was no longer in use. The fill contained occasional large sandstone fragments of varied sizes up to 0.40m x 0.75m x 0.25m concentrated mainly within the upper fill. A plant macrofossil assessment of the fill 1105 (sample 3, chapter 6) contained charcoal but was otherwise uninformative.

Other features in Area 7
5.2.10.3 Pit 1081 lay 5.5m northwest of SFB2. It was circular in plan with shallow concave sides and a flat base, and was filled with blackish grey-silty clay (1080).

5.2.10.4 Two large oblong-shaped pits (1108, 1065) 1.6m southwest of SFB2 probably represent large postholes spaced 2m apart on an ESE axis. Pit 1108 had irregularly sloped sides and an uneven base, and was filled with mixed dark grey silty clay and brown sandy clay (1107). Pit 1065 was similar in shape and size to 1065, and in profile had concave sides and base.

5.2.10.5 Three pairs of postholes were located to the northeast of SFB2. Postholes (1645, 1647) lay 5.4m from the SFB, and were spaced 1m apart on a NNW axis. Postholes 1026 and 1028, situated 6m to the east of 1645/1647 were similar in layout to them. The remaining pair of postholes (1022, 1024) was more similar in layout (in terms of their spacing and axis) to postholes 1108, 1065, 12.3m to the southwest on the opposite side of the SFB.

Table 7-**Features in Area 7**

context	description	Max. dimensions	Depth	Fill	Comments
SFB 2					
1104	Pit (SFB2)	0.47m x 0.30m	0.10m	-	-
1105	Fill of 1104	0.40m x 0.32m	0.27m	greyish brown silty clay	Env. Sample 3- refer chapter 6
Other features in Area 7					
1108	Pit/ posthole	0.69m x 0.60m	0.20m	1107-black silty clay	Paired with 1065
1065	Pit/ posthole	0.44m x 0.44m	0.20m	1064-grey- silty clay	Paired with 1108
1645	posthole	0.45m x 0.42m	0.11m	1644-grey- silty clay	Paired with 1647
1647	posthole	0.43m x 0.42m	0.11m	1646-grey- silty clay	Paired with 1647
1026	posthole	0.35m x 0.30m	0.10m	1025-grey- silty clay	Paired with 1028
1028	posthole	0.48m x 0.40m	0.05m	1027-grey- silty clay	Paired with 1026
1022	posthole	0.30m x 0.30m	0.13m	1021-grey- silty clay	Paired with 1024
1024	posthole	0.40m x 0.35m	0.04m	1023-grey- silty clay	Paired with 1022
1081	Pit	0.90m x 0.87m	0.15m	1080-black silty clay	-

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Figure 15: Plan of Area 6

N

0 5m

scale 1:100 at A4 plot

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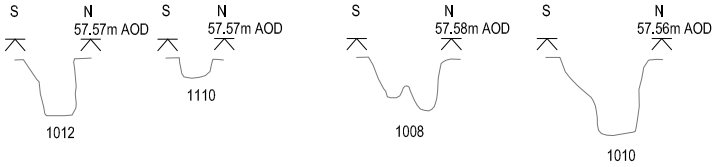
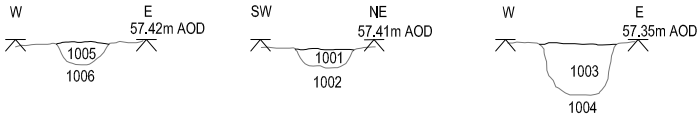
Project number 199

Area 6

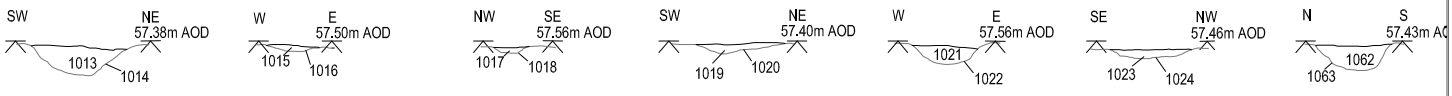
PBS22

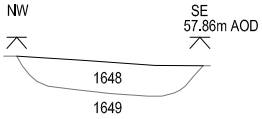


PBS27

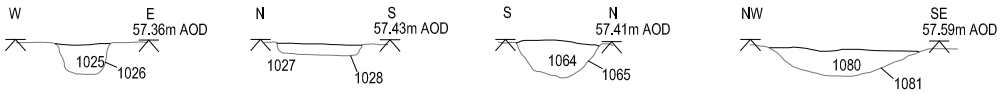


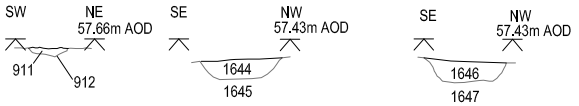
PBS28





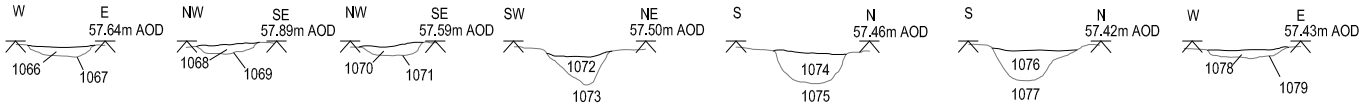
Area 7

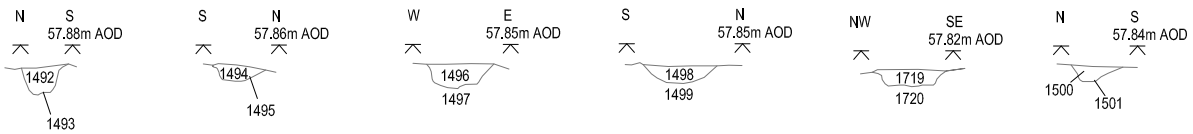




SFB 2 see fig. 19

Area 8





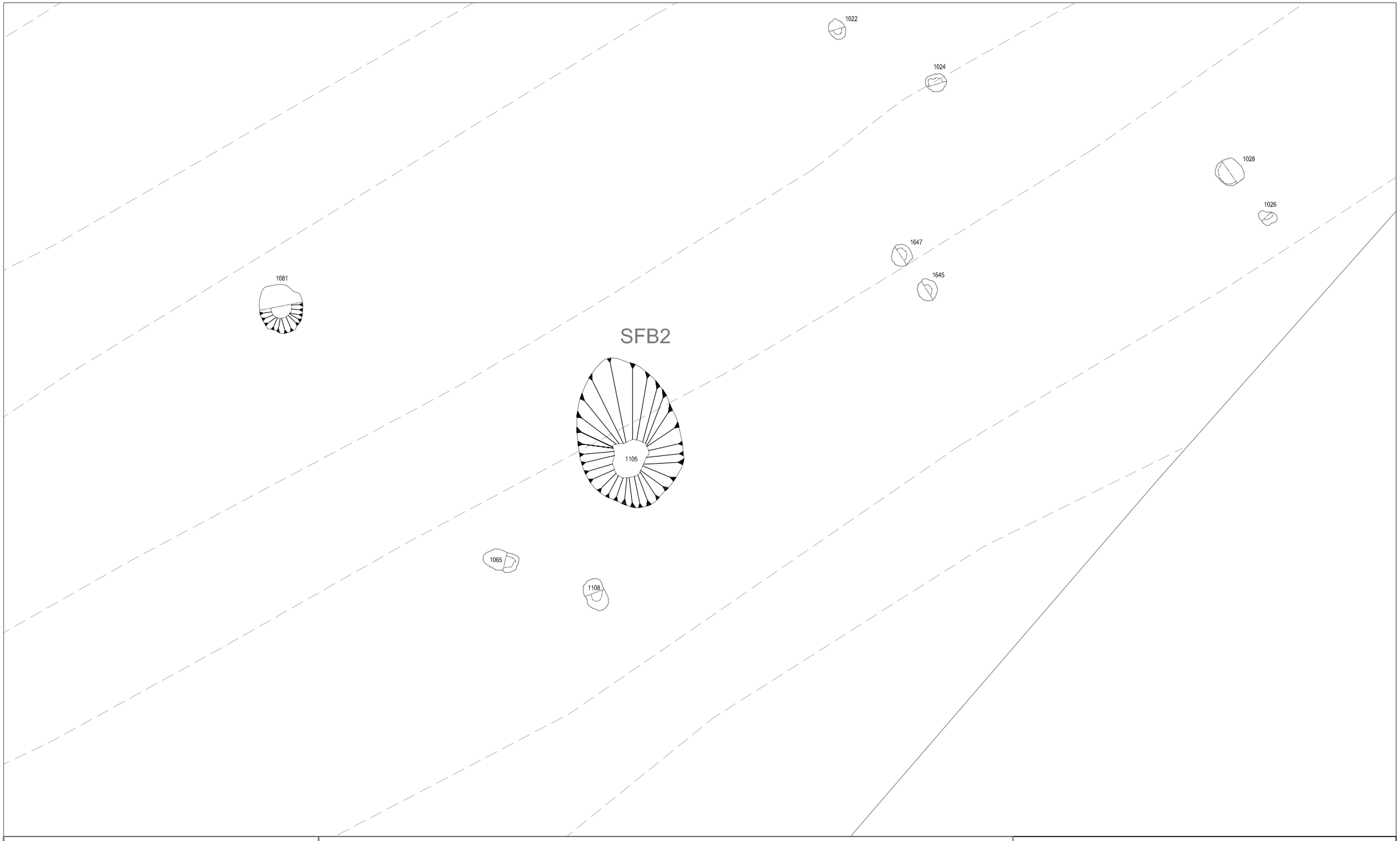


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Figure 17: Plan of Area 7

N

0 5m

scale 1:100 at A4 plot

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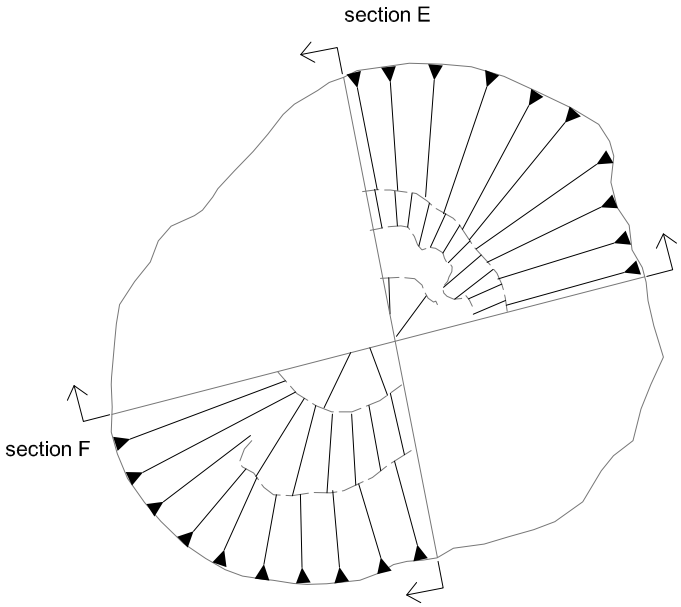
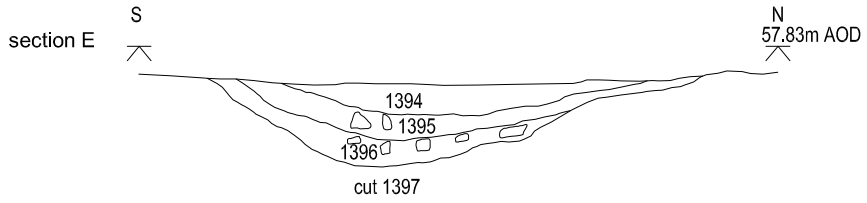
Project number 199



plan view



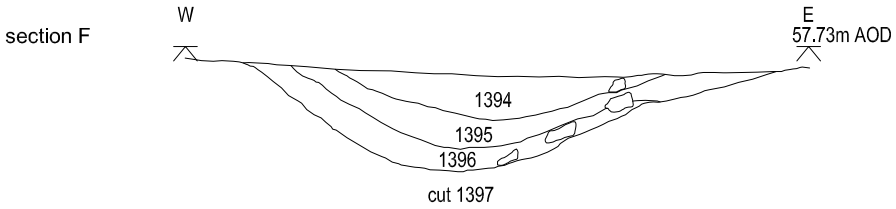


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Figure 18: Plan and sections of SFB 3

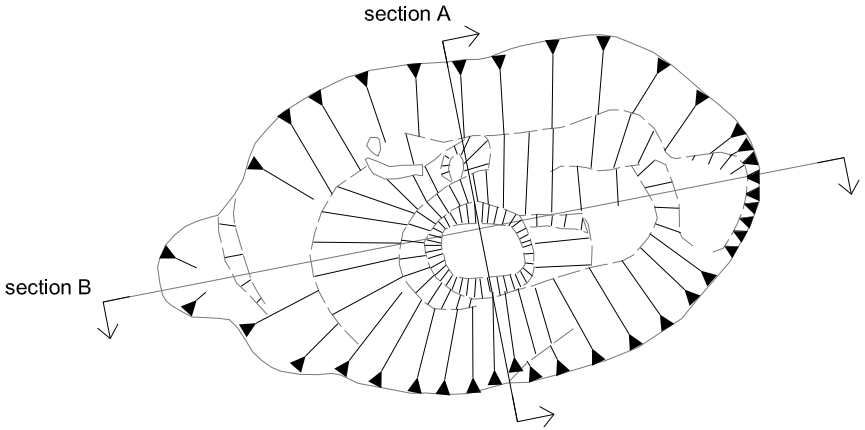
N

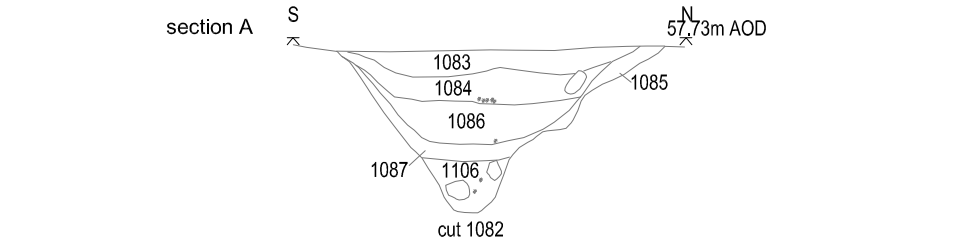
0 1m

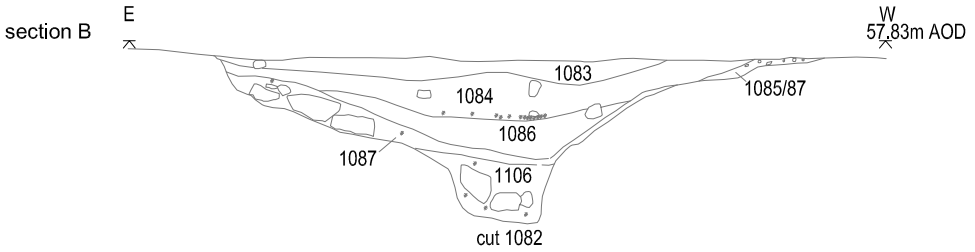
scale 1:50 at A4 plot

Felton Strip and record, Northumberland
Project number 199

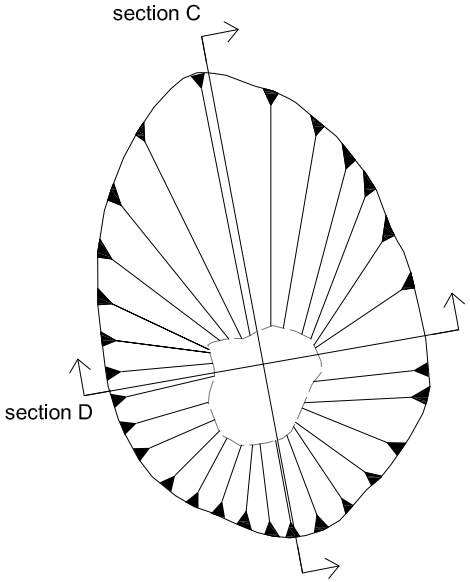
SFB 1

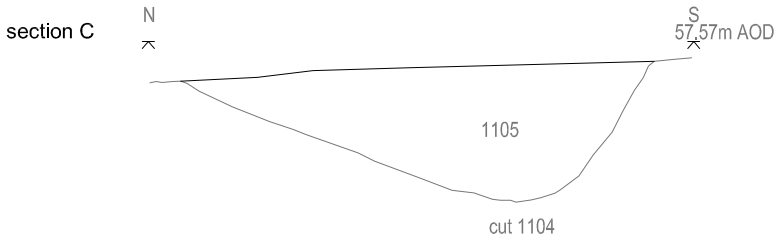






SFB 2





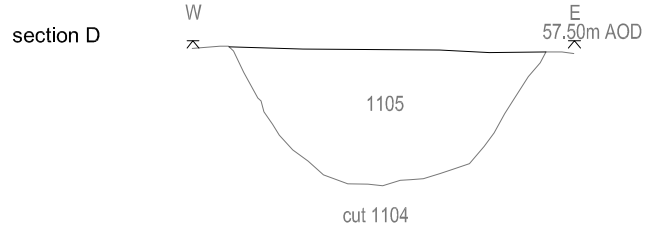


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Figure 19: Plan and sections of SFB 1 & 2

N

0 1m

scale 1:50 at A4 plot

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Project number 199

5.2.11 AREA 8 (figs. 16, 20, 25, plate 17)

5.2.11.1 Area 8 lies in the southwest quadrant of the site, and contained PBS 18 which consisted of a row of postholes and a linear gully or slot. To the east of PBS 18 was a concentration of features including a group of pits, a gully and several postholes. Seven postholes that formed no coherent pattern lay in the southern edge of area 8.

PBS 18

5.2.11.2 PBS 18 consisted of a line of four postholes (1770/72/73/76) orientated NNW-SSE with the southernmost posthole (1770) offset slightly to the west. The row of postholes probably extended further to the north and south before it was truncated by later furrows which lie at either end of the row. It is unclear whether PBS 18 represents a fence line or a structure, a posthole does lie on the same projected line as PBS 18 A narrow gully or slot (1775), orientated ENE-WSW, extended 5.36m from the east side of the northern posthole (1776), and is likely to have originally extended further. It measured 0.27m in width by 0.10m in depth and was generally U-shaped in profile and filled with greyish brown sandy silt containing few inclusions (1774). The function of the linear cut is uncertain it may represent a narrow timber slot for walling or fencing, or simply a drainage gully. It was notable that the slot lined up with the northern most posthole with which it may be associated. A posthole (1777) lay to the south of the west end of the slot (1775), 1.7m to the east of the posthole row.

Other features in Area 8 (plate 17)

5.2.11.3 Four pits (1487, 1489, 1491, 1555) lay in a cluster to the east of PBS 18 (plate 17). The westernmost pit (1555) was sub-circular in plan and was not excavated. Pit 1487 lay 1.15m ENE of pit 1555 and was oblong shaped with moderately sloped sides and a slightly rounded base. At the base of the northern portion of pit 1487 was a steep sided cut, 0.14m deep. The fill consisted of grey sandy silt with occasional flecks of charcoal (1488). Another pit (1489) lay 0.11m to the north of pit 1487; it was 'pear-shaped' in plan and in profile had near vertical sides with a flattish base. The fill (1490) of pit 1489 was similar in character to the fill (1488) of the neighbouring pit (1487). Pit 1491 which lay 0.77m to the northeast of pit 1489 was furnished with a runoff channel on its northern side which deepened as it headed north from 0.04m at the lip of the pit to 0.09m below ground level before it was removed by the later furrow which presumably has also removed another feature fed by the run-off channel connected. The pit itself was sub-circular in plan and was bowl–shaped with a concave base. A plant macrofossil assessment of the fill 1490 of pit 1489 (sample 30, chapter 6) included charred weed seeds and seaweed, but did not indicate for what purpose the pit was used.

5.2.11.4 Three postholes (1493, 1495, 1497) lay 1.44m east of pit 1491 including two which were intercutting (posthole 1495 was cut by 1497). Gully 1499 lay 4.6m east of pit 1491, the main body of the feature survived for 2.35m in length with a further length of the gully (1503) on the same axis to the east which presumably represented a remnant truncated by the later furrow. In profile it had moderately

sloped concave sides and base, and was filled (1500) with gritty grey sandy silt with occasional flecks and small fragments of charcoal. Two fragments of metalworking debris (SF 10; chapter 9) were recovered from fill 1500. Two postholes (1501, 1557) lay on the north side of the gully with one to the south (1720). Another pit (910) lay 2.9m north of the west end of the gully was excavated during the earlier evaluation (AD Archaeology 2016, tr9).

5.2.11.5 A cluster of seven postholes (1069/67, 1071/73/75/77/79) of uncertain purpose lay in the southern edge of area 8 situated 10m south of pit 1555. Six of the postholes extended over an area of 10m in length by 2m in width, with the seventh located 5m to the northwest. There was no obvious pattern to the postholes, other than a general ENE-WSW orientation and that three of the postholes (1077, 1075, 1073) lay approximately in a line. Also although coincidental it was notable that posthole 1079 lay on the projected line of PBS 18 to the north.

Table 8-**Features in Area 8**

context	description	Max. dimensions	Depth	Fill	Comments
PBS18					
1770	posthole	0.40m x 0.37m	0.13m	1769-grey sandy silt	slightly offset to east from row
1772	posthole	0.31m x 0.24m	-	grey sandy silt	-
1773	posthole	0.31m x 0.25m	-	grey sandy silt	-
1776	posthole	0.42m x 0.38m	-	grey sandy silt	-
1777	posthole	0.28m x 0.27m	-	grey sandy silt	offset to east from row
1775	gully	5.36m x 0.27m	0.10m	1774-brown grey sandy silt	slot/gully
Other features in Area 8					
1555	pit	0.78m x 0.63m	-		Unexcavated
1487	pit	0.87m x 0.51m	0.11m	1488-grey sandy silt	-
1489	pit	0.93m x 0.66m	0.30m	1490-grey sandy silt	E. Sample 30- refer chapter 6
1491	pit	12.13m x 0.83m	0.20m	1492-brownish grey sandy silt	-
1493	posthole	0.20m x 0.19m	0.15m	1492-grey sandy silt	-
1495	posthole	0.45m x 0.29m	0.09m	1494-grey sandy silt	Cut by 1497
1497	posthole	0.39m x 0.33m	0.14m	1496-grey sandy silt	Cuts 1495
1499	gully	2.35m x 0.40m	0.10m	1500-gritty grey sandy silt,	3.3m tot. length, with 1503 length of gully
1503	gully	0.51m x 0.14m	-	grey sandy silt	E extent of gully 1499
1501	posthole	0.44m x 0.24m	0.09m	1500-grey sandy silt	-
1557	posthole	0.20m x 0.16m	-	grey sandy silt	-
1720	posthole	0.47m x 0.38m	0.09m	1721-grey sandy silt	-
910	pit	0.97m dia.	0.20m	909-grey sandy clay	Excavated during earlier evaluation (tr9)
1067	posthole	0.35m x 0.28m	0.10m	1066-grey brown sandy clay	posthole on ridge 5
1069	posthole	0.28m x 0.27m	0.05m	1068-grey brown sandy clay	posthole on ridge 5
1071	posthole	0.30m x 0.27m	0.08m	1070-grey brown sandy clay	posthole on ridge 5
1073	posthole	0.35m x 0.30m	0.16m	1072-grey brown sandy clay	posthole on ridge 5

1075	posthole	0.40m x 0.35m	0.16m	1074-grey brown sandy clay	posthole on ridge 5
1077	posthole	0.48m x 0.45m	0.20m	1076-grey brown sandy clay	posthole on ridge 5
1079	posthole	0.40m x 0.38m	0.03m	1078-grey brown sandy clay	posthole on ridge 5

5.2.12 AREA 9 (figs. 20, 21, 25, plates 18, 19)

5.2.12.1 Area 9 occupied the central portion of the site and contained a number of postholes in several different groupings with the main concentration probably representing at least two or three buildings PBS15 and PBS16 (16b) with another small group of postholes to the northeast forming PBS17 (fig.25). Although the postholes that constituted PBS15, PBS16 and 16b were difficult to interpret as coherent patterns from recognisable structures, this discernible differences in their general alignments, suggest the presence of several structures which have been broadly assigned separate PBS numbers. PBS 15 at the west end of the cluster lies on a NNW-SSE/ ENE-WSW axis which differs from the neighbouring postholes of PBS16 which were aligned on a N-S/ E-W axis. A large pit in the southern edge of the area probably represents a sunken featured building (SFB 1). Further isolated postholes lay to the east of the SFB two of which (906, 908) were excavated during the earlier evaluation (AD Archaeology 2016, tr9).

PBS 15

5.2.12.2 PBS 15 formed a roughly square–shaped arrangement of postholes that occupied an area of approximately 2.7m by 2.9m. The west side consisted of a line of four postholes (15-a; 1779/82/83/84) equidistantly spaced at 0.76m intervals; the north side had three postholes (15-b; 1790/91/92) with a similar spacing although with the posthole absent from the projected northwest corner of the two posthole rows. The southeast corner of the putative structure was uncertain and perhaps represented by posthole 1794, 2.85m SSE of posthole 1792. With no intervening postholes between the corner posts, the putative eastern and southern wall lines were ill-defined. A row of three postholes (15-e; 1783/85/88) orientated ENE-WSW extended within the interior from posthole 1783 of the western wall line. Three other postholes (1786/89/87) lay within the interior of the putative structure.

PBS 16 (plate 19)

5.2.12.3 PBS 16, which lay immediately east and on a different alignment to PBS15, contained two principal components; an L-shaped layout of postholes to the west and a double row of postholes at its east end which may represent a separate structure (16b). Including PBS 16 & 16b the postholes occupied an area of approximately 8.6m by 4.6m. Five postholes spaced at relatively wide intervals of between 1.3m and 0.95m extended in an east-west direction (posthole 1793, 1799, 1800, 1803) with three postholes (1803/04/05) forming a north-south return at its eastern (gable?) end from posthole 1803 (the only posthole excavated). Several postholes (1796/98/97/95) lay perpendicular, extending1.8m to the south of posthole 1799 which may be associated with the south wall line of PBS16. The double row of postholes of PBS16b (1807/05/08/10/12/14/16/15/18/20/21/22)

from the eastern component of PBS16 extended 3.8m in length on an east-west axis including posthole 1805. It was unclear whether they represent two successive walls/ fence lines or were contemporary. Posthole 1810 from the southern line of postholes cut posthole 1812.

PBS 17

5.2.12.4 PBS 17 consisted of only three postholes (1823, 1824, 1825) orientated east-west/north-south alongside the edge of a furrow that may represent the heavily truncated remains of the southeast corner of a structure. The east-west line consisted of two postholes 1823, 1825 spaced 1.15m apart while posthole 1825 from the north-south line lay 0.85 apart and appeared to consist of a double posthole setting. None of the postholes from the group were excavated.

Sunken Featured Building 1 (SFB 1) (fig. 18, plate 18)

5.2.12.5 SFB1 in the southern portion of area 9 lay 2.9m SE of PBS16. SFB 1 consisted of a large, slightly irregular oval shaped pit (1082) with flattened sides that had a smaller pit cut into the centre of the base. Its main axis was aligned on an east-west orientation and overall measured 4.02m in length (including a shallow sloping upper lip on the west end) by 2.22m in width by 1.08m in depth (0.62m deep alongside the pit at its base). The main body of the pit had moderate to steeply sloped sides that steepened towards the smaller pit cut in to the base. The west end of the main body of the pit had a stepped profile, the east side of the pit in contrast to elsewhere had a gently sloped though stepped profile. The pit cut through the base of the SFB, measured 0.72m by 0.65m, by a depth of 0.46m. In profile it was near vertical sided with a flattish base the bottom of which was cut through sand subsoil whilst the main body of the pit cut through boulder clay.

5.2.12.6 The pit at the base of the SFB was filled with sandstone fragments (average size of 180 x 170 x 70mm) within a matrix of greyish brown sandy silt containing frequent charcoal flecks (1106). The upper portion of the fill merged with the overlying fill (1087/85) which was similar in composition but with a higher component of sand. A concentration of sandstone fragments interleaved with deposit 1087 overlay the gently sloping east side of the pit including two larger stones up to 450 x 300x 180mm in size. Deposit 1087 formed a thin layer of silting over the main body of the sides of the pit which was overlain by an extensive layer of silting that consisted of brownish grey silt (1086) mottled with iron minerals, and containing occasional flecks of charcoal and sandstone fragments some of which were heat fractured. The partially silted pit and deposit 1086 was overlain with dark greyish brown sandy silt (1084) containing occasional heat-fractured stones and charcoal flecks concentrated towards the base of the deposit. Deposit 1084 was in turn overlain by a final layer of upper silting consisting of brown sandy silt (1083).

5.2.12.7 A plant macrofossil assessment of the fill 1086 (sample 4, chapter 6) contained small amounts of burnt or calcined bone and animal tooth. A sample of fill 1106 (sample 5, chapter 6) contained uncharred fruitstones of edible plants (bramble, wild raspberry and elder) and small amounts of burnt or calcined bone and animal tooth. A radiocarbon date was produced from deposit 1106 (see below,

and chapter 10).

Other features in Area 9

5.2.12.8 Several postholes lay to the east of SFB1. Postholes 908 and 906 were initially exposed during the earlier evaluation (AD Archaeology 2016, tr9) and lay the nearest to the SFB at a distance of 4.44m. A pair of postholes (1832, 1834) spaced only 0.6m apart, lay on the same axis as PBS6 (refer 5.2.8.4) 4.5m to the ENE and may represent a continuation of a fence line. A small isolated posthole (1826) was recorded 2.25m northeast of PBS17.

Radiocarbon dating

SFB1 - Fill1106, posthole 1140. cal AD 690-890 (SUERC-75839).

Table 9-**Features in Area 9**

context	description	Max. dimensions	Depth	Fill	Comments
PBS15					
1779	posthole	0.36m X 0.35m	0.12m	grey-brown clayey sandy silt	NNW-SSE row 15-a; corner post 15-d
1782	posthole	0.35m x 0.29m	-	grey-brown clayey sandy silt	NNW-SSE row 15-a
1783	posthole	0.33m x 0.29m	-	grey-brown clayey sandy silt	NNW-SSE row 15-a, row 15-e
1784	posthole	0.36m x 0.32m	-	grey-brown clayey sandy silt	NNW-SSE row 15-a
1790	posthole	0.24m x 0.12m	-	grey-brown clayey sandy silt	N wall, row 15-B
1791	posthole	0.36m x 0.34m	-	grey-brown clayey sandy silt	N wall, row 15-B
1792	posthole	0.15m x 0.12m	-	grey-brown clayey sandy silt	N wall, row 15-B
1794	posthole	0.23m x 0.21m	-	grey-brown clayey sandy silt	corner post 15-d, 15-c
1785	posthole	0.29m x 0.25m	-	grey-brown clayey sandy silt	Internal, E-W row 15-e
1788	posthole	0.30m x 0.29m	-	grey-brown clayey sandy silt	Internal, E-W row 15-e
1789	posthole	0.23m x 0.20m	-	grey-brown clayey sandy silt	internal
1786	posthole	0.20m x 0.15m	-	grey-brown clayey sandy silt	internal
1787	posthole	0.17m x 0.14m	-	grey-brown clayey sandy silt	internal
1781	posthole	0.28m x 0.25m	0.09m	grey-brown clayey sandy silt	external
PBS16					
1793	posthole	0.24m x 0.21m	-	grey-brown clayey silt	E-W
1799	posthole	0.32m x 0.28m	-	grey-brown clayey silt	E-W
1800	posthole	0.26m x 0.20m	-	grey-brown clayey silt	E-W

1801	posthole	0.24m x 0.19m	-	grey-brown clayey silt	E-W
1803	posthole	0.36m x 0.33m	0.14m	1802-dark grey-brown clayey silt, occ. charcoal flecks	corner post E-W row bld16
1804	posthole	0.18m x 0.16m	-	grey-brown clayey silt	N-S wall?, row bld16
1805	posthole	0.19m x 0.17m	-	grey-brown clayey silt	corner post N-S/E-W row bld16
1798	posthole	0.36m x 0.31m	-	grey-brown clayey silt	N-S row
1797	posthole	0.53m x 0.36m	-	grey-brown clayey silt	N-S row
1796	posthole	0.26m x 0.20m	-	grey-brown clayey silt	N-S row
1795	posthole	0.29m x 0.27m	-	grey-brown clayey silt	N-S row
1810	posthole	0.51m x 0.48m	0.15m	1809-mixed dark brown- grey clayey silt, lenses orange clay; occ. charcoal flecks	E-W, S row
1812	posthole	0.42m x 0.26m	0.27m	1811- dark brown-grey clayey silt, occ. charcoal flecks	E-W, S row
1814	posthole	0.36m x 0.31m	0.22m	1813- dark brown-grey clayey silt, occ. charcoal flecks	E-W, S row
1815	posthole	0.22m x 0.19m	-	dark grey-brown clayey silt	E-W, S row
1818	posthole	0.35m x 0.31m	0.09m	grey-brown clayey silt	E-W, S row
1822	posthole	0.19m x 0.13m	-	grey-brown clayey silt	E-W, S row
1807	posthole	0.28m x 0.27m	0.14m	grey-brown clayey silt	E-W, N row
1808	posthole	0.26m x 0.17m	-	grey-brown clayey silt	E-W, N row
1814	posthole	0.36m x 0.31m	0.22m	grey-brown clayey silt	E-W, N row
1816	posthole	0.13m x 0.12m	-	grey-brown clayey silt	E-W, N row
1820	posthole	0.28m x 0.27m	0.16m	1819-dark grey-brown clayey silt	E-W, N row
1821	posthole	0.12m x 0.11m	-	grey-brown clayey sandy silt	E-W, N row
PBS17					
1823	posthole	0.22m x 0.19m	-	grey-brown clayey sandy silt	E-W row 9-a
1824	posthole	0.28m x 0.24m	-	grey-brown clayey sandy silt	corner post
1825	posthole	0.60m x 0.41m	-	grey-brown clayey sandy silt	N-S line, double posthole
SFB 1					
1082	Pit cut	4.02m x 2.22m	1.08m	1106, 1087, 1086, 1084, 1083	-

1106	Fill of 1082	0.65m x 0.62m	0.45m	Greyish brown sandy silt, freq. charcoal flecks and common fragments of sandstone	Env. Sample 5- refer chapter 6 Radiocarbon date cal AD 690-890/ SUERC75839
1087	Fill of 1082	4.00m x 2.20m	0.21m	Greyish brown silty sand with occ. stone frags.	refer chapter 8
1085	Fill of 1082	0.85m x 0.65m	0.11m	Light brown sandy silt	merged with 1087
1086	Fill of 1082	2.04m x 1.48m	0.27m	Brownish grey silt	E. Sample 4-refer chapter 6
1084	Fill of 1082	3.52m x 1.82m	0.31m	dark grey brown sandy silt	-
1083	Fill of 1082	2.98m x 1.90m	0.17m	brown sandy silt	-
Other features in Area 9					
906	posthole	0.44m x 0.40m	0.06m	905-grey- sandy clay	Excavated in evaluation (AD Archaeology 2016, tr.9)
908	posthole	0.35m x 0.28m	0.12m	907-grey- sandy clay	Excavated in evaluation (tr.9)
1832	posthole	0.45m x 0.40m	0.16m	1831-grey brown-sandy silt	-
1834	posthole	0.30m x 0.26m	0.14m	1833-grey brown-sandy silt	-
1826	posthole	0.24m x 0.23m	-	1831-grey brown-sandy silt	-

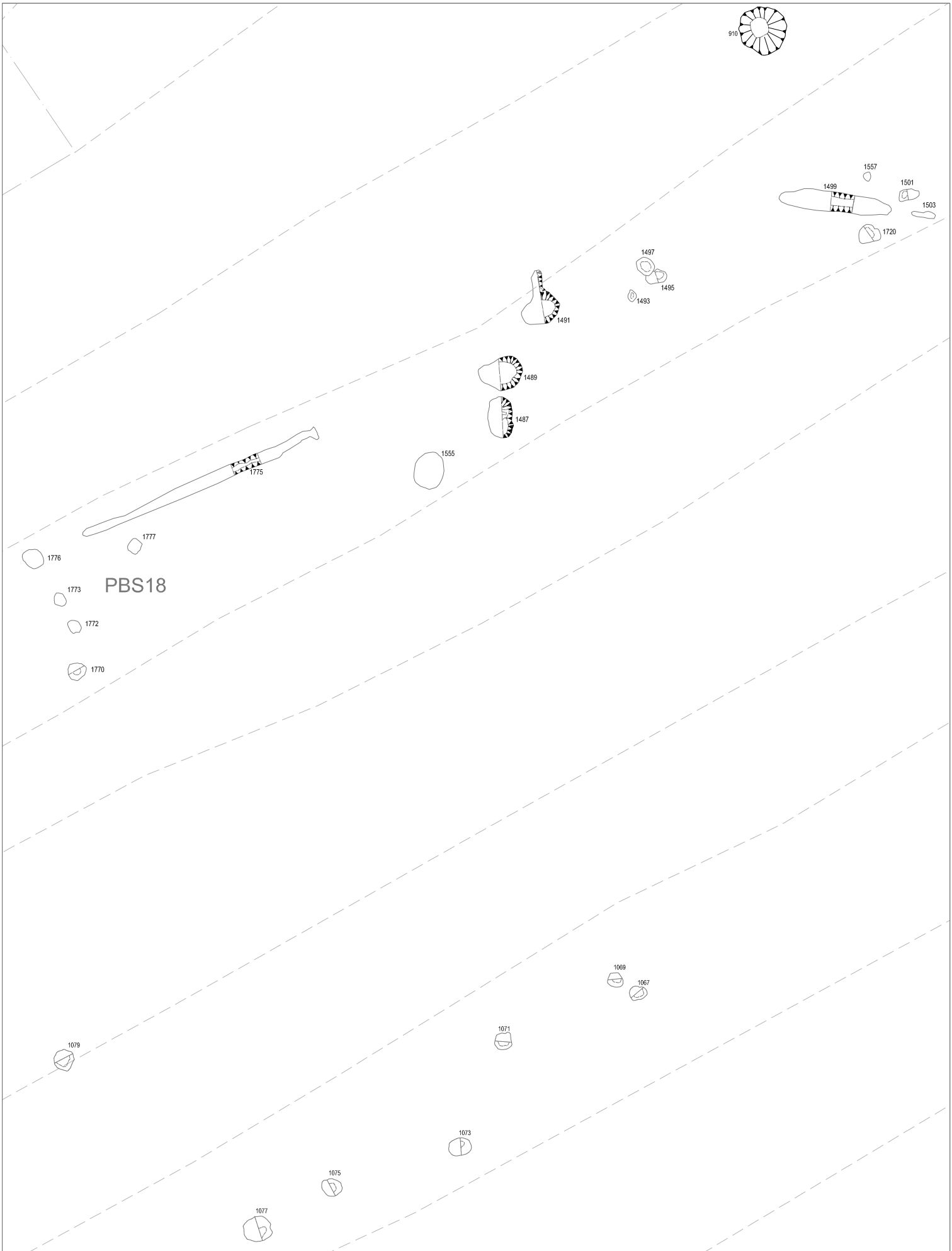

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Figure 20: Plan of Area 8

N

0 5m

scale 1:100 at A4 plot

Felton Strip and record, Northumberland
Project number 199

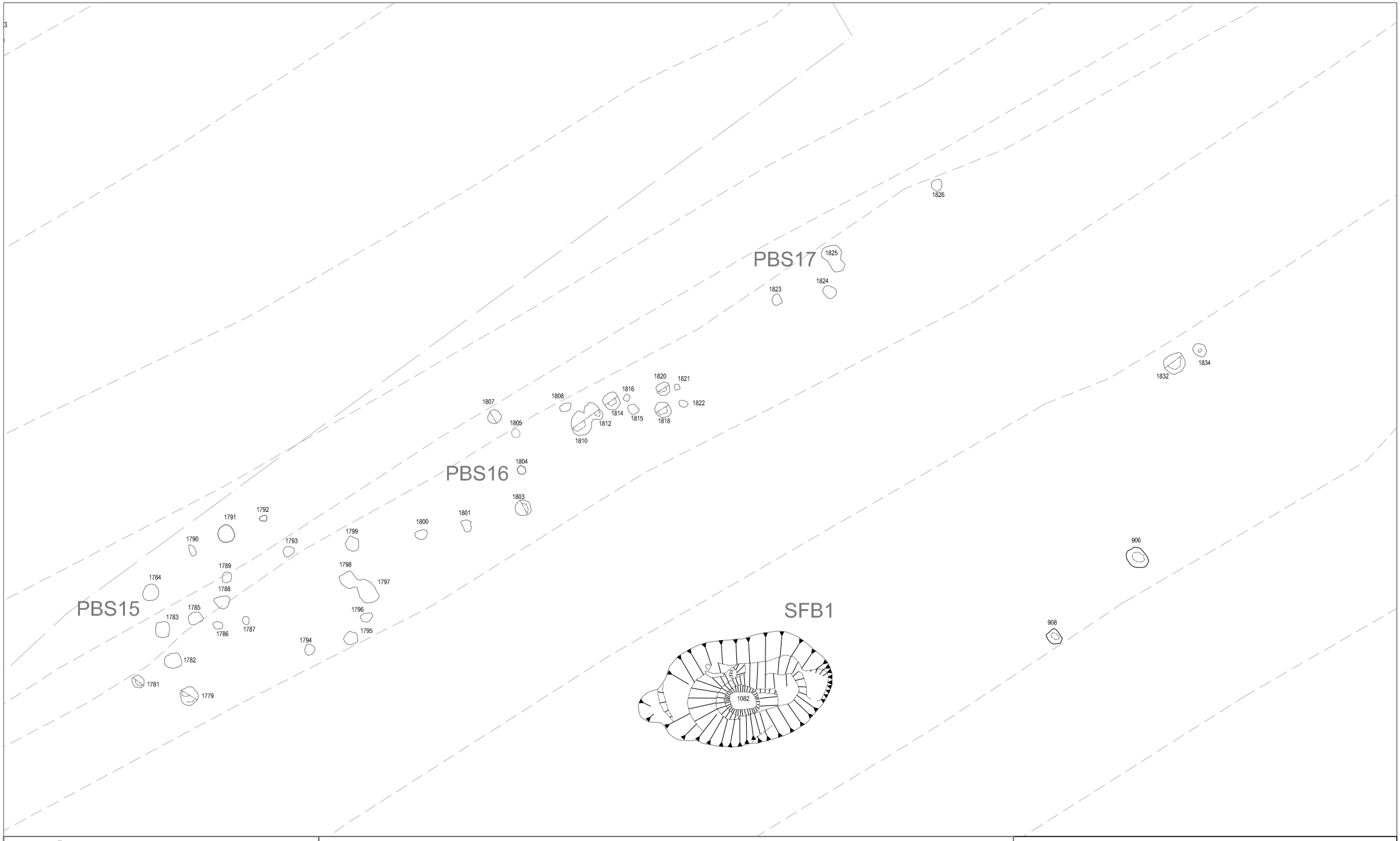

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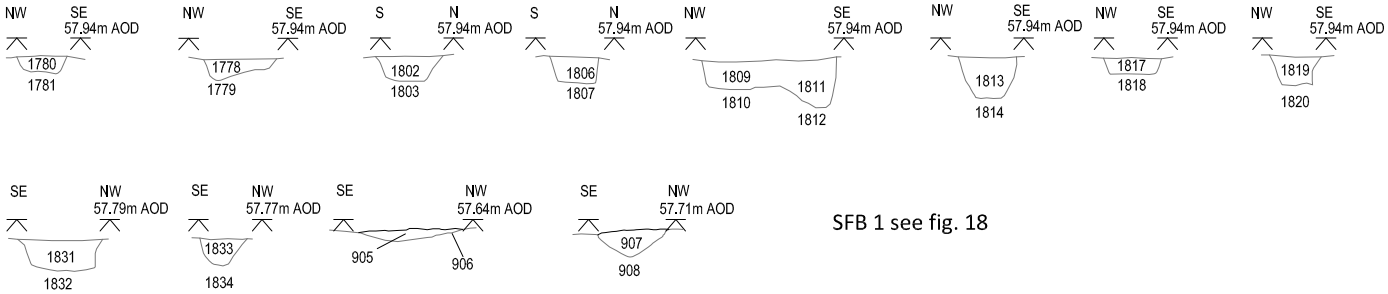
Figure 21: Plan of Area 9

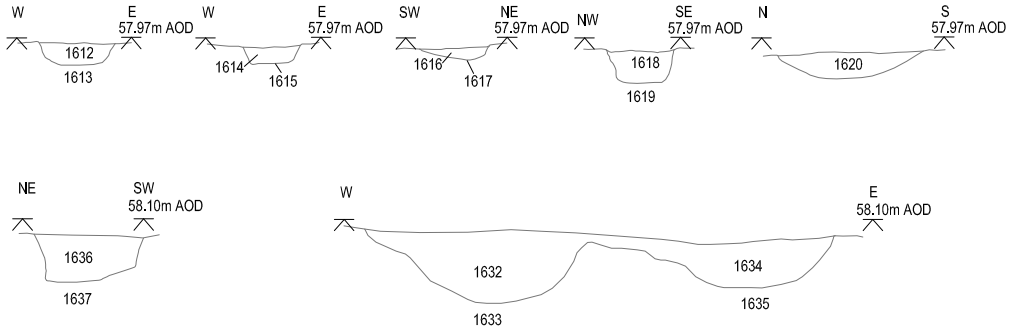
Felton Strip and record, Nothumberland
Project number 199

Area 9

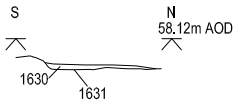


SFB 1 see fig. 18

Area 10



Area 11



SFB 3 see fig. 18

5.2.13 AREA 10 (figs. 2, 21, 22)

5.2.13.1 Area 10 in the southeast quadrant of the site was soil stripped at a later date to the main portion of the site (marked with a faint dashed line on figs 2). The strip in this quadrant was not undertaken under optimal conditions as it was carried out without archaeological supervision. Despite the aforementioned concerns, after re-cleaning by machine under archaeological supervision, it was clear that in common with the southwestern area of the site there was a relatively low density of postholes and pits which did not appear to continue to the north or west beyond the edge of excavation.

PBS 28

5.2.13.2 PBS 28 consisted of two pairs of opposing postholes (1613/15/17/19) with a third pair of postholes (1642/43) arranged centrally to the opposing pairs, but slightly to the south. The opposing pairs of postholes were angled towards one another and lay between 3.57m and 4.34m apart. The western pair of postholes was spaced 0.8m apart and the eastern pair was 1m apart, while the central pair lay only 0.35m apart.

Other features in Area 10

5.2.13.3 Pit 1621 lay 7.3m southwest of PBS28. It was oblong shaped with shallow concave sides and base and measured 0.95m by 0.78m, by 0.14m in depth. The fill consisted of grey sandy silty clay (1620) with few inclusions. Another pit (1637), lay 11m northwest of pit 1621, which was sub-circular in shape with near vertical sides and a generally flat base. It measured 0.67m by 0.59m by 0.25m in depth and was filled with brownish grey sandy silty clay (1636) with occasional flecks of charcoal.

5.2.13.4 Two pits (1633, 1635) at the north end of Area 10, lay alongside one another with their fills merging together. The eastern pit (1635) was the largest and measured 1.65m by 1.50m by 0.40m in depth. It had steeply sloped sides and an uneven base, and was filled with brownish grey sandy silty (1634) with occasional flecks of charcoal and mainly small sandstone fragments. Pit 1663, lay immediately west of pit 1633 and was sub-oblong shaped with steep concave sides and a rounded base. It was filled (1632) with a similar deposit as the neighbouring pit (fill 1634).

5.2.13.5 A pair of postholes (1644, 1611) located at the south end of Area 10, were spaced 0.97m apart and lay on an ENE axis. Another isolated posthole (1641) lay 5.13m northwest of PBS28.

Table 10-**Features in Area 10**

context	description	Max. dimensions	Depth	Fill	Comments
PBS28					
1613	posthole	0.47m x 0.38m	0.12m	1612- grey-sandy silt	-
1615	posthole	0.50m x 0.31m	0.10m	1614- brownish grey-sandy silt	-
1617	posthole	0.57m x 0.41m	0.08m	1616- grey-sandy silt	-
1619	posthole	0.64m x 0.42m	0.17m	1618- grey-sandy silt	-
1642	posthole	0.25m x 0.20m	-	grey-sandy silt	-
1643	posthole	0.21m x 0.16m	-	grey-sandy silt	-
Other features in Area 10					
1621	Pit	0.95m x 0.78m	0.14m	1620- grey-sandy silty clay	-
1637	Pit	0.67m x 0.59m	0.25m	1636- grey-sandy silty clay	-
1633	Pit	1.65m x 1.50m	0.40m	1632- grey-sandy silt	-
1635	Pit	1.28m x 0.86m	0.25m	1634- brownish grey-sandy silt	-
1640	posthole	0.35m x 0.27m	-	grey-sandy silt	-
1611	posthole	0.33m x 0.24m	0.07m	1610- grey-sandy silty clay	-
1644	posthole	0.28m x 0.28m	-	grey-sandy silty clay	-
1641	posthole	0.20m x 0.17m	-	grey-sandy silt	-

5.2.14 AREA 11 (figs. 21, 23)

5.2.14.1 Area 11 lies towards the central area of the northeast quadrant of the site where there was a relatively low density of archaeological features with only a pit and a short row of postholes PBS26 occupying its western portion. SFB3 and PBS 24 & 25 within the eastern edge of the area are discussed in Area 2 (refer 5.2.5). Posthole 1675 in the northeast corner of the area is discussed in Area 1 (refer 5.2.4).

PBS 26

5.2.14.2 PBS 26 consisted of an ENE-WSW orientated row of four small postholes (1682, 1683, 1684, 1685) that may represent a truncated remnant of a fence line or a small structure. The postholes extended for 1.96m in length with the three eastern postholes spaced between 0.66m and 0.72m apart with the smaller westernmost posthole lying 0.41m apart. A larger posthole or pit (1681) lay immediately north of the line which was filled with charcoal rich sandy silt in comparison to the other postholes that contained relatively inclusion free greyish brown sandy silt.

PBS 24 (refer 5.2.5.6)

PBS 25 (refer 5.2.5.7)

SFB 3 (refer 5.2.5.8)

Other features in Area 11

5.2.14.3 A heavily truncated pit (1680) lay 3.1m west of SFB3. It was sub-circular in plan with a very shallow profile with flat base and measured 0.81m by 0.71m, by a depth of 0.07m. Its fill consisted of grey sandy silt (1679) with few inclusions.

Table 11-**Features in Area 11**

context	description	Max. dimensions	Depth	Fill	Comments
PBS26					
1682	posthole	0.17m x 0.15m	-	grey- sandy silt	-
1683	posthole	0.21m x 0.20m	-	grey- sandy silt	-
1684	posthole	0.25m x 0.21m	-	grey- sandy silt	-
1685	posthole	0.13m x 0.11m	-	grey- sandy silt	-
1681	pit	0.49m x 0.37m	-	Charcoal rich grey-sandy silt	-
PBS26					
postholes 1697, 1699, 1700, 1701, 1697					Refer Table 2
PBS25					
postholes 1695, 1696					Refer Table 2
SFB3					
SFB3- 1397					Refer Table 2
Other features in Area 11					
1680	Pit	0.81m x 0.71m	0.07m	1679- grey- sandy silt	-
1675	posthole	-	-	-	Refer Table 1

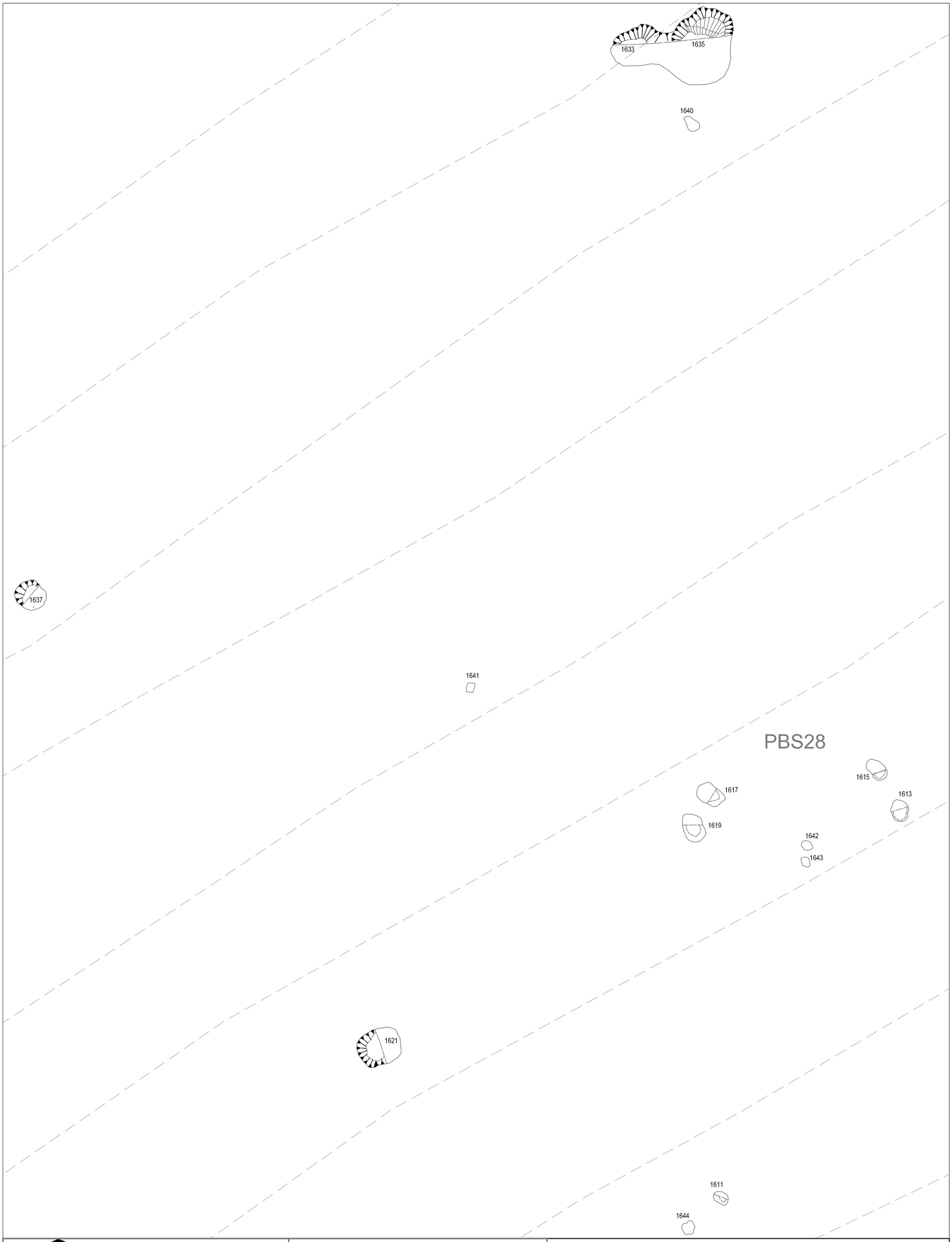


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Figure 23: Plan of Area 10

N

0 5m

scale 1:100 at A4 plot

Felton Strip and record, Northumberland
Project number 199

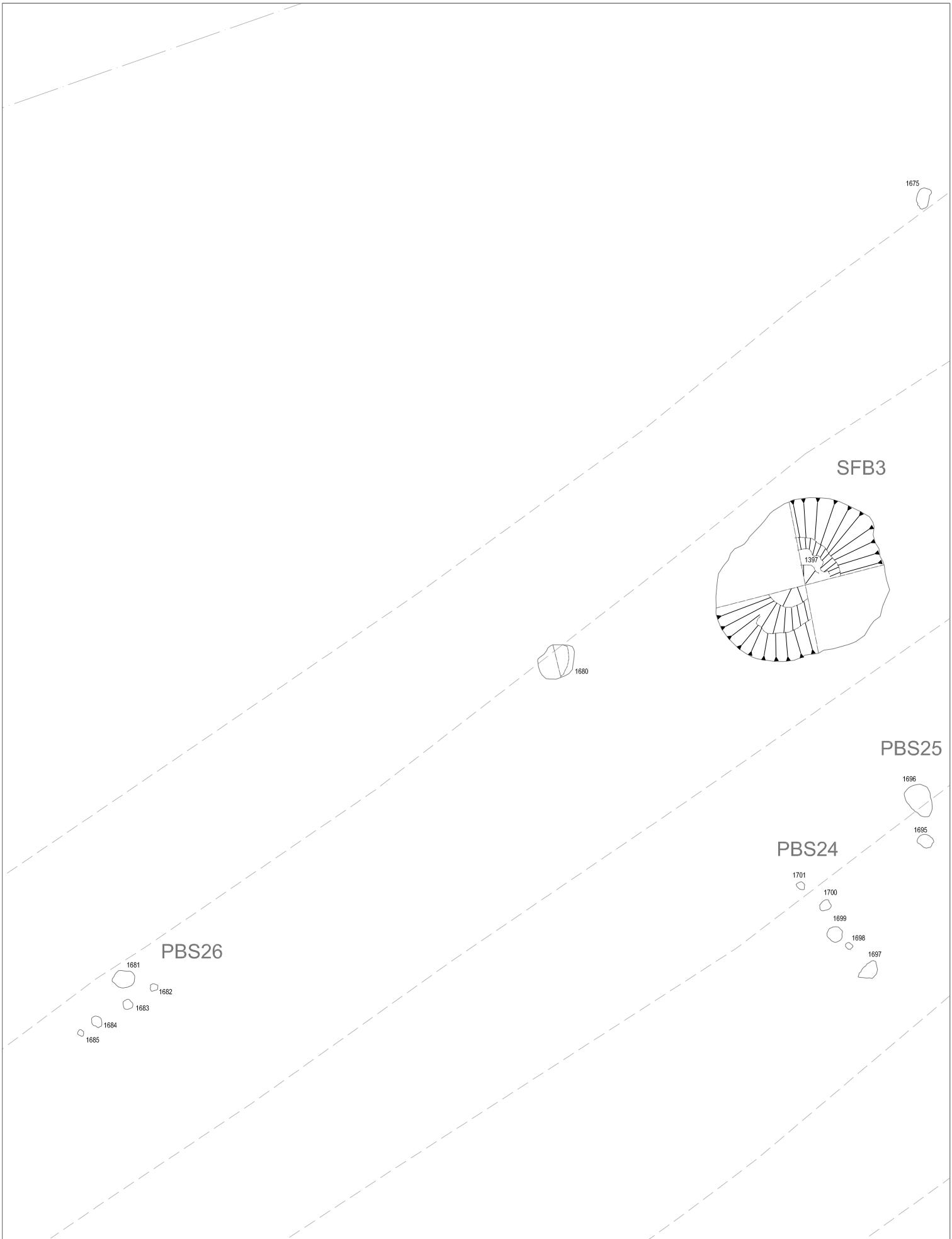

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Figure 24: Plan of Area 11

N

0 5m

scale 1:100 at A4 plot

Felton Strip and record, Northumberland
Project number 199

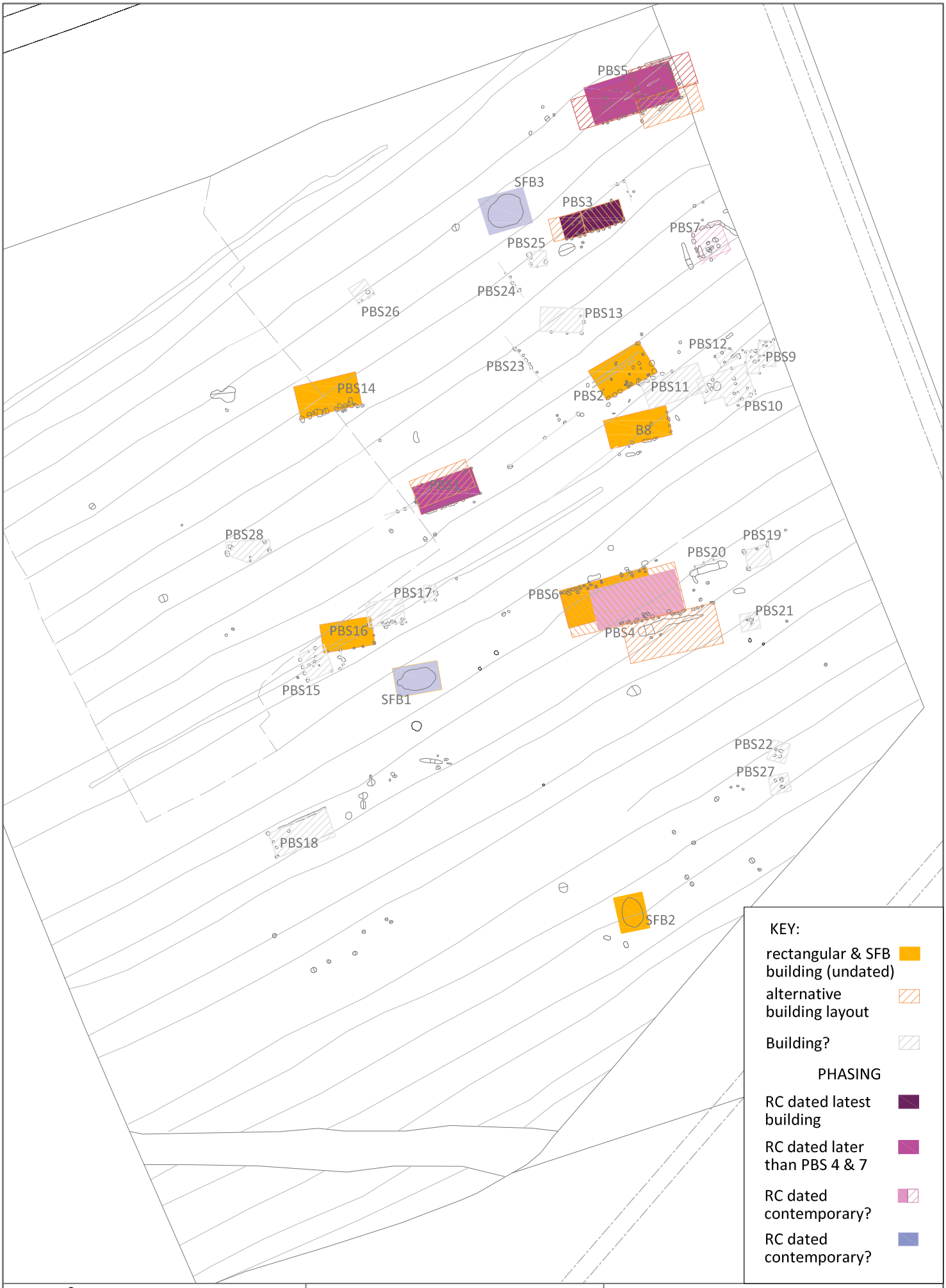

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Figure 25: Schematic plan of buildings at Felton strip and record

scale 1:500 at A4 plot
0 25m

Felton Strip and record, Northumberland
Project number 199

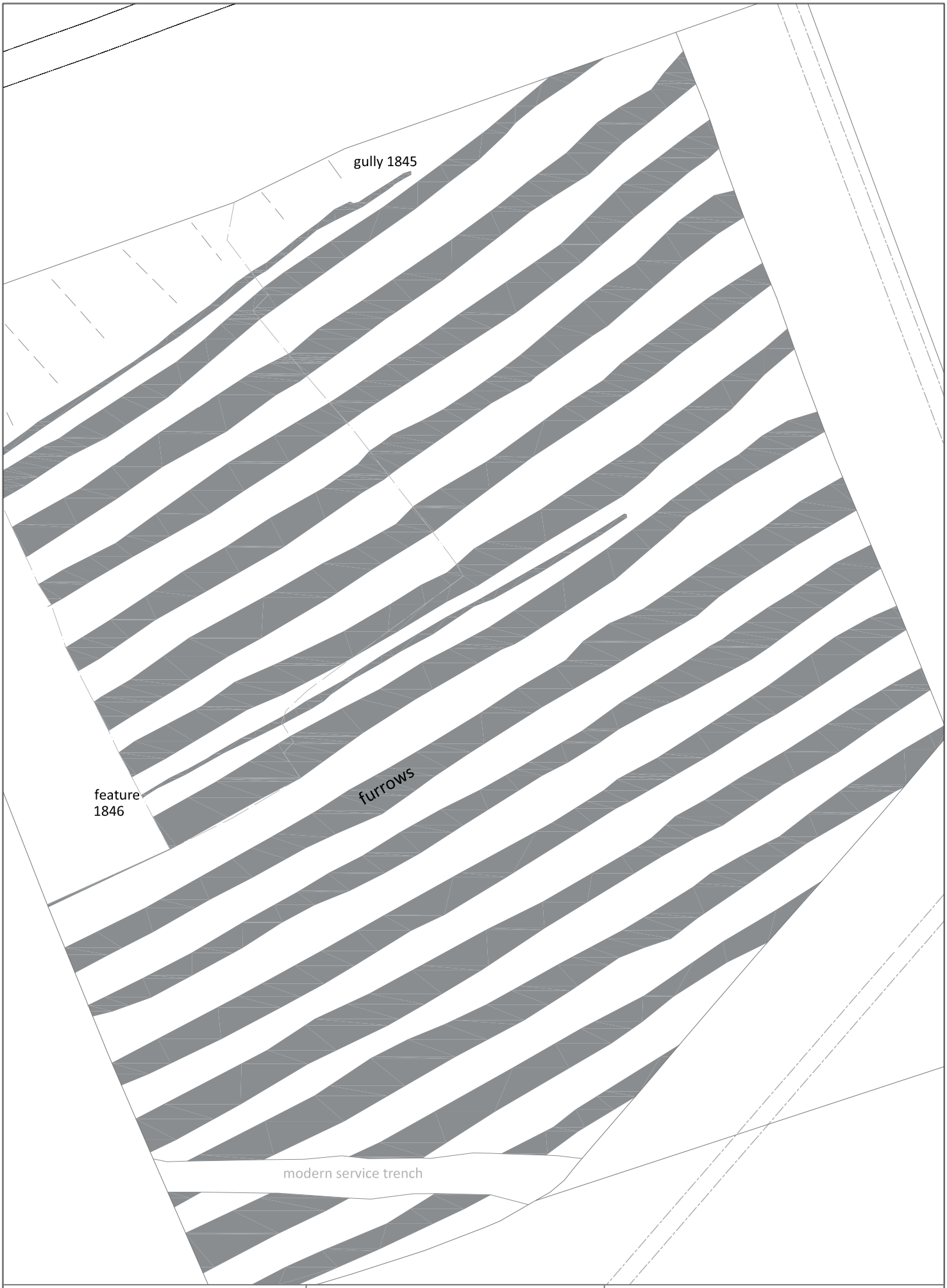
5.3. PHASES 3/4 MEDIEVAL AND POST-MEDIEVAL PERIODS

(fig. 26, Plate 1)

5.1 A Bayesian analysis of the radiocarbon determinations from the site suggests that the settlement was abandoned sometime between cal AD780-980 (*95% probability*). At a later date an extensive system of ridge and furrow was established that extended across the settlement showing no respect for the earlier layout and presumably signifying a reorganisation of the landscape. Whilst we have an approximate date for the end of the Anglo-Saxon settlement at the site it is uncertain at what period the site was incorporated into a ridge and furrow agricultural system and became part of the open field agricultural system associated with the medieval village of Felton to the south.

5.2 The layout of the ridge and furrow systems formed two broad patterns exposed during the strip and record and the earlier evaluation. An extensive east-west system of broad-rigg with an average wavelength of between 7.3-6.9m occupied most of the site with the exception of the northwestern edge where there was a poorly defined north-south orientated system.

5.3 The area remained agricultural land throughout the post-medieval period. A gully (1845) which lay along the northern edge of the east-west ridge and furrow system represented a former field boundary depicted on the first edition map 1864 (AD Archaeology 2015a) which followed the earlier layout of the ridge and furrow. The gully (1845) which was 0.88m in width and 0.08m in depth was excavated during the earlier evaluation within trench 8 (AD Archaeology 2016, 5.8.1). Another narrow linear feature (1846) that lay 38m to the south of gully 1845 may represent another field boundary cut along one of the ridges of the ridge and furrow. Cut 1846 measured 0.94m in width and 0.15m in depth and was filled with the same orangey brown clayey silt that filled the furrows. Linear feature 1846 does not follow any known field boundary depicted on earlier mapping.



AD Archaeology Ltd
on behalf of
Bellway Homes

Figure 26: Plan of Phase 3 /4

N

scale 1:500 at A4 plot

0 25m

Felton Strip and record, Northumberland
Project number 199

DATA ASSESSMENT

6 PLANT MACROFOSSIL ASSESSMENT REPORT

ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

on behalf of
AD Archaeology Ltd

Felton
Northumberland

palaeoenvironmental assessment

report 4473
July 2017

Durham University

Contents

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1. Summary

The project

1.1 This report presents the results of palaeoenvironmental assessment of 17 bulk samples taken during archaeological works at Felton, Northumberland.

1.2 The works were commissioned by AD Archaeology Ltd and conducted by Archaeological Services Durham University.

Results

1.3 Most of the samples contain archaeological material typical of background levels of waste associated with domestic occupation. Dietary evidence indicates a range of food sources were used including domestic animals, various cultivated crops and occasional wild-gathered plant foods. The charred macrofossil assemblages indicate the possible preference for oats and barley and the presence of charred seaweed. These remains are consistent with limited archaeobotanical evidence for the early medieval period in northern England. The predominance of charred hazel nutshells in pit fill [1386] is typical of prehistoric deposits and is consistent with the pottery evidence. Archaeological remains present in deposit [1011] support the provisional suggestion for metalworking activity at the site.

Recommendations

1.4 Early medieval occupation sites in northern England have been highlighted as in need of further archaeobotanical investigation (Hall & Huntley 2007; Huntley 2010). Examination of any unassessed samples could provide additional relevant data concerning the exploitation of fuel resources, diet and crop husbandry practices during the early medieval period. If additional work is undertaken, the results of this assessment could be incorporated with any further palaeoenvironmental data produced.

1.5 Material suitable for radiocarbon dating is available for all of the samples, although charcoal from [1105] and [1235] may have insufficient weight of carbon.

1.6 The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

2. Project background

Location and background

2.1 Archaeological works were conducted by AD Archaeology at land north of Felton, Northumberland. This report presents the results of palaeoenvironmental assessment of 17 bulk samples taken from gullies, pits, postholes and sunken feature buildings associated with a small settlement. Radiocarbon dating of hazel roundwood charcoal indicates an Anglo-Saxon origin for the site. Preliminary evidence from the pottery assemblage suggests prehistoric remains are also present.

Objective

2.2 The objective of the scheme of works was to assess the palaeoenvironmental potential of the samples, establish the presence of suitable radiocarbon dating material, and provide the client with appropriate recommendations.

Dates

2.3 Samples were received by Archaeological Services on 8th May 2017. Assessment and report preparation was conducted between 8th May and 6th July 2017.

Personnel

2.4 Assessment and report preparation was conducted by Lorne Elliott. Sample processing was by Dr Steph Piper, Daniel Adamson and Jeff Lowrey.

Archive

2.5 The site code is **FLT16**. The flots and finds are currently held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University awaiting collection or return. The charred plant remains will be retained at Archaeological Services Durham University.

3. Methods

3.1 The bulk samples were manually floated and sieved through a 500μm mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery, flint, glass and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification for charred and waterlogged botanical remains using a Leica MZ7.5 stereomicroscope. Identification of these was undertaken by comparison with modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University. Plant nomenclature follows Stace (2010). Habitat classifications follow Preston *et al.* (2002).

3.2 Selected charcoal fragments were identified, in order to provide material suitable for radiocarbon dating. The transverse, radial and tangential sections were examined at up to x600 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Schweingruber (1990) and Hather (2000), and modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University.

3.3 The works were undertaken in accordance with the palaeoenvironmental research aims and objectives outlined in the regional archaeological research framework and resource agendas (Petts & Gerrard 2006; Hall & Huntley 2007; Huntley 2010).

4. Results

4.1 Finds from the residues include sherds of pot [1269, 1329, 1385 and possibly 1391], fragments of flint [1385 and 1396], fired clay [1011, 1269, 1321 and 1391] and semi-vitrified fuel waste [1011, 1193, 1269 and 1391]. More than 80 fragments of probable prehistoric pot are present in pit fill [1386]. Fragments of fired clay and semi-vitrified fuel ash are most common in the deposit [1011] associated with metalworking activity. Much of this material is highly magnetic and was recovered alongside a small quantity of hammerscale (ball/flake) by using a magnet. More than half of the samples contain tiny indeterminate fragments of burnt or calcined bone and fragments of animal tooth occur in four contexts [1086, 1106, 1269 and 1321].

4.2 The samples produced small to moderate-sized flots predominantly comprising fragmented (often <4mm) charcoal, occasional traces of coal and cinder, and modern roots. The charcoal remains often contain abundant mineral inclusions and provide evidence for using stemwood (heartwood and sapwood) and branchwood. Oak, hazel and ash consistently occur in the charcoal assemblages, with evidence of birch, elm, Maloideae (hawthorn or apple) and possibly alder also present. Oak is the predominant species in the metalworking deposit [1011].

4.3 Charred plant macrofossils occur in all but two of the deposits [1105 and 1086] and predominantly comprise food remains (cereals and nutshells). Fragments of hazel nutshell occur in seven deposits and are most common in the pit deposit [1386] containing prehistoric pottery. The most frequently recorded cereal crop is oats, which are classed as large or small and slender depending on whether they were retained in the 2mm or 1mm sieve fraction. The large grains may derive from the common oat (*Avena sativa*), although diagnostic floret bases are absent. The smaller grains may also be common oat, as this species usually has two fertile florets, the first producing larger grains than the second (Jacomet 2006). Alternatively, these small grains may derive from bristle oats (*Avena strigosa*) or wild oats (*Avena fatua*).

4.4 Barley grains are the next most frequently recorded cereal remains. The poor condition of these grains prevented further species identification. The wheat grain recovered from posthole deposit [1291] has a compact shape typical of bread wheat (*Triticum aestivum*), although diagnostic chaff was absent. The wheat grain present in posthole deposit [1329] has a shape more characteristic of spelt wheat (*Triticum spelta*), although due to the absence of diagnostic chaff and poor preservation this was recorded as wheat (*Triticum* sp).

4.5 The most common plant macrofossils (quantity and frequency) are fragments of charred seaweed. These remains occur in varying numbers in ten contexts, but are absent from the possible prehistoric pit deposit [1386]. Occasional occurrences of charred weed seeds include cleavers [1291 and 1385], buttercup [1391], grass family [1490] and pink family [1291].

4.6 Traces of uncharred seeds such as goosefoots, clover and fumitories occur in seven of the deposits. The presence of modern roots and the well-drained nature of the site suggest that these remains are recent introductions. However, SFB 1 deposit [1106] contains uncharred fruitstones of bramble, wild raspberry and elder. This concentration of edible plant remains may be contemporary with the feature and may have been preserved by mineral replacement. Modern roots were absent from this deposit. The results are presented in Appendix 1.

5. Discussion

5.1 Most of the samples contain archaeological material typical of background levels of waste associated with domestic occupation. Dietary evidence indicates a range of food sources were used including domestic animals, various cultivated crops and occasional wild-gathered plant foods. Several deposits indicate a possible preference for oats and barley at the site, which is consistent with limited archaeobotanical evidence for the early medieval period in northern England (Hall & Huntley 2007; Huntley & Stallibrass 1995). A possible bread wheat grain in [1291] is also a typical crop for this period.

5.2 Charred remains of seaweed are often recorded on sites of early medieval origin in Britain and Ireland, especially in association with food waste and sunken-featured buildings, such as at Brougham, Cumbria (Huntley 1992), Shotton and Wooperton Quarry, Northumberland (Archaeological Services 2011; 2016) and Hart Village in the borough of Hartlepool (Archaeological Services 2015).

5.3 Evidence consistent with industrial remains is present in deposit [1011], and supports the provisional suggestion for metalworking activity at the site. The predominance of oak charcoal within this deposit is characteristic of industrial residues as it produces the required high temperatures.

5.4 The predominance of charred hazel nutshells in pit fill [1386] is typical of prehistoric deposits, as the presence of wild-gathered foods often outnumbers cereal remains for this period (Greig 1991). This is consistent with pottery evidence from the deposit, which indicates a prehistoric origin.

6. Recommendations

6.1 Early medieval occupation sites in northern England have been highlighted as in need of further archaeobotanical investigation (Hall & Huntley 2007; Huntley 2010). Examination of any unassessed samples could provide additional relevant data concerning the exploitation of fuel resources, diet and crop husbandry practices during the early medieval period. If additional work is undertaken, the results of this assessment could be incorporated with any further palaeoenvironmental data produced.

6.2 Material suitable for radiocarbon dating is available for all of the samples, although charcoal from [1105] and [1235] may have insufficient weight of carbon.

6.3 The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

7. Sources

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Appendix 1: Data from palaeoenvironmental assessment

Sample		**2**	**3**	**4**	**5**	**6**	**9**	**10**	**11**	**14**	**16**	**17**	**19**	**21**	**22**	**24**	**27**	**30**
Context		**1011**	**1105**	**1086**	**1106**	**1139**	**1193**	**1219**	**1235**	**1291**	**1269**	**1321**	**1329**	**1386**	**1391**	**1396**	**1441**	**1490**
Feature number		**1012**	**1104**	**1082**	**1082**	**1140**	**1194**	**1220**	**1236**	**1292**	**1270**	**1839**	**1330**	**1385**	**1390**	**1397**	**1440**	**1489**
Feature		**MW**	**SFB2**	**SFB1**	**SFB1**	**PH**	**PH**	**P**	**PH**	**PH**	**G**	**G**	**PH**	**P**	**PH**	**SFB3**	**PH**	**P**
Building		**-**	**-**	**-**	**-**	**1**	**2**	**3**	**3**	**4**	**4**	**4**	**5**	**5**	**7**	**-**	**6**	**-**
Material available for radiocarbon dating		✓	(✓)	✓	✓	✓	✓	✓	(✓)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Volume processed (l)		10	15	10	16	5	15	15	10	5	10	24	11	8	12	16	6	6
Volume of flot (ml)		250	50	20	150	30	50	150	40	25	40	350	50	100	50	40	20	30
Residue contents																		
Bone (burnt / calcined)	indet. frags	-	-	-	+	+	+	+	-	+	++	+	-	-	++	+	-	-
Charcoal		+++	-	-	+	+	+	+++	-	+	-	++	+	-	++	++	(+)	+
Fired clay	magnetic	+++	-	-	-	-	-	-	-	-	(+)	(+)	+	-	++	-	-	-
Flint (number of fragments)		-	-	-	-	-	-	-	-	-	-	-	-	3	-	1	-	-
Hammerscale	ball / flake	++	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pot (number of fragments)		-	-	-	-	-	-	-	-	-	1	-	4	>80	2?	-	-	-
Semi-vitrified fuel waste	vesicular	+++	-	-	-	-	+	-	-	-	++	-	-	-	++	-	-	-
Tooth (animal - enamel fragment)		-	-	2	1	-	-	-	-	-	8	3	-	-	-	-	-	-
Flot matrix																		
Charcoal		+++	++	++	+++	++	++	+++	++	++	++	+++	++	+++	++	++	-	++
Cinder / clinker		-	+	-	-	(+)	-	-	(+)	-	-	-	+	(+)	-	-	-	-
Coal / coal shale		-	+	-	+	(+)	+	-	(+)	-	(+)	-	+	(+)	(+)	(+)	-	-
Roots (modern)		-	-	-	-	+	++	+	+	-	-	-	-	-	+	-	-	+
Uncharred seeds		-	+	-	++	(+)	(+)	-	+	-	-	-	+	-	(+)	-	-	-
Charred remains (total count)																		
(c) *Avena* sp (Oat species)	>2mm large grain	-	-	-	3	1	1	-	-	-	-	-	-	-	-	-	-	-
(c) *Avena* sp (Oat species)	>1mm small grain	1	-	-	16	3	2	-	-	-	-	2	-	-	5	-	-	-
(c) Cerealia indeterminate	grain	-	-	-	-	-	-	-	-	-	-	-	1	-	4	-	-	-
(c) *Hordeum* sp (Barley species)	grain	-	-	-	1	-	-	-	-	-	-	4	-	-	-	1	1	-
(c) *Triticum* cf. *aestivum* (cf. Bread Wheat)	grain	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
(c) *Triticum* sp (Wheat species)	grain	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
(r) *Galium aparine* (Cleavers)	seed	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-
(s) Phaeophyceae (Brown Seaweed)	frond frag.	-	-	-	7	17	29	-	4	-	2	4	2	-	2	-	11	2
(t) *Corylus avellana* (Hazel)	nutshell frag.	-	-	-	1	2	1	1	-	-	-	6	1	19	-	-	-	-
(x) Caryophyllaceae undiff. (Pink family)	seed	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
(x) Poaceae undiff. (Grass family)	<1mm caryopsis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
(x) *Ranunculus* subgenus *Ranunculus* (Buttercup)	achene	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
(x) *Vicia* sp (Vetches)	seed	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Identified charcoal (✓*presence ? possible presence*)																		
Alnus glutinosa (Alder)		-	-	-	?	?	-	?	-	-	-	-	-	-	-	-	-	-
Betula sp (Birches)		-	-	-	✓	-	✓	-	-	-	-	-	-	-	-	-	-	-
Corylus avellana (Hazel)		✓	✓	✓	?	✓	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fraxinus excelsior (Ash)		-	-	✓	✓	✓	-	-	-	✓	-	-	-	-	-	✓	-	✓
Maloideae (hawthorn or apple)		-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-
Quercus sp (Oaks)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ulmus sp (Elms)		-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-

[c-cultivated; r-ruderal; s-seaweed; t-tree/shrub; x-wide niche. G-gully; MW-metalworking deposit; P-pit; PH-posthole; SFB-sunken feature building
(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant (✓) may be unsuitable for dating due to size or species]

7 ASSESSMENT OF PREHISTORIC POTTERY

LATER NEOLITHIC POTTERY FROM FELTON NORTHUMBERLAND
Dr. Rob Young

INTRODUCTION

152 sherds of prehistoric pottery, weighing 2,707gms, were recorded from Pit 1385, a feature cut by the later post holes (1381 and 1385) of an early medieval building, Building 5. These sherds represent three separate vessels (though see below for further discussion of Vessels 1 and 2). Vessels 1 and 2 are examples of Fengate Ware, a sub style within the mid-later Neolithic Impressed Ware Tradition and Vessel 3 represents a large thick walled vessel which may also be of later Neolithic date.

The overall total of prehistoric sherds represented at the site can be quantified as follows:

VESSEL NO.	Body	Weight gms.	Base	Weight gms.	Rim	Weight gms.
1	37	619	8	237	6	136
2	4	121	-	-	2	26
3	56	1379	-	-	1	26
INDET.	38	163	-	-	-	-
TOTAL	135	2282	8	237	9	188

The 38 indeterminate pottery fragments could possibly come from any of the three vessels identified. Given the fragmentary and abraded nature of these pieces it has not been possible to ascribe them to any single vessel.

As will be seen in the vessel descriptions below, the pieces ascribed to Vessels 1 and 2 share similar decorative traits and could well be from the same vessel. There would, however, appear to be a slight variation in fabric type, and for this reason the two 'vessels' have been separated here.

Technology

All three vessels are clearly hand built, probably using the coil technique, though it was not possible to identify any building lines within the sections of the surviving body sherds. They appear to have been wiped or smoothed before firing while they were still in a 'green' or leather-hard state. All three vessels exhibit (to a greater or lesser degree) an orange/brown outer surface, grey/black core and brown/grey inner surfaces (see Vessel Descriptions below for more detail). In cross section this manifests itself as a broadly two-tone fabric, lighter externally, and darker on the core and internal surfaces. Longworth (1984, 4) has suggested that this indicates

that vessels were fired in an inverted position with relatively free air circulation to the outer surfaces but with restricted air flow to the inner faces. It is often suggested that vessels like the ones under study were fired in a purposely constructed bonfire, however, Graham Taylor, a professional potter specialising in early technology and archaeological pottery reconstruction, has pointed out that similar results can be achieved in a domestic hearth (Taylor, pers. com.).

Fabric

All recovered sherds were examined in natural light, under a X10 magnification hand lens for the purposes of fabric identification. Two fabric types were identified.

Fabric 1: This fabric exhibits a hackly fracture, with regularly occurring rounded and angular fragments of light grey ?andesitic rock present. Some of these are up to 100mm across and they are found in association with more rarely occurring small, rounded quartz fragments and some small, angular and rounded, black grits of unknown type. Very rare quartz sand grains were also recorded, but these may have been a constituent element of the natural clay matrix. Vessels 1 and 3 exhibit this fabric type.

Fabric 2: This exhibits a hackly fracture, similar to Fabric 1. Rounded and angular ?andesitic rock fragments are also present though these seem to occur less regularly than in Fabric 1. Many more small, rounded, grits and quartz pieces were recorded, as was an increase in the amount of quartz sand visible. Fabric 2 feels much coarser to the touch than Fabric 1. Vessel 2 exhibits this fabric type and it is on that basis that Vessels 1 and 2 have been separated.

These fabrics may be similar to those noted by Miket in the later Neolithic assemblage from Thirlings (Miket, 2008, 75 – 76). All of the recorded inclusions could have been acquired from the local drift geology and fluvio-glacial deposits.

Abrasion and Fragmentation

Abrasion is one of the few measurable indicators of the use of pottery between the breakage of a pot, and the deposition of the sherds. As Miket *et al*. (2008, 31) have argued, it relates to the interval between the original use of a pot and its archaeological recovery. The methodology developed by Sørensen (1996) to assess ceramic abrasion has been applied here to examine the Felton pottery. Using this approach it is suggested that the vessels generally exhibit 'low abrasion' which can be defined as follows — edges maintain sharpness, but markedly extruding edges and temper are worn, core colour generally still fresh but texture is slightly smoother. This might suggest that all sherds were treated in the same way after breakage. As the data on sherd size by weight, set out below, indicates sherds of all sizes are present in the pottery assemblage recovered from Pit 1385. This might

suggest that breakage took place near to the place of deposition and that a large proportion of each vessel was present in the deposit. Selection of specific sherds for deposition on the basis of size, as was suggested at Overhailes (McGregor and Stewart, 2007, 70) does not appear to have taken place at Felton..

Decoration and Surface Treatment.

As Millson has recently pointed out (2013, 76 – 77): 'Fengate vessels have ornament on, and inside, the rim and sometimes over the entire external surface in motifs of: cord impressions, fingernail and fingertip impressions, bird bone, incision, stab marks and grooving. The collar in particular is frequently ornamented in such a way as to accentuate it, often with rows of stab marks immediately below.'

As the detailed vessel descriptions below indicate, both Vessels 1 and 2 exhibit finger/thumbnail decoration on their collars, and a row of deep, circular, impressions immediately below the collar. Vessel 1 has a detailed decorative repertoire over the body, involving both very finely incised lozenge/lattice patterns (possibly executed with a flint blade) and seemingly random, triangular, stab and drag impressions, probably carried out using the end of a small bone or a stick. The latter impressions run right down to the base of the pot.

The thick walled Vessel 3 has also seen some external surface decoration, this time in the form of, again, seemingly random, small, oval/circular impressions probably carried out with a round-ended implement.

Vessel 2 gives the impression of being more abraded than Vessels 1 and 3 in that its outer and inner surfaces seem to have been removed. The outer surfaces of Vessels 1 and 3, however, appear to have been wiped or smoothed before the incised and impressed decoration took place.

VESSEL DESCRIPTIONS

Vessel 1

A wide mouthed, flat based, collared jar form of the Fengate sub-style of later Neolithic 'Impressed Ware'. **Rim Diam**: 190mm; **Base Diam**: c.100mm. **Collar Depth:** 31mm; **Max. Collar Thickness:** 11mm; **Vessel Body Thickness Below Collar:** 11mm.

The rim of the vessel is slightly in-turned with a sharp, but rounded, shallow, rim bevel. The external surface of the collar is decorated with parallel lines of incised finger/thumb nail impressions arranged into in-filled triangles to create a running chevron design around the collar's circumference. The finger/thumb nail impressions carry on over the rim of the vessel onto the slight, internal, rim bevel for some 5mm. Immediately below the collar is a series of deep circular impressions made with a pointed implement. These impressions are c. 7-8mm in diameter and c.

4-5mm deep. They are set roughly 40-45 mm apart around the vessel's circumference. The impressions were clearly made after the main body decoration had been carried out as they cut a pattern of incised lozenge/lattice decoration that dominates the surviving body fragments. This incised lozenge/lattice decoration is very fine and may have been carried out with something like a flint blade or flake when the vessel was in a green or leather-hard state. The edges of the incisions are very sharp and clear. This decorative scheme was, in turn, overlain and cut by a further decorative addition to the body of the vessel in the form of a series of, what appear to be, random, triangular shaped, 'stab and drag' impressions. These were probably made with either the end of a sharpened stick or a small bone, possibly from a bird.

The stab and drag impressions run right down to the base of the vessel while the incised lozenge/lattice design may have been confined to the upper half of the body, immediately below the collar. Several conjoining body sherds, including two rim fragments, were recorded.

Eight base sherds were also recorded. The flat base is slightly flaring at the foot, a feature of some Fengate Ware vessels, and it is slightly omphalos in shape, thus creating a seeming foot ring some 9-10 mm wide around the bottom of the pot. The base thickness is 18-19mm, while the vessel walls, rising directly from the base, are 14-15mm thick, tapering towards the collar and vessel rim. Fine parallel striations on the base of the vessel may suggest that the pot was built upon a textile mat. The internal and external surfaces of all recorded sherds appear to have been wiped and smoothed.

In the main the vessel exhibits a red/orange/brown, oxidised , external surface with a black/dark grey reduced core and grey/brown inner surface. Some sherds, especially those making up the collared rim of the vessel, exhibit so-called 'fire clouds' where the fabric is blackened. As Gibson and Woods point out, these usually occur during open firing when the vessel has come into contact with the smoky part of the flame or with incompletely burnt fuel (Gibson and Woods, 1997, 156). The fabric has a 'soapy' feel; again a feature of some Fengate Ware vessels.

It has not been possible to reconstruct the height of the vessel.

Assessment of Sherd Size by Weight Vessel 1

51 sherds were recovered and sherd weights range from 2-108gms for the whole vessel with a mean sherd weight of 19.5 gms. This can be further broken down as follows:

Rim: 6 sherd : sherd weights range from 3 – 68gms with a mean sherd weight of 22.6gms

Base: 8 sherds: sherd weights range from 6 – 108gms with a mean sherd weight of 29.6gms

Body: 37 sherds: sherd weights range from 2 – 53gms with a mean sherd weight of 16.7gms

Vessel 2

This is a collared vessel, similar in shape to Vessel 1 above. It comprises of two conjoining rim/collar sherds and four body fragments. **Collar Depth:** 35mm; Max. **Collar Thickness:** 12mm; **Vessel Body Thickness Below Collar:** c. 11mm; **Body Sherd Thickness:** c. 12mm. The collar is decorated with parallel lines of incised finger/thumb nail impressions as with Vessel 1 and one roughly circular impression survives immediately below the collar. This is 9mm in diameter. A further, elongated, impression is visible on the broken edge of the collar sherd. One of the four recorded body sherds also exhibits some vestigial traces of impressed decoration, though this is too worn to be certain of its exact form.

The vessel exhibits an oxidised red/brown outer surface, grey core and grey inner surface.

Assessment of Sherd Size by Weight Vessel 2

6 sherd were recorded and sherd weights range from 1 – 32 gms with a mean sherd weight of 24.5 gms. This can be further broken down as follows:

Rim: 2 sherds: sherd weights range from 10 -17gms with a mean sherd weight of 13.5gms.

Body: 4 sherds: sherd weights range from 1 – 32gms with a mean sherd weight of 30.25gms.

Vessel 3

This appears to be a thick walled, straight sided vessel. One possible rim sherd was recorded. This would suggest that the vessel rim was also thick and rounded, and slightly everted in a smooth curve. **Max. Rim Thickness:** 17mm. **Max. Wall Sherd Thickness: 21mm**. The vessel has an orange, oxidised, outer surface of varying thickness (Max. c. 10mm – Min. c. 1-3mm) with a black/dark grey, heavily reduced, core and grey/brown inner surfaces. Outer surface decoration is visible, in the form of seemingly random, shallow, circular/oval, impressions/stab marks probably made with a round ended tool. The outer vessel surface appears to have been wiped and smoothed. Several conjoining sherds have been identified but it has not been possible to reconstruct a complete vessel profile.

Assessment of Sherd Size by Weight Vessel 3

57 sherds were recorded and sherd weights range from 3gms – 63 gms with a mean sherd weight of 24.6gms. This can be further broken down as follows:

Rim: 1 sherd: sherd weighs 26gms

Body: 56 sherds: sherd weights range from 3 – 63gms with a mean sherd weight of 24.6gms.

GENERAL DISCUSSION

Fengate Ware – Vessels 1 and 2

The Fengate sub-style of the Impressed Ware ceramic tradition is not commonly found in the northern region. The most prolific site in Northumberland is that at Thirlings. Here, excavations carried out between 1973 and 1981 on a series of pits and related structures produced a large assemblage of both Early, and Later, Neolithic pottery types. These included Early Neolithic carinated bowl forms, a range of Impressed Wares (including Fengate Ware), and Grooved Ware (Miket *et. al*, 2008).

Within the number of excavated pits at the site, F466, the largest and most complex of those excavated, produced the remains of at least eight ceramic vessels. These had been used to line the surface of the interior of the pit (Miket *et. al*., 2008, 17). F466 was circular in shape and had a diameter of 900mm. It was 340mm deep, with steep sides and a flattened base. Its overall morphology may have been similar to Pit 1385 at Felton.

Of crucial importance to the present discussion are the three large sherds recovered from F466 from a convex vessel with a broad external collar (P 57.4), very similar in shape to Vessels 1 and 2 from Felton.

While the morphology of the vessel is almost identical to the two pots from Felton, the decorative traits on the Thirlings vessel are different, consisting of concentric arcs of twisted cord separated by horizontal lines of twisted cord. As with the Felton examples, however, a series of circular stab impressions is visible, immediately below the collar. The collar decoration carries on over onto the rim bevel (Miket *et al.*, 2008, 61, Illus. 27 and 66).

F 466 also produced the rim from a further collared, Fengate Ware, vessel (P57.7), with a plain rounded rim bevel. Again, a row of deep circular stab impressions was recorded just below the collar, which was decorated with incised cross hatching (Miket *et al.,* 2008, 62, Illus. 28 and 67).

A further pit, Feature 621, also produced the remains of a large, convex, collared, Fengate style vessel some 12mm in thickness (P. 66.1). The broad collar was decorated with five parallel lines of twisted-cord impression and below the collar was an evenly spaced, deep indentation. The shoulder of the vessel was decorated with vertical fingernail impressions and the vessel's inward sloping rim-bevel comes down to a pronounced internal ridge. Its surface is decorated with an incised herringbone pattern (Miket *et al,* 2008, 62, Illus. 28 and 67-68).

In his discussion of the Later Neolithic ceramic material from Thirlings, Miket notes that several groupings of vessel types can be arrived at.

Group 2 consists of:

> 'wide-mouthed, truncated, flat-based jars that divide into two sub-forms, a and b, depending upon whether it is of simple-profiled form or exhibits a pronounced external collar. The latter (2b) ranges from the slight collar to deeper forms The rim-bevel is occasionally flat or inturned, but more usually rounded. The fabric is coarse with rougher surfaces and some gritting. Decoration is executed with a heavier twisted cord and with oblique incisions, usually in the form of cross-hatching, applied to the outer collar and rim. A common element is the presence of a single, external, horizontal row of indented pits encircling the vessel immediately below the collar, executed in a variety of mediums, including pointed implements and finger-tipping. In one instance the body is also decorated with pinched finger-tipping.
>
> These vessels come in a wide range of sizes, varying from the small bowl with a rim diameter of around 200 mm and a narrower collar than usual, perhaps reflecting its miniaturized size (e.g. P72.3) up to the larger, thick-walled vessels with heavy bases, that have external rim diameters in excess of 300 mm (e.g. P57.4). (Miket *et al*., 2008, 73-74).

Miket suggests that this sub-group is represented by a minimum of ten vessels overall: P.57.2, P.57.4, P.57.7, P.57.8, P.60, P.66.1, P69.1?, P.72.1/2, P.72.3, P.80.1, P95.1/2 and P117.1. Not all of these are illustrated. (Miket, *et al.*, 2008, 74).

Miket further highlights comparable vessels to the collared forms recorded at Thirlings which are germaine to our current discussion. These include pots from Marton-le-Moor (Tavener and Speed *in prep*.), Fengate (Leeds 1922, 224–25) and West Heslerton (Manby 1999, 63 – 77, fig. 42). The last site, in particular, has collared forms bearing strikingly similar decorative motifs to the Thirlings and Felton material, including the single row of pits under the collar.

Manby has also recorded further examples of Fengate Ware from sites in North Yorkshire which are relevant as parallels for the Felton material. Of particular interest are vessels recorded from Site 19 at Carnaby Top, Boynton, on the Yorkshire Wolds (Manby, 1975, 41 – 44; 49, Fig. 13). Here, vessels 1, 2 and 3 are of collared form. No. 1 has a marked collar with a row of incised 'pits 'beneath the collar, similar to the two Felton pots, while No. 3 exhibits similar use of finger/thumb nail incisions, again, on its collar (Manby, 1975, 49, Fig. 13).

In her recent, excellent, but as yet unpublished, doctoral review of *Ceramics of the Tyne-Forth Region, C. 3500-1500 BC* (2013) (available at Durham E-Theses Online: http://etheses.dur.ac.uk/7000), Corrine Millson has discussed the occurrence of Fengate Ware in her study region. She discusses the Thirlings material in some detail and points out parallels in terms of collared vessels of Fengate Ware type from the site of Overhailes, (East Linton), East Lothian (MIllson, 2013, 163 – 172).

Overhailes is a Mid-Late Neolithic settlement site on a gravel terrace, evidenced by an ephemeral wooden, stake-built, structure with an associated 'yard' area (McGregor and Stewart, 2007, 70). Within this yard area two large pits were located and excavated. The northern most example, (247), had two fills (246) and (257). The former produced a range of domestic debris, including flint material, a polished stone axe and sherds from at least 12 Fengate Ware style vessels, several of which exhibited encrusted deposits on their surfaces which might suggest the use of the pottery in food preparation and cooking. Burnt animal bone and charcoal was also discovered. Vessel V1 at Overhailes has direct parallels with the material from Felton (MacGregor & Stuart, 2007, Fig. 4.6, V1) a further collared vessel V2 was also recorded (MacGregor & Stuart, 2007, Fig. 4.6, V2).

Dating

The traditional chronological spread for Fengate Ware would place its use in the period from 3350-2800 cal BC (Barclay 2006; Gibson and Kinnes 1997).

A radio-carbon date from Thirlings, on a bulk charcoal sample from Pit 466, associated with collared, Fengate Ware, vessels suggests a date for the pit (and by association the pottery) of 2920-2210 cal. BC (HAR - 1451). By the same token, radio carbon dating of hazel charcoal and hazel nut shells from fill (246) in pit (247) at Overhailes has produced dates of 3340-2920 cal. BC (SUERC - 7504) and 3320-2910 cal. BC (SUERC - 7505).

Vessel 3

This large, thick-walled, vessel is possibly similar in overall shape to P85 from Feature 1004 at Thirlings (Miket *et al.,* 2008, 63, Illus. 29; 69) and also possibly P95.1 from Feature 1300 (Miket *et al*., 2008, 65, Illus. 31; 70).

CONCLUSION

The recovery of Vessels 1 and 2 from the excavations at Felton expand the known distribution of what is very rare Fengate Ware material within the northern region and both vessels add to our understanding of later prehistoric ceramic technology and the later prehistoric ceramic decorative repertoire. As the general discussion shows, morphological parallels for this type of pottery can be found right across the region, but always in small amounts. As a result, this small assemblage of later prehistoric pottery from a single pit at Felton is clearly of regional importance.

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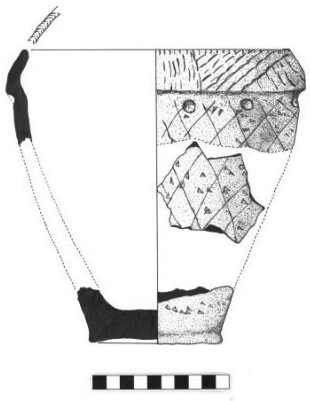

Illustrated Pottery- Vessel 1 Fengate Ware –

8 ASSESSMENT OF SMALL FINDS

SMALL FINDS FROM FELTON NORTHUMBERLAND
A. Croom

THE POTTERY

1. Handmade jar or cooking pot, with reddish-brown surfaces and black core. Shell-tempered fabric, without mica and with only very rare rounded quartz inclusions. The shell fragments (many of which have dissolved, leaving voids) are occasionally as large as 1mm across, but are generally smaller. Very little of the rim survives, but it includes the remains of a vertical pierced lug with part of an elongated hole cut pre-firing. The lower part of the interior surface is blackened, with a well-defined upper edge, perhaps from burnt food remains. Date: seventh to ninth century.

Very little Middle Saxon pottery is known from the region and it appears pottery use was generally uncommon in this period, with local production not developing until the late eleventh or twelfth century (Jenner *et al* 2006, 405). Whitby-type ware has been found in small quantities at Jarrow and Newcastle, and analysis of a sherd from Jarrow suggested a source north of the Humber, although not necessarily in the north-east (*ibid*., 331; Vince 2006, 431). It is possible it was imported to the region, and it is likely that this shell-tempered ware was also an import, perhaps from York or Humberside: 'Maxey-type' shell-tempered ware is found through-out Lincolnshire, Northamptonshire and Cambridgeshire, and is known to have reached as far as York (Young and Vince 2009, 349).

THE SMALL FINDS

1. Spindle-whorl (D:37mm B:18mm hole D (flat side):10mm (domed side):8mm Wt:27g). 1390, SF1

Lathe-turned stone spindle-whorl in micaceous siltstone (*identification by S. Humphrey*), with three incised concentric grooves on the curved face, and a slightly polished upper surface. This form is Walton Rogers 1997 type A1, dated mainly to the ninth and tenth centuries and in decline during the eleventh century (Walton Rogers 1997, 1736). Similar whorls in fine-grained grey stones with incised decoration have an eastern distribution, with examples known from York and Flixborough (Walton Rogers 1997, fig. 806, no. 6536; Walton Rogers 2009, 301, nos 2507-8; fig. 9.3, no. 2537) and East Anglia (eg PAS NMS-B4E236, NMS-C3AED5; SF-079017). Most stone spindle-whorls appear to be made locally (Walton Rogers 2009, 283), but the close similarities in design of these grey, lathe-turned whorls, and their wide-spread distribution, may suggest some were traded items.

2. Worked stone (L:72mm W:72+mm B:33). 1084, SF9

Incomplete fragment of micaceous red sandstone, probably from a water-worn cobble. Two at least of the surviving sides have been smoothed, and meet at a sharply defined angle. There are also traces of faint grooves on the flat face, so it may have been used as a whetstone or as a rubbing stone or burnisher for the finishing of textiles or leathers. Cf Jarrow: Cramp 2006, fig. 43.2.2, nos WS23,

WSS24, WSS27; also fig. 34.2.7, nos WS55, WSS57; Flixborough: Watling 2009, 300.

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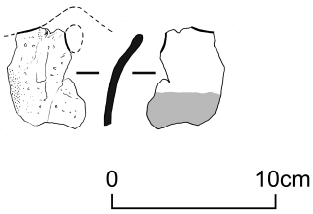
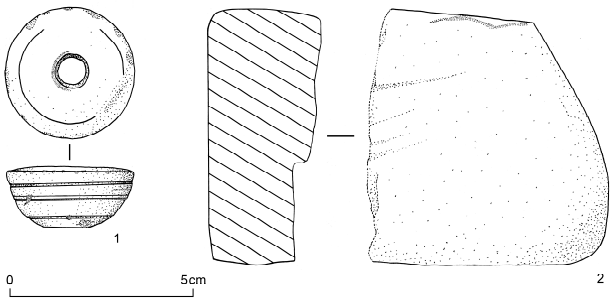


Illustrated Anglo-Saxon Pottery (SF.2)



1-Spindle Whorl
2- Worked stone

9 ASSESSMENT OF METALLURGICAL ASSEMBLAGE

Heritage Science Solutions

Assessment of Metalworking Debris from Felton

David Dungworth

Introduction
The metalworking debris submitted for assessment was recovered during archaeological recording works undertaken by AD Archaeology at Felton, Northumberland. The excavation identified the remains of 10 post built structures and three sunken-featured buildings (all of Anglo-Saxon date).

Methods
All of the material submitted for assessment was examined visually and recording following standard guidance (Historic England 2015). The material was weighed and selected fragments were photographed. The categories of material identified include:

- Smithing slag cake
  These are plano-convex lumps of slag which form within a blacksmith's hearth due to reactions between the heated iron, fuel, hearth lining and any flux
- Dense iron silicate
  These are dense lumps of slag which are most commonly associated with iron smelting where the slag was not separated by tapping but accumulated near the base of the furnace
- Flowed slag
  These are small pieces of slag which have flowed surfaces, and resemble small fragments of tap slag. They are mostly commonly associated with iron smelting where the slag was not separated by tapping but accumulated near the base of the furnace
- Non-diagnostic iron slag
  These small pieces of slag lack any distinctive morphology which would allow the identification of the technological process(es) which gave rise to them. They are usually of a colour and density which allows them to be linked to ironworking but it is not possible to be certain whether they were formed by smelting or smithing
- Fired ceramic
  Fragments of ceramic material which has been fired (usually to a red-orange colour)
- Vitrified ceramic
  Fragments of ceramic material which has one (outer) surface with an oxidised red-orange colour, while the other (inner) surface is vitrified and black

Results
The material examined includes 1525g of ironworking slag and related materials. This includes positive evidence for iron smithing (*eg* the smithing slag cake from context [1003] SF 3) and some slag (*eg* the dense iron silicate slag from context [1219] SF 8) which suggests that some iron smelting took place.

Heritage Science Solutions

SF	Context	Weight	Count	Notes
3	1003	341g	1	Smithing slag cake (L = 106mm; W = 96mm; D/H 50mm). Figure 1
3	1003	38g	1	Vitrified ceramic
4	1011	175g	6	Non-diagnostic iron slag
4	1011	101g	3	Fired ceramic (some variation in colour, some reduced fired areas suggesting this originally came from a metallurgical installation)
4	1011	34g	1	Vitrified ceramic
5	1007	112g	7	Non-diagnostic iron slag
5	1007	7g	2	Vitrified ceramic
5	1007	35g	1	Flowed slag
7	1001	257g	1	Vitrified ceramic. Figure 2
8	1219	410g	2	Dense iron silicate, one fragment with abundant charcoal impressions. Figures 3 and 4
10	1500	15g	2	Non-diagnostic iron slag
Total		**1525g**		

Figure 1. Smithing slag cake (upper surface = left, lower surface = right)

Figure 2. Vitrified ceramic, probably the remains of smithing hearth or smelting furnace (inner surface = left, outer surface = right)

Figure 3. Fragment of dense iron silicate

Figure 4. Fragment of dense iron silicate showing abundant charcoal impressions

The recovered metalworking debris was largely recovered from postholes and pits with two principal foci: 1.1kg of slag (smithing slag cake, non-diagnostic ironworking slag and vitrified ceramic, SF3, 4, 5 and 7) was recovered from postholes that made up post built structure 22, while the possible smelting slag (SF8) was recovered from a pit adjacent to post built structure 3.

Conclusions

The metalworking residues recovered at Felton provide positive (if limited) evidence for the primary production (smelting) of iron and the secondary production (smithing) of finished artefacts.

Very little is known about iron smelting during the Anglo-Saxon period, despite the abundant evidence for the fabrication of iron and steel artefacts known from the metallographic examination of finished objects (*eg* Blakelock and McDonnell 2007).

There is some evidence for 'slag-pit' furnaces from the eastern part of England. Large slag blocks have been found at a number of sites, including Mucking, Essex (McDonnell in Hammerow 1993) and Aylesham, Norfolk (Tylecote 1986, Fig 81). This technology is well known on the continent and is likely to have been introduced by the Anglo-Saxons. Broadly similar smelting which made use of non-tapping furnaces and yielded furnace bottoms or slag cakes (of early and/or middle Saxon date) is known from Millbrook, Sussex (Tebbutt 1982), Burlescomb, Devon (Reed *et al* 2006), Clearwater, Gloucestershire (Pine *et al* 2009) and Ramsbury, Wiltshire (Haslam 1980). There are no well-documented Anglo-Saxon iron production sites north of the Humber. The recent excavation at Shotton recovered a very small quantity of (probably smithing) slag but it was 'impossible to fully characterise the practices taking place' (Muncaster *et al* 2014).

The UK research framework for archaeometallurgy (Bayley *et al* 2008, 68) stresses the need to:

- Investigate the nature of primary metal production in post-Roman societies.
- Investigate continuity versus replacement for iron technology and production in the early medieval period, particularly comparing different areas of the British Isles.
- Develop provenancing tools to clarify the nature of trade in metals both within the British Isles and with external areas.
- Further investigate the nature and production of early medieval steel.

Recommendations

The metallurgical debris recovered from Felton provides evidence for ironworking (and probably both smelting and smithing); however, the small quantity of material recovered is insufficient to justify further detailed analysis (despite the paucity of regional evidence for ironworking during this period).

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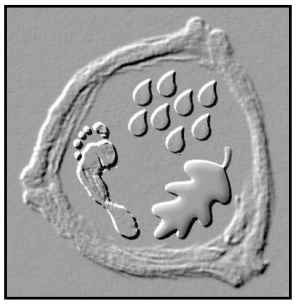
10 RADIOCARBON DATING

RADIOCARBON DATING REPORT

Suzi Richer

5th January 2018



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Contents

Introduction and methods

A total of 9 radiocarbon measurements have been obtained (Table 12) from Felton. One measurement was from the initial evaluation of the site and eight new determinations have been obtained during the current post-excavation work from the strip and map phase. All measurements were obtained from charred short-lived single entity plant macrofossils to ensure that the offset between the dated sample and the archaeological event of interest is kept to a minimum.

Laboratory methods

Samples were dated at the Scottish Universities Environmental Research Centre (SUERC-) by AMS. These were processed and dated using the methods described in Dunbar et al (2016). The results (Table 12) are conventional radiocarbon ages (Stuiver and Polach 1977), and quoted in accordance with the international standard known as the Trondheim convention.

Radiocarbon calibration

The calibrations of these results, which relate the radiocarbon measurements directly to the calendrical time scale, are also given in Table 12. All have been calculated using the datasets published by Reimer et al (2013) and the computer program OxCal v4.3 (Bronk Ramsey 1995; 1998; 2001; 2009). The calibrated date ranges cited are quoted in the form recommended by Mook (1986), with the end points rounded outward to 10 years. The ranges in Table 12 have been calculated according to the maximum intercept method (Stuiver and Reimer 1986) and are cited at two sigma (95% confidence).

Bayesian modelling

The radiocarbon results sequences are presented here in Bayesian chronological models (Tables 13 and 14; Figures 27 and 28) (Buck *et al* 1996). Calibration of radiocarbon dates provides us with an accurate estimate of the age of the dated sample, whilst this is useful, archaeological questions are often more searching than this, and it is the event that the sample represents that we are usually more interested in. These events include when a site came into use, the duration of its usage and the likelihood of contemporaneity. Using the radiocarbon measurements in conjunction with archaeological information we can provide realistic estimates, called *posterior density estimates*, for such archaeological events. All posterior density estimates derived from the Bayesian modelling in this report are reported in *italics*. It should be emphasised that the posterior density estimates produced by this modelling are not absolute. They are interpretative estimates, which can and will change as further data become available and as other researchers choose to model the existing data from different perspectives. The modelling technique used is a form of Markov Chain Monte Carlo sampling, and has been applied using the program OxCal v4.3 (http://c14.arch.ox.ac.uk/). Details of the algorithms employed by this program are available in Bronk Ramsey (1995; 1998; 2001; 2009) or from the online manual.

Results and discussion

An initial radiocarbon determination (SUERC-66707) was obtained during the evaluation phase, the remaining samples sent for dating were all selected from features identified as belonging to 'Phase 2 Anglo-Saxon Period' of the site (see Table 12). Six of the measurements (SUERC-75834, SUERC-75835, SUERC-75836, SUERC-75837, SUERC-75838 and SUERC-75844) came from post-built structures (PBSs) and two were from sunken featured buildings (SFBs) (SUERC-75839 and SUERC-75840).

Taking the radiocarbon measurements as a group, the model for the early-medieval phase of the site has good overall agreement (Amodel=79) and estimates for the start and end of the phase (Table 13 and Figure 28) along with the span of activity for this phase (distribution not shown) have been calculated.

It can be estimated that the early-medieval Phase 2 of the site had begun by *cal AD 580–765* (*95% probability*; *Start Phase 2*; Figure 2) and ended by *cal AD 780–980* (*95% probability*; *End Phase 2*; Figure 2), with the site estimated to have been in existence a relatively short period of between *25–270 years* (*95% probability*; distribution not shown). The radiocarbon dates are largely consistent with the dates from the finds (Croom, this report), with pottery dating to the 7–9th centuries and a spindle-whorl dating to the 9–10th centuries.

Post-built structures

There was some uncertainty around the interpretation of PBS 4, which consisted of a row of post holes, and a nearby gully, therefore two dates were obtained from PBS 4, and the gully, the first (SUERC-75835) was from a post hole and the second (SUERC-75836) was from the gully. Using a Ward and Wilson chi-square (1978) test the two measurements were found to be consistent at a 95% confidence level (df=1, T=0.8, cf. 3.8) with the samples having the same ^{14}C content, suggesting that the gully and the postholes were constructed around the same time. The measurement from PBS 7 was also consistent with those from PBS 4 at 95% confidence (df=2, T=1.1, cf. 6), suggesting that the two structures were in use at a similar time.

PBSs 1 and 5 and are likely to have been constructed contemporaneously, again shown by the fact that the two measurements (SUERC-75834 and SUERC-75837) are consistent at 95% confidence using a Ward and Wilson (1978) test. Using the *Order* function in OxCal PBS 1 and 5 are estimated to be younger than PBS 7 and PBS 4 (*92–97% probability*; Table 14) with PBS 3 being the youngest (*72–99% probability*; Table 14) of all the dated PBSs on the site.

Sunken-feature buildings

Two dates were obtained from sunken-featured buildings, one from SFB 1 (SUERC-75839) and one from SFB 3 (SUERC-75840). Using a Ward and Wilson chi-squared test (1978) the two measurements are consistent at 95% confidence (df=1, T=3.1, cf. 3.8) with the samples having the same ^{14}C content, which suggests that usage of the

pits within the two SFBs occurred around the same time.

Laboratory number	Material and context	Radiocarbon Age (BP)	$\delta^{13}C$ (‰)	Calibrated date (95% confidence)	*Posterior Density Estimate (95% probability)*
SUERC-66707	Charred roundwood, *Corylus avellana*, context 903	1295±30	26.6	cal AD 650–780	*cal AD 665–775*
SUERC-75834	Charred nutshell, *Corylus avellana*, context 1139, PBS 1	1270±29	-25.7	cal AD 660–780	*cal AD 665–780 (93%)* *cal AD 790–810 (2%)*
SUERC-75835	Charred nutshell, *Corylus avellana*, context 1291, PBS 4	1208±26	-26.9	cal AD 715–890	*cal AD 715–745 (8%)* *cal AD 765–885 (87%)*
SUERC-75836	Charred nutshell, *Corylus avellana*, context 1321, PBS 4	1173±29	-24.9	cal AD 770–970	*cal AD 765–900*
SUERC-75837	Charred cereal grain, *Triticum* sp., context 1329, PBS 5	1273±26	-25.0	cal AD 665–780	*cal AD 670–775*
SUERC-75838	Charred cereal grain, *Avena* sp., context 1391, PBS 7	1174±29	-24.7	cal AD 770–970	*cal AD 765–895*
SUERC-75839	Charred cereal grain, *Avena* sp., context 1106, SFB 1	1218±29	-25.8	cal AD 690–890	*cal AD 695–880*
SUERC-75840	Charred cereal grain, *Hordeum* sp., context 1396, SFB 3	1146±29	-20.5	cal AD 770–980	*cal AD 770–910 (93%)* *cal AD 920–940 (2%)*
SUERC-75844	Charred nutshell, *Corylus avellana*, context 1235, PBS 3	1358±29	-25.2	cal AD 640–690	*cal AD 640–715 (60%)* *cal AD 740–770 (35%)*

Table 12: Radiocarbon dates from Felton.

Parameter	Posterior Density Estimate (68% probability)	Posterior Density Estimate (95% probability)
End_Phase_2	*cal AD 790–985*	*780–985 cal AD*
Start_Phase_2	*cal AD 620–685 (52%)* *cal AD 725–760 (16%)*	*cal AD 580–765*

Table 13: *Posterior density estimates* for the start and end of the early-medieval period (Phase 2) at Felton (see Figure 2).

Probability *t*1 < *t*2						
t_1	***t*2**					
	SUERC-75834 (PBS 1)	***SUERC-75837 (PBS 5)***	***SUERC-75838 (PBS 7)***	***SUERC-75835 (PBS 4)***	***SUERC-75836 (PBS 4)***	***SUERC-75844 (PBS 3)***
SUERC-75834 (PBS 1)		49%	95%	90%	95%	27%
SUERC-75837 (PBS 5)	51%		97%	92%	97%	28%
SUERC-75838 (PBS 7)	5%	3%		42%	50%	1%
SUERC-75835 (PBS 4)	10%	8%	58%		58%	4%
SUERC-75836 (PBS 4)	5%	3%	50%	42%		1%
SUERC-75844 (PBS 3)	73%	72%	99%	96%	99%	

Table 14: Probability matrix for the ordering of post-built structures (PBSs) at Felton. Determined by analysis of the modelled radiocarbon dates from the PBSs. The percentage figure describes the probability that t_1 is younger than t_2.

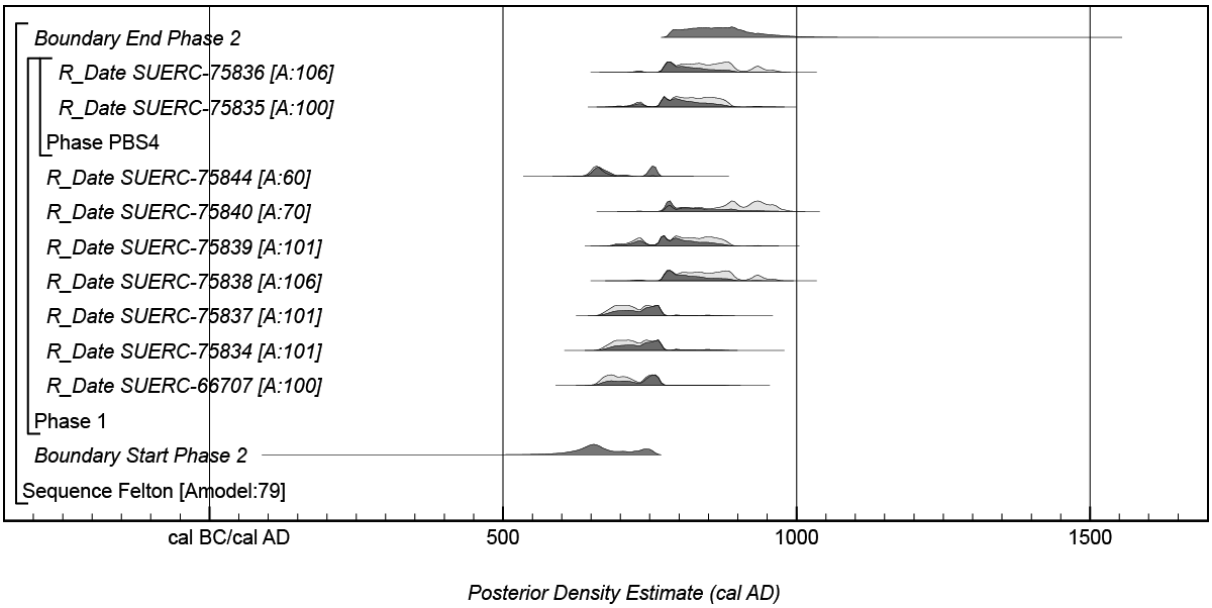

Figure 27: Probability distributions of dates from the Felton site. Each distribution represents the relative probability that an event occurs at a particular time. Two distributions have plotted for each radiocarbon calibration: the pale grey outline is the result of the simple radiocarbon calibration, and the dark grey is based on the chronological model. Other terms and distributions in the image correspond to other aspects of the model, for example, '*Boundary Start Phase 2*' is the estimate for when the Phase 2 of the site began.

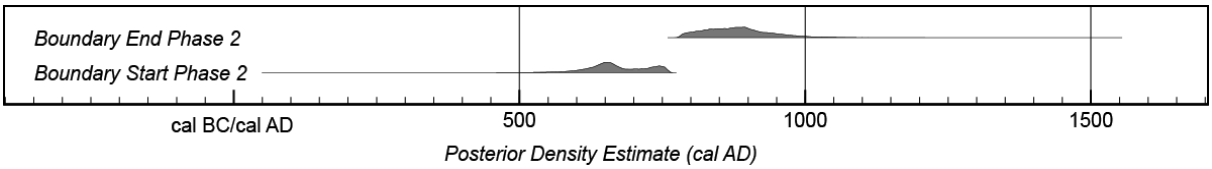

Figure 28: Start and end boundaries for the early-medieval activity (Phase 2) at Felton. The probabilities are derived from the model shown in Fig 27.

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RADIOCARBON DATING CERTIFICATE

20 April 2016

Laboratory Code	SUERC-66707 (GU40406)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland
Context Reference	903
Sample Reference	1
Material	Charcoal : Corylus avellana
$\delta^{13}C$ relative to VPDB	-26.6 ‰
Radiocarbon Age BP	1295 ± 30

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

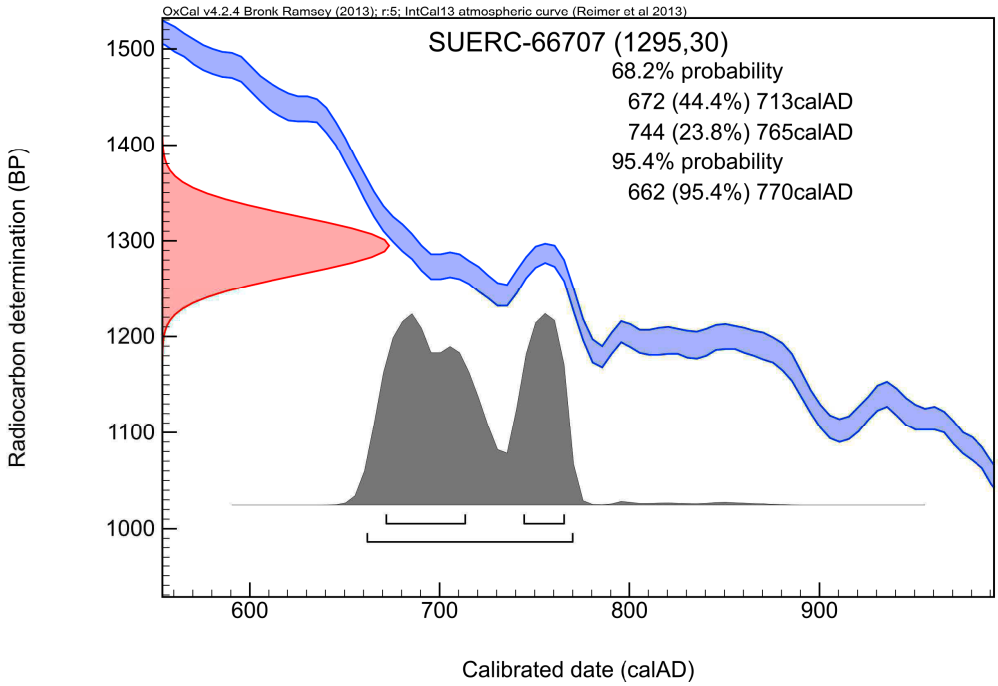
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- E Dunbar Date :- 20/04/2016

Checked and signed off by :- Date :- 20/04/2016

Calibration Plot



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RADIOCARBON DATING CERTIFICATE
13 November 2017

Laboratory Code	SUERC-75834 (GU45398)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland (FLT16)
Context Reference	1139
Sample Reference	6
Material	Charred nutshell : Corylus avellana
$\delta^{13}C$ relative to VPDB	-25.7 ‰
Radiocarbon Age BP	1270 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

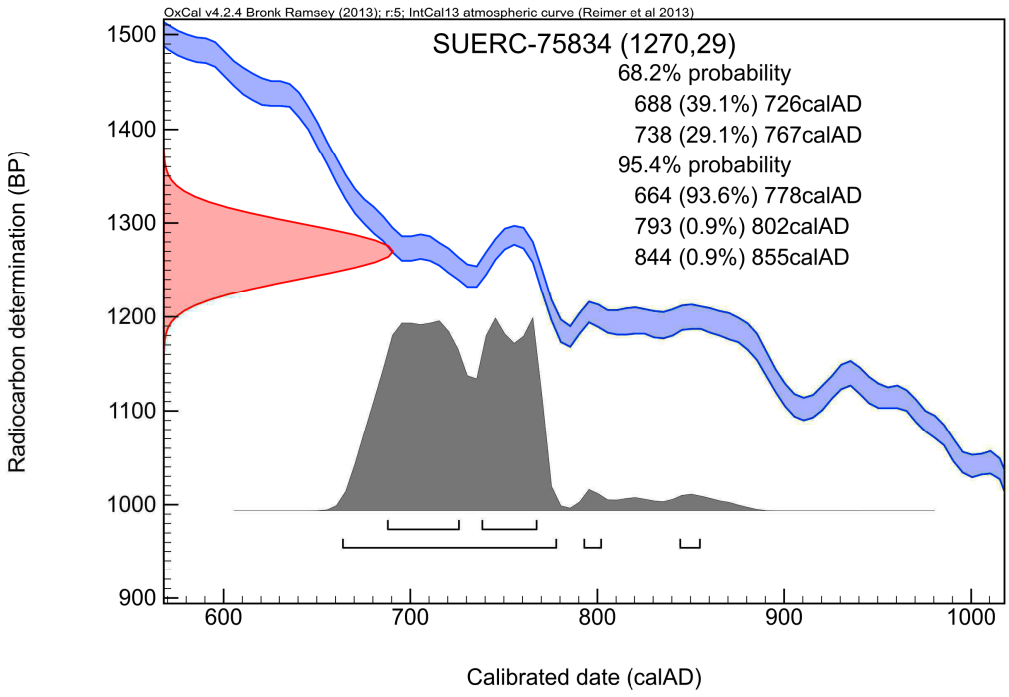
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
13 November 2017

Laboratory Code	SUERC-75835 (GU45399)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland (FLT16)
Context Reference	1291
Sample Reference	14
Material	Charcoal : Corylus avellana
$\delta^{13}C$ relative to VPDB	-26.9 ‰
Radiocarbon Age BP	1208 ± 26

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

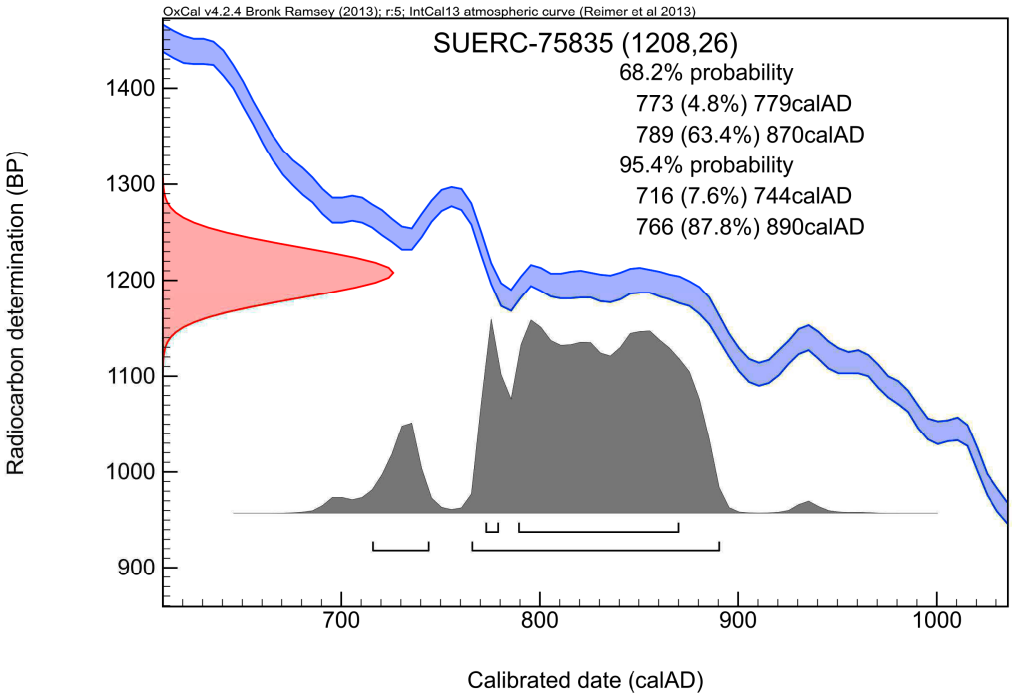
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Nayont



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
13 November 2017

Laboratory Code	SUERC-75836 (GU45400)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland (FLT16)
Context Reference	1321
Sample Reference	17
Material	Charred nutshell : Corylus avellana
$\delta^{13}C$ relative to VPDB	-24.9 ‰
Radiocarbon Age BP	1173 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

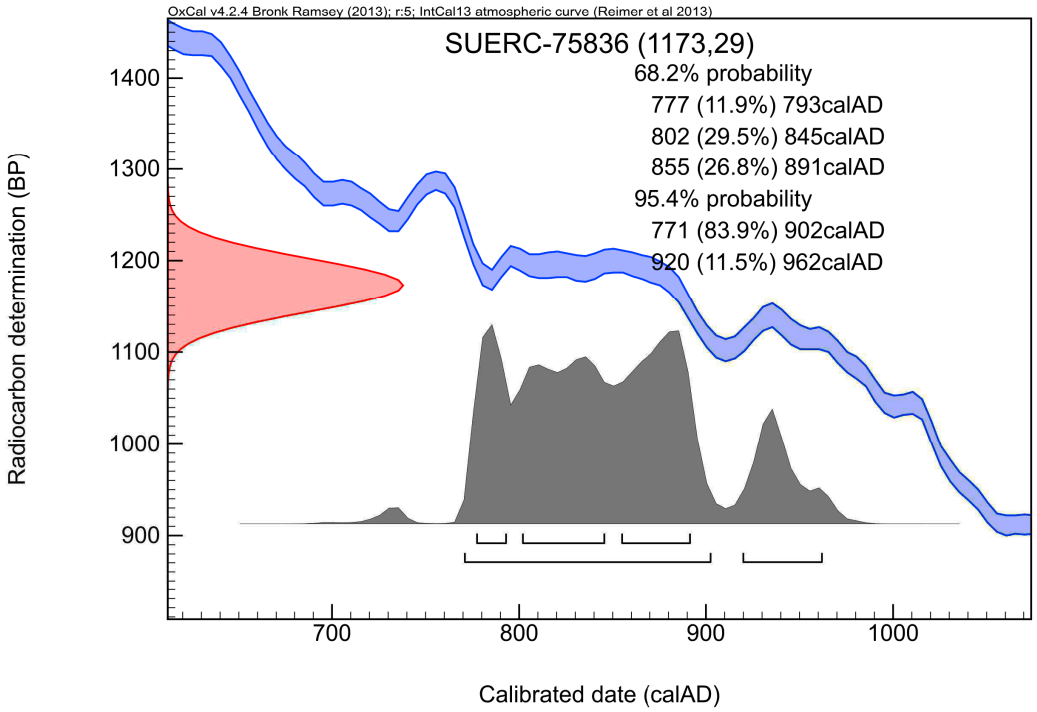
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
13 November 2017

Laboratory Code	SUERC-75837 (GU45401)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland (FLT16)
Context Reference	1329
Sample Reference	19
Material	Charred cereal grain : Triticum sp
$\delta^{13}C$ relative to VPDB	-25.0 ‰ assumed
Radiocarbon Age BP	1273 ± 26

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

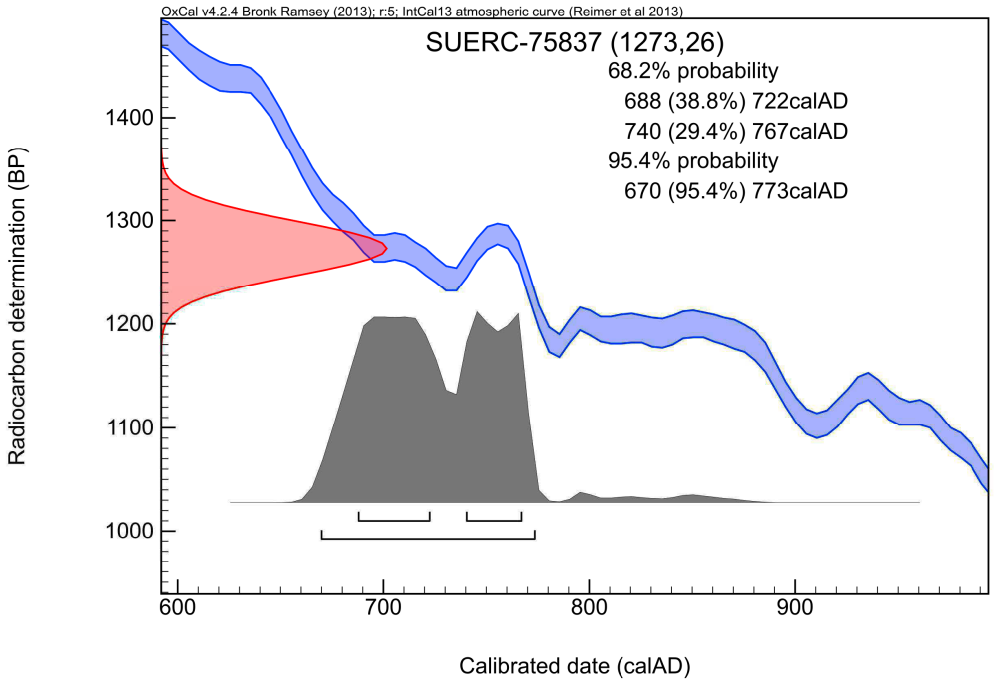
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Nayont



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
13 November 2017

Laboratory Code	SUERC-75838 (GU45402)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland (FLT16)
Context Reference	1391
Sample Reference	22
Material	Charred cereal grain : Avena sp
$\delta^{13}C$ relative to VPDB	-24.7 ‰
Radiocarbon Age BP	1174 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

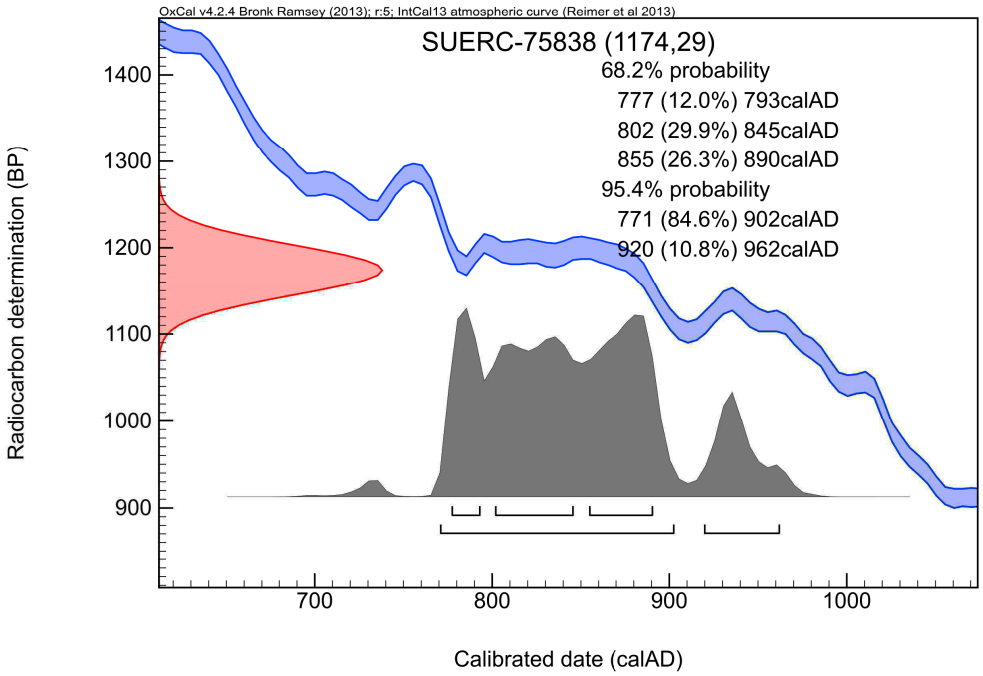
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
13 November 2017

Laboratory Code	SUERC-75839 (GU45403)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland (FLT16)
Context Reference	1106
Sample Reference	5
Material	Charred cereal grain : Avena sp
$\delta^{13}C$ relative to VPDB	-25.8 ‰
Radiocarbon Age BP	1218 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

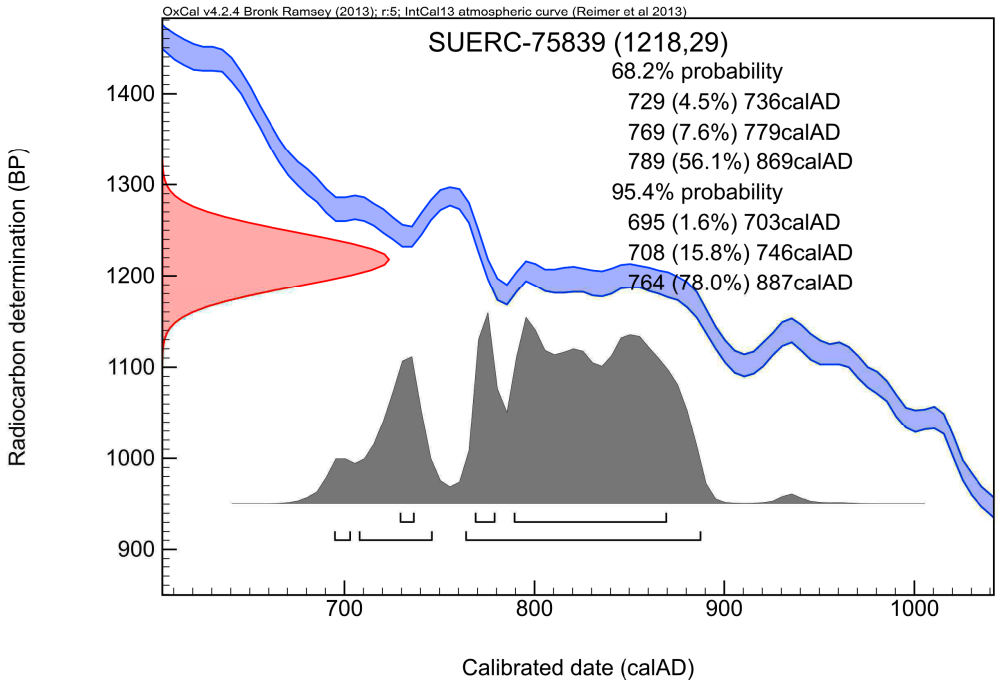
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
13 November 2017

Laboratory Code	SUERC-75840 (GU45404)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland (FLT16)
Context Reference	1396
Sample Reference	24
Material	Charred cereal grain : Hordeum sp
$\delta^{13}C$ relative to VPDB	-20.5 ‰
Radiocarbon Age BP	1146 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

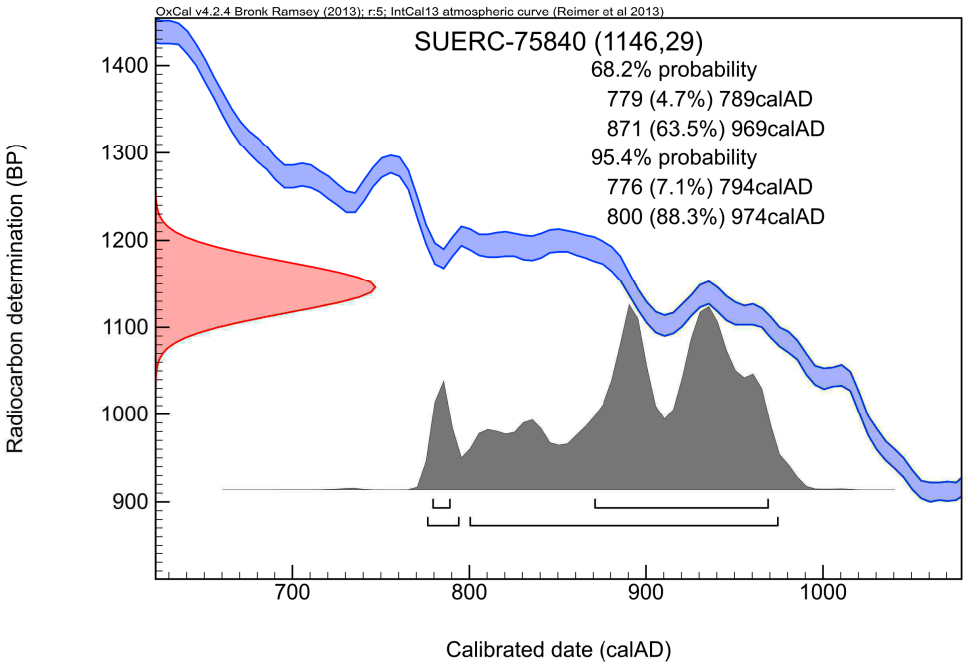
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
13 November 2017

Laboratory Code	SUERC-75844 (GU45405)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Felton Northumberland (FLT16)
Context Reference	1235
Sample Reference	11
Material	Charcoal : Corylus avellana
$\delta^{13}C$ relative to VPDB	-25.2 ‰
Radiocarbon Age BP	1358 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

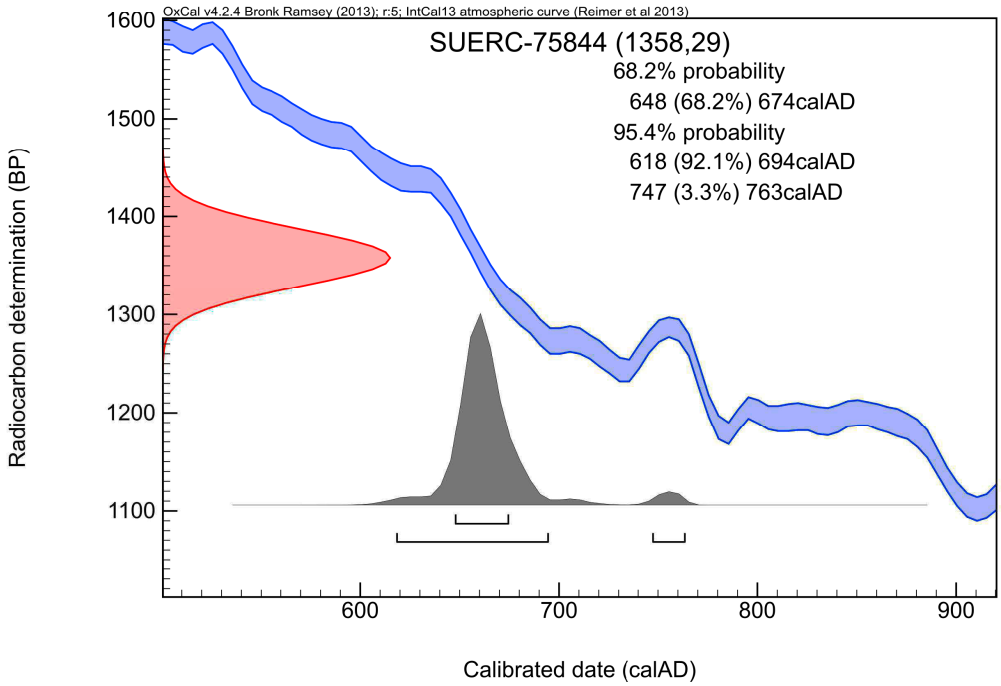
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

11. DISCUSSION

11.1 PHASING AND RADIOCARBON DATING (figs. 25, 27, 28, tables 12-14)

11.1.1 Nine samples from the Felton strip and record site were submitted for radiocarbon dating using Accelerator Mass Spectrometry (AMS) by the Scottish Universities Environmental Research Centre (SUERC). The detailed individual results produced by the facility are included in chapter 10. The aim of the radiocarbon programme was to establish a basic chronology for the structures on the site. In the absence of closely datable artefacts from the site this programme provided the only possible means of dating the period of occupation at the settlement. The samples were generally small and were dated using AMS, the scarcity of suitable material and absence of bone meant that charred seeds and in one case charcoal was used which invariably increases the potential of contamination of samples resulting from residual material or post-depositional disturbance. The buildings were dated from material recovered from the postholes that is likely to have originated from the use of the structure rather than construction of the structure itself.

11.1.2 The paucity of the finds assemblage and general absence of stratigraphic relationships means that radiocarbon dates are clearly crucial to providing a broad chronological sequence and the phasing of the site. A Bayesian approach to the radiocarbon measurements was adopted for the interpretation of the chronology of the settlement. The Bayesian analysis (the full analysis is included in chapter 10 of this report) produces shorter ranges of probability for each date (*posterior density estimates*) and furthermore using this approach it is possible to estimate 'events' such as the beginning or end of a settlement. By convention, these probability distributions are presented in italics when expressed as date ranges in the text.

11.1.3 Although in some cases it was possible to estimate a limited sequence for the date of occupation of some structures from the Anglo-Saxon settlement (fig. 25), there were not enough dates to confidently assign structures and features to a more concise phasing over the duration of the settlement. Phase 2 therefore spans the entire duration of the Anglo-Saxon settlement.

11.1.4 Phase 1 Prehistoric period

Phase 1 relates to prehistoric activity on the site with a solitary pit in the northeast corner of the site representing the only securely identifiable feature. The pit was dated from Impressed Ware pottery vessels of the Fengate Ware sub-style deposited in the pit that suggests a likely Middle-Late Neolithic date (refer chapter 7). Two flint debitage flakes were recovered from posthole 1530 (fill 1531) from PBS 10 of the phase 2 Anglo-Saxon settlement amongst a dense cluster of postholes (PBS9 & 10) in Area 3. Although likely to be residual it remains possible that some of the postholes in this locality or indeed elsewhere on the site are prehistoric in origin.

11.1.5 Phase 2 Anglo-Saxon Settlement

11.1.5.1 Bayesian modelling of the radiocarbon dating evidence (refer chapter 10) estimates that the settlement began *cal AD 580–765 (95% probability) (cal AD 620–685 (52%) cal AD 725–760 (16%))* during the end of the early/ middle Anglo-Saxon period. It is of course quite possible that an earlier Anglo-Saxon settlement consisting primarily of a small number of structures may lie nearby, beyond the edge of excavation, or indeed may be represented by one of the undated buildings excavated on the site. It is estimated that the settlement ended by *cal AD 780–980 (95% probability)*, having been in existence a relatively short period of between *25–270 years (95% probability).*

11.1.5.2 Bayesian analysis estimates PBSs 1 and 5 are likely to have been constructed contemporaneously and are younger than PBS 7 and PBS 4 (*92–97% probability*; Chapter 10, Table 14) with PBS 3 being the youngest (*72–99% probability*; Table 14) of all the dated PBSs on the site. It is likely that PBS 4 and gully 1839 a short distance to the NE were contemporary.

PBS 1 cal AD 660–780 (SUERC 75834) (*cal AD 665–775 95% probability*)
PBS 5 cal AD 665-780 (SUERC 75837) (cal AD 670–775 *95% probability*)
PBS 7 cal AD 770-970 (SUERC 75838) (*cal AD 765–895 95% probability*)
PBS 4 cal AD 715-890 (SUERC 75835) (*cal AD 715–745* (*8%*) *cal AD 765–885* (*87%*))
Gully 1839 cal AD 770-970 (SUERC 75836) (*cal AD 765–900 95% probability)*
PBS 3 cal AD 640-690 (SUERC 75844) (*cal AD 640–715* (*60%*) *cal AD 740–770* (*35%*))
Pit 904 cal AD 650-780 (SUERC 66707) (*cal AD 665–775 95% probability*)

11.1.5.3 Two dates were obtained from sunken-featured buildings, one from SFB 1 (SUERC-75839) and one from SFB 3 (SUERC-75840) which suggests that usage of the pits within the two SFBs occurred around the same time.

SFB1 cal AD 690-890 (SUERC 75839) (cal AD 695–880 *95% probability*)
SFB 3 cal AD 770-980 (SUERC 75840) (*cal AD 770–910* (*93%*) *cal AD 920–940* (*2%*))

11.1.6 Phase 3 Medieval Period

The absence of medieval pottery from the archaeological features on the site is a clear indication that occupation on the site did not continue into the medieval period. The former settlement formed part of an open field system associated with the village of Felton with the site of the settlement presumably long forgotten.

11.1.7 Phases 4-5 Post-Medieval and Modern Periods

The site remained agricultural fields throughout this period, during the later Post-Medieval period the open field was partially enclosed with a field boundary running across the northern edge of the site.

11.2 THE STRUCTURES (figs. 2, 25)

11.2.1 POST-BUILT STRUCTURES

11.2.1.1 A large number of postholes were identified from the Anglo-Saxon settlement within distinct clusters and alignments across the site, some of which are likely to represent houses, often referred to as 'halls' a term perhaps best restricted to large high status buildings (Hamerow 2012, p17). These rectangular earthfast timber structures form part of a recognisable tradition at settlements throughout England during the Anglo-Saxon period. Widespread severe truncation was caused by the later medieval ridge and furrow system which occurred at intervals of 6.9m along a similar ENE-WSW orientation to the structures at a depth of up to 0.35m, that could entirely truncate a longitudinal side of a building.

11.2.1.2 In the absence of complete ground plans all apparent groupings of postholes have been initially defined as post-built structures (PBS). The classification PBS has been applied to both linear and rectangular arrangements of postholes as well as other discernible patterns encompassing a variety of possible structures which also includes potential fence lines. From a total of 26 PBS identified at the site, an estimated nine (PBS 1, 2, 3, 4, 5, 6, 8, 14, 16) were thought most likely to represent the remains of heavily truncated rectangular houses with only one long side wall surviving as a row of postholes(figs. 2, 25). It is possible that PBS 4 and 6 may together represent the remains of a large building bisected by a later furrow.

11.2.1.3 The footprint of the surviving postholes from these structures varied considerably in size from a minimum of 5.5m - 6m up to a potential length of 15m (refer Table 15), although there is uncertainty as to how representative the surviving posthole rows are to their original wall lengths. If the postholes that formed PBS 4 and 6 together represent the remains of the longitudinal walls of a house, this would represent the largest building identified at the site measuring 15m by up to 5.5m wide. One of the more confidently defined ground plans of the smaller of these houses (PBS1) measured 6m in length though generally small in comparison to many buildings excavated elsewhere it lies within the broad range of mid-Anglo-Saxon period buildings (Marshall & Marshall 1993, 374-9), with smaller buildings less than 6m in length becoming more common in the seventh century (Hamerow2012b, p131). In comparison to local sites, at Shotton (Muncaster, Mckelvey, Bidwell 2014) in south Northumberland, the middle-Anglo-Saxon houses (bld A, E, F) ranged from 8.6m by 4.7m to 11.3m by 4.5m. The excavated sites in North Northumberland were generally a lot earlier in date to Felton. At Thirlings (O'Brien and Miket 1991) in North Northumberland, most of the post-built structures (blds H, G, I, F, E, R) excavated were comparable in length to the largest buildings at Felton (the post in trench constructed buildings at Thirlings were considerably larger). At Cheviot Quarry (Johnson and Waddington 2009) which was considerably earlier in date the buildings were comparable in size with buildings 2 and 3 measuring 9m by 4.47m

and 8.80m by 4m respectively, with building 1 being the smallest at 6.75m by 3.50m. The buildings at Lanton Quarry (Stafford 2007) were also relatively small, PBB1 measuring 6m by 3.8m with one unusually wide building (PBB 2) being 7.80m by 5m.

Table 15 Potential rectangular post-built buildings/ houses? at Felton
(Dimensions taken from centre of postholes)

Building	Area	Length	Width	Comment
1	4	6m	3m?	S wall, gables and partial N wall. Successive building superimposed?
2	3	5.5m	3.5m?	One surviving wall N/S? Successive building superimposed?
3	2	6.5m-7.7m?	?	S wall?, partial E gable? Successive building superimposed
4	5	10m	?	S wall?
5	1	8.5m	4m?	S wall, E gable and partial N wall? May be a successive building superimposed
6	5	9m	?	N wall? may be assoc. with PBS4 to form larger hall (see below)
8	3	>4m (truncated)	>2.8m	S wall, E gable
14	4	6.5m?	?	S wall?
16	9	5.5m?	?	S wall, E gable, partial W cable?
4&6	5	15m	4.8/5.5m	Combined PBS 4 & 6 to make opposing sides of one large hall

11.2.1.4 At Felton the level of truncation of the buildings and the uncertainty of their layouts means that little can be discussed concerning the construction techniques they utilised. The fills of the postholes were generally homogenous and did not contain evidence of post pipes or timber impressions. The buildings were almost all constructed from earthfast posts set within postholes with very little evidence for the use of post in trench, a technique which by the eighth century had become more prevalent than postholes (Hamerow 2012, 27).Although there was rare examples of possible post-in-trench technique there were a number of examples of several interconnecting or intercutting postholes some of which were probably contemporary forming part of the side wall (refer11.2.5). There was one deep irregular sided cut that may represent a wall trench length (PBS7) which appeared to be related to postholes elsewhere along the buildings putative footprint. There was also a shallow possible wall trench along the north side of PBS 5 that again appeared to be combined with postholes elsewhere. Another potential example was a heavily truncated linear trench at PBS18.

11.2.1.5 Few of the buildings walls were represented purely by a single line of postholes. Many of the buildings had several postholes along their wall lines that either represents double or intercutting postholes. The majority of these postholes contained similar fills making it uncertain whether the features represented timber replacement/ repair or contemporary double postholes. At Catholme there were numerous intersecting postholes on the same wall-line that probably reflected frequent repair work (Losco-Bradley and Kinsley 2002, 86). There was evidence that several of the houses (PBS1, 5, 4/6) had two successive buildings on a similar

footprint.

11.2.1.6 In common with halls excavated elsewhere in England, no traces of floor surfaces or hearths survived, perhaps not surprising considering the relatively high degree of truncation across the site.

OTHER POST-BUILT STRUCTURES

11.2.1.7 A number of PBS were less readily identifiable and coherent in plan (see table 16 below) than those PBS identified as potential houses these other structures have been tentatively identified with varying degrees of confidence sometimes from larger clusters of postholes (figs. 2, 25). They varied widely in form and most were fragmentarily preserved. However in comparison they differed in both scale and construction to PBS identified as potential houses. The overall super-structure of a building does not necessarily correspond with the dimensions and layout of the associated surviving postholes, therefore even a small cluster of postholes may have helped support a building with a larger or different shaped footprint that in the absence of floor surfaces will never be known. Whilst little can be established with certainty about these structures and their specific individual form, they are likely to have served a range of domestic, agricultural and craft functions.

11.2.1.8 This category also includes posthole rows that are most likely to represent fence lines which are stated when applicable in the comments column within Table 16.

Table 16 Other post-built structures (PBS)

Building	Area	Length	Width	Comment
7	2	3.2m	3.36m	W gable, and partial S wall? N wall (trench)
10	3	4.1m	3.4m	One surviving wall N/S?
11	3	3.5m?	?	N wall? may represent fence or rectangular bld
12	3	2.8m	1m apart	Two rows of postholes
13	3	3.2m (min)	1.8m?	S wall, E gable
15	9	10.5m	?	N wall, and partial S wall may include W end PBS4
17	9	>4m	>2.8m	S wall, E gable
18	8	6.5m?	2.6m	Form unclear, may represent structure including E-W wall slot or alternatively a fence line and gully
19	5	2.5m	1.8m	Fence or N wall, W cable? Aligned with PBS20
20	5	2m	-	Fence? or structure alongside gully1839
21	5	0.5m	0.5m	Form unclear
22	6	0.6m	0.6m	Form unclear
23	3	>3.37m	-	Fence?
24	2	>2.4m	-	Fence?
25	2	2.5m	1.4m	Form unclear
26	11	1.8m	?	Form unclear
27	6	0.7m	0.8m	Form unclear

28	6	2.9m	2.8m	Form unclear
29	10	4.35m	1.75m	Form unclear

11.2.2 Sunken Featured Buildings (SFB) (plates 8, 16 & 18)

11.2.2.1 Three large pits likely to represent Sunken Feature Buildings (SFB 1-3) or Grubenhaus were identified on the site. These pits although slightly unusual in form fall within the broad parameters of an SFB outlined by Tipper in an extensive overview of excavated examples (Tipper 2004). There has been much debate over the nature, form and purpose of these structures. The majority of excavated SFBs were sub-rectangular in shape with a smaller proportion being oval. Their bases were normally flattish defined by generally steep sides, although some had more moderately sloped sides which would have severely restricted the surface area of the base. The exact form or forms of SFBs is uncertain but most interpretations suggest a building with two gable posts supporting a ridge post on which light rafters would have rested. SFBs frequently had two postholes, one at either end of their long axis. The majority of postholes were located just inside the pit at the junction of the side and base (Tipper 2004, 192) although a small number lay outside the pit. In some cases there was no evidence for postholes or only one gable posthole and at West Heslerton over half of SFBs contained no evidence for postholes (Tipper 2004, 72).

11.2.2.2 At Felton, the SFB's generally had steep sides with one side considerably shallower in slope, invariably at one of the short sides and not the long axis. SFB's 1 was oval-shaped and generally steep sided except for the north side which had a gradual slope that restricted the surface area of its base, further reduced by a circular pit at the base of the western portion. An SFB (SFB *P*) excavated at Shotton (Muncaster et al 2014) was similar to SFB 1 at Felton; it too had a secondary pit cut into its base and they were strikingly similar in shape and profile. SFB 2 was ovoid-shaped with steeply sloping sides except for the north side which had a gradual slope. SFB 3 was oval-shaped with steeply sloping sides except for the eastern side which had a gradual slope.

11.2.2.3 At Felton SFB 1 measured 4.02m by 2.22m by 1.08m in depth; SFB 2 measured 3.14m by 2.11m and 0.94m in depth and SFB 3 measured 3.67m by 3.18m and 0.64m in depth. In general SFBs vary widely in size at West Stow they averaged 4.14m by 3.26m, at Mucking 4.00m by 3.23m (Lucy et al 2009). At West Heslerton they varied from 1.65m - 6.59m in length by 1.01m - 5.40m in width (Tipper 2004). At Shotton: SFB O measured 2.23m by 2.02m by 0.62m deep; SFB P 4.24m by 2.7m by 0.60m deep. The New Bewick SFB was 4.7m long by 3.9m wide and 0.5m deep (Gates and O'Brien 1988). At Lanton Quarry the SFBs varied in size between 5.5m by 4.0m by 0.38m deep to 3.5m by 2.5m by 0.42m deep. The SFBs at New Bewick and Lanton Quarry were both of the more typical rectangular shaped plan.

11.2.2.4 No archaeological evidence survived from the structure that is proposed to have been raised above the suspended floor of the SFBs at Felton. Excavations elsewhere have also produced little evidence suggesting that the superstructure of

these buildings significantly penetrated the subsoil and therefore the widespread truncation caused by agriculture that has occurred throughout the site is likely to have obliterated any potential surviving evidence.

11.3 INDUSTRIAL ACTIVITY

11.3.1 The following section provides in part a brief summary of the results detailed within the assessment of metalworking report which are included in full elsewhere within the report (chapter 9).

11.3.2 The material examined from Felton included 1525g of ironworking slag and related materials. The majority of metalworking evidence came from two tight formations of postholes (PBS22 & 27; refer 5.2.9, Plate 15) which may have supported a single or two separate structures or frameworks likely to be associated with metalworking. These features were located on the periphery of the settlement occupation at the site, perhaps reflecting zoning of industrial processes. Metalworking residues provided positive (if limited) evidence for the primary production (smelting) of iron and the secondary production (smithing) of finished artefacts. A smithing slag cake recovered from posthole 1004 of PBS 27 [fill 1003, SF 3] was associated with iron smithing. Slag and vitrified ceramic was recovered from posthole 1012 (fill 1011, SF 4) and posthole 1008 (fill 1007, SF 5) of PBS22. A piece of fired ceramic recovered from posthole 1012 may have belonged to a metallurgical installation associated with this process. Environmental samples from posthole 1012 provided further evidence of metalworking in the form of hammer scale (fill 1011). Hammerscale is diagnostic of the smithing of iron, and is often found in the immediate vicinity of the smithing hearth and anvil (Starley 1995). The predominance of oak charcoal within this deposit is also characteristic of industrial residues as it produces the required high temperatures.

11.3.3 A dense iron silicate slag recovered from the fill of a pit (fill 1219, cut 1220, SF 8) at the northern end of the site provides evidence of smelting. The pit lies beside PBS 3, which lies 42m north of the main foci of the metalworking evidence recovered (refer 7.3.2). The only other fragment of non-diagnostic slag was recovered from a short linear feature / gully in the western portion of the settlement, which lay nearby a series of pits with a presumed craft/ industrial function (refer 5.2.11) suggesting that specialised activities were undertaken in this locality.

11.3.4 Pits excavated in to the underlying subsoil are found on many archaeological sites frequently associated with craft/ light industrial processes often involving liquids, such as tanning or the preparation of textiles. At Felton a number of pits were identified, a group of which were positioned towards the periphery of the site to the southwest (Area 8). One of the pits (1489) was furnished with a run-off channel, truncated by a later furrow. An environmental sample (chapter 6) from its fill was uninformative, containing charred weed seeds and seaweed. Another feature of note was a linear cut (1839, area 5) that was more similar to an elongated

pit rather than a gully, measuring only 4m in length with distinct terminals at either end. A shallow heavily truncated channel ran into the southwest corner of the feature and on its northern side it was flanked by 3 postholes (PBS 20) which may represent a structure associated with the pit and whatever process was undertaken at it. Once again an environmental sample of its fill proved uninformative as to its usage. Analysis of a radiocarbon determination (chapter 10) from the feature (1839) suggested it may have been contemporary with PBS 4.

11.4 ENVIRONMENTAL EVIDENCE

11.4.1 The following section provides a brief summary of the results detailed within the plant macrofossil assessment report which are included in full elsewhere within the report (chapter 6).

11.4.2 Even though the charred macrofossil assemblage was in general relatively poor the rarity of Anglo Saxon sites such as Felton ensures that it still provides a valuable albeit tentative insight into the diet, crop husbandry practices and paleoenvironment of rural settlements in Northumberland during this period.

11.4.3 An assessment of 17 bulk samples, indicated that oats were the most common cereals present, followed by barley. A possible bread wheat grain was also identified. Other than cereals, few plants likely to have been used for food or other domestic purposes were recorded at Felton. Fragments of charred hazel nutshell occurred in low numbers of the samples analysed, with the highest predominance occurring in the prehistoric pit (1385) which is typical of prehistoric deposits (chapter 6: 5.4).

11.4.4 Pit (1385), which was dated from the Mid-Late Neolithic period, can be characterised as a ‘Midden pit’ a well-known category of feature frequently found at Neolithic sites (refer 7.5.2). The fill consisted of domestic ‘midden’ material including charred hazelnut shells, small fragments of flint, fragmented pottery vessels and an abundance of charcoal from hazel and oak.

11.4.5 Even though Felton lies 9km distance from the sea, charred fragments of brown seaweed (phaeophyceae) were recovered from ten contexts, with the highest number found in postholes from buildings 1 and 2. Seaweed was also recovered from Brougham, in Cumbria (chapter 6) which lay 50km away from the coast, and was also identified at the settlement at Shotton (Muncaster 2014 etal.). Seaweed could be used for a variety of purposes including fodder, manure, ‘packing’ or food preservation.

11.4.6 Evidence of metalworking in the form of hammer scale was present in a posthole (PBS 22, deposit 1011). The predominance of oak charcoal within this deposit is characteristic of industrial residues as it produces the required high temperatures.

11.4.7 Bone did not survive in the soils filling the features at Felton. The former presence of animal bones is attested by the small fragments of tooth enamel recovered from 24% of the samples that were assessed.

11.4.8 Pollen evidence suggests continued clearances throughout northern England during the Anglo-Saxon period, although the accompanying macrofossil data is rare (chapter 6). Evidence at Butterburn Flow, c.10km north of Hadrian's Wall, (chapter 6). noted a significant increase in ribwort plantain (*plantago Llanceolata*) and sheep's sorrel (rumex acetosella) c. 650 cal. to AD 700 cal. which indicates an intensification of agriculture at this time.

11.5 THE SITE IN ITS CONTEXT

11.5.1 A greater understanding of the Neolithic period in Northumberland has been gained through extensive investigations of Neolithic archaeological sites in the Milfield Basin in North Northumberland including large-area excavations in advance of gravel quarrying at Cheviot Quarry and Lanton Quarry (Passmore and Waddington 2009; 2012). Settlement sites from the Neolithic period have often only come to light during the archaeological investigation of later settlements such as at Thirlings, and the chance discovery at Felton of a pit containing Fengate Ware pottery follows this pattern.

11.5.2 Settlement evidence in the Neolithic period in Northumberland is characterised primarily by the presence of midden pits and hearths with some evidence also of (poorly defined) post-built structures at sites (Waddington 2011, p280) including Thirlings (Miket et al. 2008), Cheviot Quarry North, Cheviot Quarry South (Johnson & Waddington 2008), Lanton Quarry (Waddington 2009) and Bolam lake (Waddington & Davies 2002). Neolithic midden pits have been found in close association with structures at Lanton Quarry or in small clusters as at Cheviot Quarry and Thirlings. The pit at Felton contained a fill typical of 'midden' pits which contain a wide range of domestic material that can include varying quantities of pottery, usually broken before deposition, together with flint tools and waste, within a charred soil matrix that typically contains charred wood, charred hazelnut shells, and cereal grains (Waddington 2011, 295). At Felton it seems likely that the pit is associated with occupation on the site, however fleeting or sporadic is unknown. Although no other archaeological evidence from this period could be identified with certainty, it is possible that some of the in the vicinity which are believed to be associated with PBS 5 (which does appears to have more than one phase) belong to a Neolithic Period structure (fig. 3). In addition, two flakes of flint debitage were discovered in a posthole (1530) from PBS 10 which even if residual demonstrates further activity on the site.

11.5.3 Settlement evidence during the Neolithic period in Northumberland, in the form of structural remains, pits, lithic, and stone axe head distributions, reveals a focus for occupation on the sand and gravel terraces of valley floors and in close proximity to river courses, with some coastal and upland settlement also evident

11.5.3 Settlement evidence during the Neolithic period in Northumberland, in the form of structural remains, pits, lithic, and stone axe head distributions, reveals a focus for occupation on the sand and gravel terraces of valley floors and in close proximity to river courses, with some coastal and upland settlement also evident (ibid, 295). The Felton site while not on the valley floor lies only a short distance on level land 640m to the north of the River Coquet, which in this area lies within a narrow valley less suited for occupation. A number of Neolithic axe heads discovered in the parish of Felton attest to occupation in the area during this period.

11.5.4 After the Neolithic period there is no evidence of activity during the long intervening Prehistoric and Roman periods. Excavations have shown that in the late prehistoric period Northumberland was densely settled with evidence of a highly organised society during the Iron Age period up to AD200. There is evidence of a wider decline of traditional Iron Age society during the second century apparent across a wide area as far north as the East Lothian coastal plain with far fewer sites occupied after AD 200 (Hodgson et al. 2012). With the exception of military sites in Northumberland there is a paucity of settlement from the known archaeological record throughout much of the Roman and post-Roman period.

11.5.5 There are a wide range of views on the date and character of Anglo-Saxon settlement in north-east England, traditionally the date for its inception is given as AD 547 when Ida, from whom the Northumbrian royal house traced its origins, began his reign (Bede, HE, v, 24). Certainly by the mid-sixth century there are burials with Anglo-Saxon characteristics from Catterick to Milfield (Cramp 1983, 266). Anglo-Saxon brooches and pottery from the eastern end of the Wall are of sixth- and early seventh-century date. Analysis of the Felton radiocarbon determinations estimates settlement began cal *AD 580–765 (95% probability)* and seems most likely sometime in the seventh-eighth century. Of course it is quite possible that an earlier Anglo-Saxon settlement may lie nearby, beyond the edge of excavation such as the small early Anglo-Saxon settlement at Shotton which preceded a mid-Anglo-Saxon enclosed settlement. At Shotton this earlier phase consisted of three widely spaced post-built houses a short distance from the later settlement that did not leave a large archaeological trace and only came to light due to the wide scale soil strip undertaken at the opencast mine site. Prior to this archaeological excavation there was no evidence of Anglo-Saxon occupation at Felton though the name itself is Old English in origin with the elements of *feld* and *tun* meaning 'Open land farm/settlement' (KEPN 2017). It has been suggested that a church may have stood before the conquest, based on its location at a potential crossing of the River Coquet midway between Warkworth and Rothbury which are believed to have had churches from an early date (Hodgson 1904, 268). In contrast it has also been suggested that with its burgage plots, Felton represents a new plantation sometime around 1200 (HER4347). Of course a planned medieval settlement could have supplanted a pre-existing one.

11.6 LOCAL PARALLELS TO THE ANGLO-SAXON SETTLEMENT

11.6.1 There are few excavated examples of Anglo-Saxon period settlement in the region, with the nearest lying 24km to the south at Shotton in South Northumberland (refer 7.5.4) with which it was probably contemporary for some of its lifespan. Most excavated sites excluding the monastic sites of Wearmouth, Jarrow (Cramp, Bettess and Bettess 2006) and Hartlepool (Daniels 1988) are concentrated in the Milfield basin, c.38km to the north. These sites at Milfield although generally earlier than the Felton site extend across the settlement hierarchy with the high status royal vill of Yeavering (Hope-Taylor 1977) and its successor of Maelmin, the minor estate of Thirlings (O'Brien and Miket 1991), a possible hamlet at Lanton Quarry (Waddington 2009) and early farmsteads at Cheviot Quarry (Johnson and Waddington 2009). Bamburgh, first excavated by Hope-Taylor in the 1960s and 70s, is the subject of ongoing investigations by the Bamburgh Research Project. A trial excavation at New Bewick (Gates and O'Brien 1988) southwest of Bamburgh, investigated one of a group of SFBs visible as cropmarks. A radiocarbon date of cal AD 680-890 from a posthole at the royal vill of Maelmin places it as contemporary with Felton. Up to 40 or more Grubenhauser/SFB's were identified as cropmarks at the site suggesting a sizeable settlement there. Huckhoe (Jobey 1959), 22km southwest of Felton, was on the edge of the upland zone and differed considerably from the sites of the coastal plain. It was notable due to evidence for continuing occupation during the Roman Iron Age and possibly during the fifth and sixth century.

11.6.2 A model of Anglo-Saxon settlement hierarchy (Loveluck 2002, 136) has been suggested based upon archaeological evidence from a number of sites in north Northumberland which although generally earlier in date than the settlement at Felton is still generally applicable. At the top was the fortified site at Bamburgh with a similar site at Dunbar in East Lothian to the north. The best known example of a site of lesser but still considerable status was the villa regia or 'king's estate' of Yeavering; other high status sites visible as cropmarks include Maelmin which was a successor to Yeavering (Loveluck 2002, 140). Thirlings (O'Brien and Miket 1991) may have represented a minor estate centre with substantially larger halls than found at the lowest rung of settlement which was probably formed by small hamlets, poorly represented in the archaeological record by sites such as Lanton Quarry and Cheviot Quarry. The earliest unenclosed settlement at Shotton in south Northumberland is likely to belong to the lower rung of settlements, although the organisation and layout of the later enclosed middle Anglo-Saxon phase at Shotton, if not the halls which remained relatively modest in size, raises the possibility that elements of it (Hall A) were higher status than its predecessor (Muncaster, Mckelvey, Bidwell 2014). At Thirlings some of the halls were twice as large as those at Shotton (O'Brien

and Miket 1991) and were considerably larger than any of the possible halls at Felton. The character and status of the Anglo Saxon settlement at Felton is difficult to establish with certainty due to the high level of truncation of the post-built buildings on the site and a question as to how much of the settlement lies unexposed beyond the site to the north and east. The position of Felton within a putative settlement pattern or hierarchy therefore remains unclear.

SHOTTON

11.6.3 Radiocarbon dating at Shotton suggests that the earliest phase of settlement began during the mid to late sixth century (Muncaster, Mckelvey, Bidwell 2014) and becoming more formalised during the middle-Anglo Saxon period with individual farmsteads defined within separate enclosures probably during the seventh to eighth century, until the abandonment of the settlement at the end of this period. The status of the enclosed settlement at Shotton is uncertain although it is most likely to belong to a lower level in the settlement hierarchy. The dating of the enclosed settlement places it broadly contemporary with the early settlement at Felton which may have continued in occupation after Shotton had been abandoned. The layout of the enclosed phase of Shotton differed considerably from Felton, the most obvious factor being the general absence of ditched enclosures. There was limited evidence of heavily truncated gullys at Felton that were presumably originally more extensive though there is no indication that it was to the same degree as at Shotton. The settlements of Felton and Shotton both lay beyond the periphery of later medieval villages and were later subsumed under ridge and furrow from the medieval open field system.

NORTH NORTHUMBERLAND

11.6.4 Bayesian modelling of radiocarbon dating from Thirlings (O'Brien and Miket 1991) suggests a commencement of occupation in *cal AD 420-570 (68% probability) and ended in cal AD 560-680 (68% probability)* which suggests it largely predates the settlement excavated at Felton. The relatively large size of some halls and their layout suggested a status such as a minor estate-centre. The buildings were in general considerably larger than Felton (Hall C measuring twice the size) in addition many of the halls differed in construction using double plank walling and foundation trenches. The presence of cropmarks of possible SFBs northeast of the halls shows that as with Felton the full extent of the site and its development sequence remains uncertain.

11.6.5 Cheviot Quarry (Johnson and Waddington 2009) consisted of three modest sized structures radiocarbon dated to the late fifth to mid-sixth century possibly predating Thirlings or at least abandoned during its lifetime and predating the settlement excavated at Felton. Excavations at Lanton Quarry (Waddington 2007, 2009, Stafford 2007) revealed four relatively small post-built structures, six SFBs defined behind a fence line that seemed to demarcate northern limit of the site with another outlying SFB recorded further north. The settlement probably extends further east and the absence of a complete plan means that its status remains uncertain as it is possible larger Halls may lie elsewhere such as the relationship of

the SFBs to the halls at Thirlings.

11.7 CONCLUSION

11.7.1 The strip and record excavation at Felton has made a valuable contribution to the study of Anglo-Saxon settlement in the north-east of England, which despite the recent excavation Shotton, 24km to the south, is still under represented in the archaeological record between North Northumberland and North Yorkshire. In addition the discovery of an isolated midden pit containing Impressed Ware vessels of the Fengate Ware pottery sub-type adds to the corpus of still limited number of known archaeological sites of occupation dating from the Mid-Late Neolithic period.

11.7.2 The Anglo-Saxon settlement at Felton which lay on a greenfield site was unknown prior to archaeological investigations related to the new housing development. It lies on the periphery of the modern village and approximately 500m north of the likely medieval core of Felton. Both the location and circumstances of its discovery are similar those of Shotton during investigations associated with a surface mine which lay 300m south of the existing village. The site at Shotton was most likely to have been abandoned before Felton, although both sites had ended by the latter stages of the late Anglo-Saxon Period and ultimately ended up forgotten and lying underneath a medieval ridge and furrow system. It is safe to assume many Anglo-Saxon sites lie undetected in fields on the periphery of other medieval towns and villages throughout England more of which will hopefully come to light through careful archaeological investigation prior to future development which often occur at such locations. A late Anglo-Saxon nucleus may have succeeded the abandoned settlement a short distance to the south nearer the river under the existing village of Felton and its medieval predecessor.

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APPENDIX 1: LIST OF SMALL FINDS

Small find No.	Context	Quantity	Description
1	1390	1	Spindle Whorl
2	1459	1	Anglo-Saxon pottery
3	1003	2	Industrial debris
4	1011	10	Industrial waste
5	1009	10	Industrial waste
6	1385	152	Neolithic pottery from vicinity of Bld 5 pit 1385 See chapter 7
7	1001	1	slag
8	1219	2	slag
9	1084	1	Whetstone?
10	1500	2	slag
11	1531	2	Flint debitage flake

APPENDIX 2- WRITTEN SCHEME OF INVESTIGATION

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL MITIGATION (STRIP, MAP & RECORD EXCAVATION) OF LAND NORTH OF BENLAW GROVE MAIN STREET FELTON, NORTHUMBERLAND

Planning ref: 16/00138/FUL
NC ref: A17/25357

1 Introduction

1.1 This Written Scheme of Investigation (WSI) represents a methods statement for archaeological mitigation for a residential development. The mitigation will consist of a strip, map and record excavation. The proposed development is on a 4ha area of land to the north of Benlaw Grove, Felton, centred on NGR NU 1840 0110.

1.2 The proposed development area has previously been subject to archaeological site investigations. These investigations comprise a desk-top-assessment (AD Archaeology 2015a), a geophysical survey (AD Archaeology 2015b) and evaluation trenching (AD Archaeology 2016).

1.3 Policy relating to the assessment and mitigation of impacts to the heritage resource within the planning system is set out in the National Planning Policy Framework. The Framework identifies that the planning system should perform 'an environmental role', contributing to and protecting the built and historic environment (NPPF 2012, para 9) and that the pursuit of 'sustainable development' includes seeking improvements to the built, natural and historic environment.

1.4 The Framework further clarifies that, in circumstances where heritage assets will be damaged or lost as a result of development, Local Planning Authorities should require developers to record and advance the understanding of the asset to be lost in a manner appropriate to the significance of the asset. The evidence (and any archive) generated as part of the plan making process should be made publically accessible; copies of the evidence generated should be deposited with the relevant Historic Environment Record and archives with the relevant museum (NPPF, para 141).

1.5 Having assessed the potential impact of the development on the archaeological resource, Northumberland Conservation has advised Northumberland County Council (NCC) Development Management Team that a condition should be attached to the permission requiring a programme of archaeological mitigation, comprising a strip, map and record excavation.

2 Site Location

2.1 The site lies to the north of Felton, is 4.0 hectares in size, and is centred on NGR NU 1840 0110. The site consists of a single open field to the east of Main Street

on the northern outskirts of Felton Village. To the south are residential properties on Benlaw Grove and a cemetery and to the north and east are agricultural land.

3 Archaeological and Historical Background

3.1 The archaeological and historical background of the site is recorded in detail within an earlier Desk-Based Assessment undertaken in 2015 (AD Archaeology 2015a).

3.2 Whilst there are no known prehistoric sites recorded in the HER within the development site itself, there is evidence of prehistoric settlement and activity in the wider area. A scatter of Mesolithic flints was located on the north bank of the Coquet in Felton Park 1.2km south-west of the site (Beckensall 2003, in AD Archaeology 2015a). A number of Neolithic stone-axe heads (HER 4348) have been recovered from the Felton area (ibid.) and a flint arrowhead (HER 4326) was found 600m from the site. Recent discoveries have indicated that the Northumberland Coastal Plain contains a density of Iron Age settlements. One such Iron Age settlement is located at Swarland (HER 4327) 3.5km north-west of the site. The background of prehistoric artefactual evidence suggests that the Felton area, lying close to the River Coquet, would have been a fertile and populated area throughout the prehistoric period.

3.3 There are no specific sites from the Roman period recorded within the site.

3.4 Its position on the line of the main road between Newcastle-Berwick meant that Felton remained an important crossing point of the River Coquet throughout the medieval period (AD Archaeology 2015a). Much of the medieval village layout survives with long thin plots at the south end of Main Street containing houses with frontages built up to the pavement. Recreation Lane was the main route to the fields to the east, with a path to the west leading to a spring on the hillside. The area of Felton Park (a designed landscape1.2km south-west of the site), to the west of the church, was a hunting forest.

3.5 In the medieval period the parish (HER 13257) was quite densely settled with villages and hamlets documented at Felton, Old Felton and Acton. On the south side of the river Coquet, Thirston is known to have been settled by 1242. Felton lay within the barony of Mitford, and was in the hands of the Bertram family. Over time ownership of the village passed through several families, among them Scrope, Percy, Lisle, Widdrington and finally to the Riddell family, named in 19th century trade directories of the county as principal landowners. Felton’s position close to the Scottish border meant that it was subject to cross border raids and skirmishes between the 16th-17th centuries. In response to these unsettled times, bastles were constructed at Acton Hall and Lanehead. Felton's position on the main north-south communication route meant that although it was always an important settlement it suffered during the period of border warfare, and very few buildings date recognisably from before the 18th century; no. 6 Riverside is an exception (HER 20178), retaining its early 17th century longhouse plan.

3.6 Felton lay in an area that was extensively farmed and traces of ridge and furrow are evident around the village, although no extant ridge and furrow survives on the site itself.

3.7 A geophysical survey has been undertaken at the site (AD Archaeology 2015b) which produced no evidence for a clear archaeological site.

3.8 Evaluation trenching (AD Archaeology 2016) comprised a 2% sample (11 trenches 50m by 1.8m in size) of the area of development impact. No significant archaeological features were located in the trenches in the western and central areas of the site (Trenches 1-8). At the eastern end of the site a scatter of pits and small cut features were located in Trenches 9 and 11. These features were sealed by the ploughsoil and are likely to be of early-medieval date. No dating evidence was recovered from the fill of these features, although charcoal recovered from one feature submitted for radiocarbon dating produced an 8th Century AD date (713-765calAD). The pits and cut features in Trenches 9 and 11 were heavily truncated surviving to a depth of 0.04m to 0.20m meaning that only the more deeply set features belonging to this period are likely to survive. No evidence for enclosure ditches or boundaries were located in either the geophysical survey or trenching that would help to define the limits of a settlement. It is possible that the scatter of pits and features relate to settlement activity whose main focus was to the east of the site.

4. Mitigation Response

4.1 The assessment exercises have identified that significant archaeological remains
survive at the eastern end of the development site (Trenches 9-11). The loss of archaeological features should be mitigated by a programme of investigation and recording in advance of their destruction. This will ensure their 'preservation by record' consistent with the objectives of paragraphs 141 and 176 of the NPPF.

4.2 Archaeological excavation and recording in advance of development impact will ensure important archaeological remains are not destroyed without first being adequately recorded.

4.3 Northumberland Conservation has therefore advised that the archaeological mitigation in the eastern portion of the site (see Figure) should take the form of a programme of 'strip and record' mitigation. This requires that areas of development impact are stripped under archaeological supervision allowing the targeted excavation of a representative sample of archaeological features and deposits.

4.4 Unless otherwise agreed, all archaeological fieldwork should be completed prior to the commencement of groundworks required for the proposed development. It may be possible for construction to start on parts of the site where

archaeological fieldwork has been completed. This would need to be discussed and agreed with Northumberland Conservation Team.

4.5 Should the strip and record area include areas of modern disturbance which exceed the depth of known natural deposits, Northumberland Conservation will be contacted in order to establish whether the programme of archaeological work need continue in these specific areas.

5. General Standards

5.1 All work will be carried out in compliance with the codes of conduct of the Chartered Institute for Archaeologists (CIfA), will follow the CIfA Standard and Guidance for Archaeological Excavation and will be in line with the Regional Statement of Good Practice. The archaeological contractor will supply details of appropriate and current insurance to undertake excavations. All staff will be professional archaeologists who are suitably qualified and experienced for their project roles. Curriculum vitaes will be supplied to the NCCAO for approval on request. All staff will familiarise themselves with the archaeological background of the site, and the results of any previous work in the area, prior to the start of work on site. All staff will be aware of the work required under the specification, and must understand the project aims and methodologies.

6. Site briefing / 'Toolbox talk'

6.1.1 Provision will be made for the archaeological contractor to host a short project briefing or 'toolbox talk' prior to the any development work on site commencing. The briefing will include a summary of the requirements of the brief and the objectives of the mitigation exercise. Where appropriate reference will be made to the types of archaeological feature / deposits / finds potentially present on site.

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- 6.1.2 The objective of the briefing is to ensure that all site operatives understand the scope and purpose of the archaeological mitigation work and the obligations it conveys on the developer and subcontractors. Provision should be made to brief new subcontractors before they commence work on site (or as soon as reasonably possible after they start) and to provide summary updates on the progress of the archaeological work to all site staff at appropriate intervals or following significant discoveries on site.

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6.2 Soil stripping

6.2.1 Topsoil and unstratified modern material will be removed mechanically by machine using a back-acting **wide toothless ditching bucket**, under continuous archaeological supervision.

6.2.2 The topsoil or recent overburden will be removed down to the first significant archaeological horizon in successive level spits.

6.2.3 The full nature and extent of archaeological features and deposits will be exposed.

6.2.4 No machinery will track over areas that have previously been stripped.

6.2.5 Areas containing archaeological features and deposits will be recorded on a pre-excavation plan.

6.3 Recording and Excavation

6.3.1 All features exposed will be fully mapped and a site plan prepared before decisions are made regarding the appropriate level of excavation. The level of excavation and recording required will be agreed with the NCCAO following the initial topsoil strip. The aim of the mitigation is to record all and any archaeological features present on the site and to undertake sufficient intrusive excavation to enable the date, character, form and stratigraphic relationships of archaeological features to be understood. This process will typically involve significantly less intrusive excavation than would be required under full excavation conditions and potentially less than would be required for a strip and record. All excavation will be by hand. This process will typically require, as a maximum, the following level of sampling:

- Up to 100% of every discrete feature and features of particular interest
- 10% of the area of linear/curvilinear features with a non-uniform fill
- 5% of the area of linear/curvilinear features with a uniform fill
- All archaeological features and deposits must be excavated by hand
- Additional targeted excavation may also be required in certain locations in the event that stratigraphic relationships or artefactual dating evidence cannot be recovered from archaeological features via the initial sampling process. A contingency allowance will be made for any additional work required under these circumstances.

i) This work will involve the systematic examination and accurate recording of all archaeological features, horizons and artefacts identified.

ii) In the event of human burials being discovered the coroners' office will be informed. Any removal of burials will comply with relevant Home Office regulations.

iii) Appropriate procedures under the relevant legislation will be followed in the event of the discovery of artefacts covered by the provisions of the Treasure Act 1996.

iv) During and after the excavation, all recovered artefacts and environmental samples will be stored in the appropriate materials and storage conditions to ensure minimal deterioration and loss of information (this should include controlled storage, correct packaging, regular monitoring of conditions, immediate selection for conservation of vulnerable material).

v) The area will be accurately tied into the National Grid and located on a 1:2500 or 1:1250 map of the area.

vi) A full and proper record (written, graphic and photographic as appropriate) will be made for all work, using pro-forma record sheets and text descriptions appropriate to the work. Accurate scale plans and section drawings will be drawn at 1:50, 1:20 and 1:10 scales as appropriate.

vii) All archaeological deposits and features will be recorded with an above Ordnance Datum (AOD).

viii) A digital photographic record of all contexts will be taken in digital format. All photographs will include a clearly visible, graduated metric scale. A register of all photographs will be kept. The photographic record will be sent to ADS York in an approved format to be stored as part of their electronic archive.

ix) Where stratified deposits are encountered, a 'Harris' matrix will be compiled.

6.3.2 Deposits will be assessed for their potential for providing environmental or dating evidence. Sampling will be in line with the strategy agreed with English Heritage's Regional Scientific Advisor and NCCAO (Section 8). Any variation from this scheme must be approved by Jacqui Huntley, NCCAO and representatives of the developer.

7 Contingency arrangements

7.1 In the event of the discovery of archaeological remains which are of a greater number or extent than anticipated, work will cease and Northumberland Conservation and a representative of the developer will be notified. An assessment will be made of the importance of the remains and any provision for their recording or preservation in situ as appropriate.

7.2 If significant archaeological remains continue beyond the area of the 'strip, map and record' area shown in Figure 1, an assessment should be made of their relative significance as part of a site meeting or monitoring visit. Up to 5 additional days of machine stripping should be allowed to extend the area of the 'strip, map and record' mitigation.

7.3 In the event that such remains require full archaeological 'excavation' (as opposed to rapid excavation and recording as part of the 'strip and record' works), a contingency resource should be allocated to allow this phase of mitigation works. The contingency for this project has been set at up to 50 person-days

7.4 In the event that hearths, kilns or ovens (of whatever period, date or function) are identified during the watching brief, provision should be made to collect at least one archaeo-magnetic date from each individual hearth surface (or in the case of

domestic dwellings sites a minimum of one per building identified). Where applicable, samples are to be collected from the site and processed by a suitably trained specialist for dating purposes. In the event that such deposits or structures are identified, NCCAO should be contacted to discuss the appropriate response. This specific aspect of the sampling strategy should also be discussed in advance with English Heritage as per 'General Standards' above.

8 Environmental Sampling

8.1 A broad environmental sampling strategy will be agreed with Jacqui Huntley (English Heritage Scientific Regional Advisor). After the topsoil stripping and production of a site plan a detailed sampling strategy will then be discussed with the NCCAO and the EH Scientific Regional Advisor.

8.2 The objective of the sampling strategy will be to determine the date and duration of occupation of a site if located and the nature of crops being used.

8.3 Flotation samples will be taken from the complete range of contexts but with the expectation that a subsequent processing strategy be adopted once the plan is finalised, i.e. many more samples should be taken than processed. This marks a reduction from the standard process where there is an expectation to assess all samples taken. In the current case it may not be obvious during excavation which contexts will be suitable to address the questions under consideration. Priority will be given to processing samples from identifiable, dated features, or to those undated features which have potential for other forms of dating (e.g. radiocarbon dating).

8.4 Regarding scientific work on the site, the prime aim, due to the truncation of archaeological deposits, will be to retrieve material which would date any sites located. This can be achieved by taking 30-litre samples of whole earth from secure albeit shallow contexts and processing by flotation to retrieve charred material – either cereal grains or wood charcoal from short-lived material (twigs and the like). The samples will need careful selection subsequent to excavation to ensure their provenance is from areas remote from inter-cutting features risking contamination.

8.5 Other targeted samples can potentially address the question regarding species of wheat or other details regarding the cereal economy of the site. Such contexts could include the butt ends of gullies and ditches where material regularly seems to have been deposited as well as any pits or surviving remnants of occupation layers.

8.6 Bulk sample residues will be checked for the presence of industrial waste (e.g. slags, hammerscale) and small faunal remains (e.g. fishbones, small mammal/avian bones) as well as for plant material. The potential of buried soils and ditch fills to provide pollen cores or Optically Stimulated Luminescence (OSL) dating will be considered, although this type of sampling would normally be undertaken in

consultation with the Regional Scientific Advisor.

8.7 Given the clay-rich nature of the sediments, which will require considerable time to process the material adequately, it should be acceptable to process and assess 10-litre sub-samples from a larger number of samples in the first instance but a minimum volume of 30-litre samples must be taken wherever possible. This will allow for further potential processing (costs for which would need including in subsequent analytical stages) in order to produce statistically significant data sets post-analysis. Any remaining samples should be kept until the completion of the project in case they prove to be useful in answering questions that may arise during the post-excavation process.

8.8 The selection of suitable deposits for sampling will be confirmed at site meetings with the NCCAO. In principle palaeo-environmental samples will be taken from deposits which have clear stratigraphic relationships. Particular attention will be paid to the recovery of samples from any waterlogged samples that may be present.

9 Post excavation work, archive and report preparation

Finds

9.1 All finds processing, conservation work and storage of finds will be carried out in compliance with the CIFA Guidelines for Finds Work and those set by UKIC. All recovered artefacts will be stored in the appropriate materials and storage conditions to ensure minimal deterioration and loss of information (this should include controlled storage, correct packaging, regular monitoring of conditions, immediate selection for conservation of vulnerable material).

9. 2 The deposition and disposal of artefacts will be agreed with the legal owner and recipient museum prior to the work taking place. Where the landowner decides to retain artefacts adequate provision must be made for recording them. Details of land ownership will be provided by the developer.

9.3 All retained artefacts will be cleaned and packaged in accordance with the requirements of the recipient museum.

9.4 All finds and enviromental samples will be processed and subsequently analysed by appropriate specialists as part of the post-excavation assessment. Specialist identification and analysis will include as a minimum and where appropriate:

- Pottery and ceramic building material
- Bone
- Flint
- Metal work
- Industrial debris
- Environmental micro and macro fossils

- Residue analysis
- Radio carbon dating
- Any other analysis identified as necessary during the fieldwork or post excavation work

9.5 Site Archive

9.5.1 Archiving work will be carried out in compliance with the CIfA Guidelines for Archiving. Paragraph 141 of the National Planning policy Framework clarifies that Local Planning Authorities should make evidence gathered as part of archaeological mitigation exercises, including any archive, publically accessible. Copies of the primary report should be deposited with the Historic Environment Record and the archive deposited with an agreed local museum.

9.5.2 The archive and the finds will be deposited at the Great North Museum (GNM) within **6 months** of completion of the post-excavation work and report. The GNM has been contacted in advance of the project and it has been specified that an accession number will be assigned upon the deposit of the archive.

9.5.3 Before the commencement of fieldwork, contact will be made with the landowners and with the Great North Museum to make the relevant arrangements

9.5.4 The NCCAO will require confirmation that the archive had been submitted in a satisfactory form to the relevant museum before recommending to the local planning authority that the condition should be fully discharged.

9.6 Report

9.6.1 A post-excavation archive report will be prepared to the following standards:

i) One bound paper copy of the report will be submitted:

- For deposition in the County HER to the NCCAO

ii) Three digital copies (pdf of the report on CD) will be submitted:

- one copy to the commissioning client
- one for the planning authority (Northumberland County Council) which must be formally submitted by the developer with the appropriate fee
- one for deposition in the County HER to the NCCAO.
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ii) The report will have each page and paragraph numbered and illustrations cross referenced within the text. All drawn work should be to publication standard.

The report will include as a minimum the following:

- OASIS reference number and an 8 figure grid reference.
- An executive summary
- A location plan of the site at an appropriate scale of at least 1:10 000
- A location plan of the extent of the works within the site. This will be at a suitable scale, and located with reference to the national grid, to allow the results to be accurately plotted on the Sites and Monuments Record
- Plans and sections of archaeology located
- A site narrative – interpretative, structural and stratigraphic history of the site
- A table summarising the deposits, features, classes and numbers of artefacts encountered and spot dating of significant finds
- Photographs of the site, showing the location of groundworks in context and any archaeological features that are revealed.
- Contractor's details, including dates the work was carried out, the nature and extent of the work.
- Description of the site location and geology
- Artefact reports – full text, descriptions and illustrations of finds
- Laboratory reports and summaries of dating and environmental data, with collection methodology
- A consideration of the results of the field work within the wider research context (ref. NERRF)
- Recommendations for analysis of finds or environmental samples
- Copy of this Project Design
- Any variation to the above requirements will be approved by the planning authority prior to work being submitted

9.6.2 Northumberland Conservation will need to approve the report before discharging the condition on the planning permission.

10 Publication

10.1 If the results of the archaeological mitigation are of sufficient interest an appropriate level of publication will be agreed with the Northumberland Conservation Team and will be prepared in line with the approved project design and Sections 7 and 8 and Appendix 7 in English Heritage's Guidelines on the Management of Archaeological Projects.

10.2 The publication article will be submitted within one year of the approval of the updated project design for full analysis and publication, unless previously agreed with all relevant parties. A summary will also be prepared for "Archaeology in Northumberland".

10.3 Northumberland Conservation Team will require confirmation that the publication report has been submitted in a satisfactory form to an appropriate journal before recommending to the local planning authority that the condition

should be fully discharged.

11 OASIS

11.1 Northumberland Conservation Team supports the Online Access to Index of Archaeological Investigations (OASIS) Project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large scale developer funded fieldwork.

11.2 The contractor will therefore complete the online OASIS form at http://ads.ahds.ac.uk/project/oasis/ and will contact Northumberland HER prior to completing the form. Once a report has become a public document by submission to or incorporation into the HER, Northumberland HER will validate the OASIS form thus placing the information into the public domain on the OASIS website.

12 Monitoring

12.1 Northumberland Conservation Team will be informed on the start date and timetable for the watching brief in advance of work commencing. Reasonable access to the site for the purposes of monitoring the archaeological scheme will be afforded to the Northumberland Conservation Team or his/her nominee at all times. Regular communication between the contractor, the Northumberland Conservation Team and other interested parties will be maintained to ensure the project aims and objectives are achieved.

13 Bibliography

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Department for Communities and Local Government: National Planning Policy Framework (NPPF), March 2012.

Yorkshire, The Humber and the North-East*: A Regional Statement of Good Practice for Archaeology in the Development Process* (25 November 2009)

Plate 1: Aerial view (Google Earth) of Felton strip and record

Plate 2: Overall view of Felton strip and record, facing west

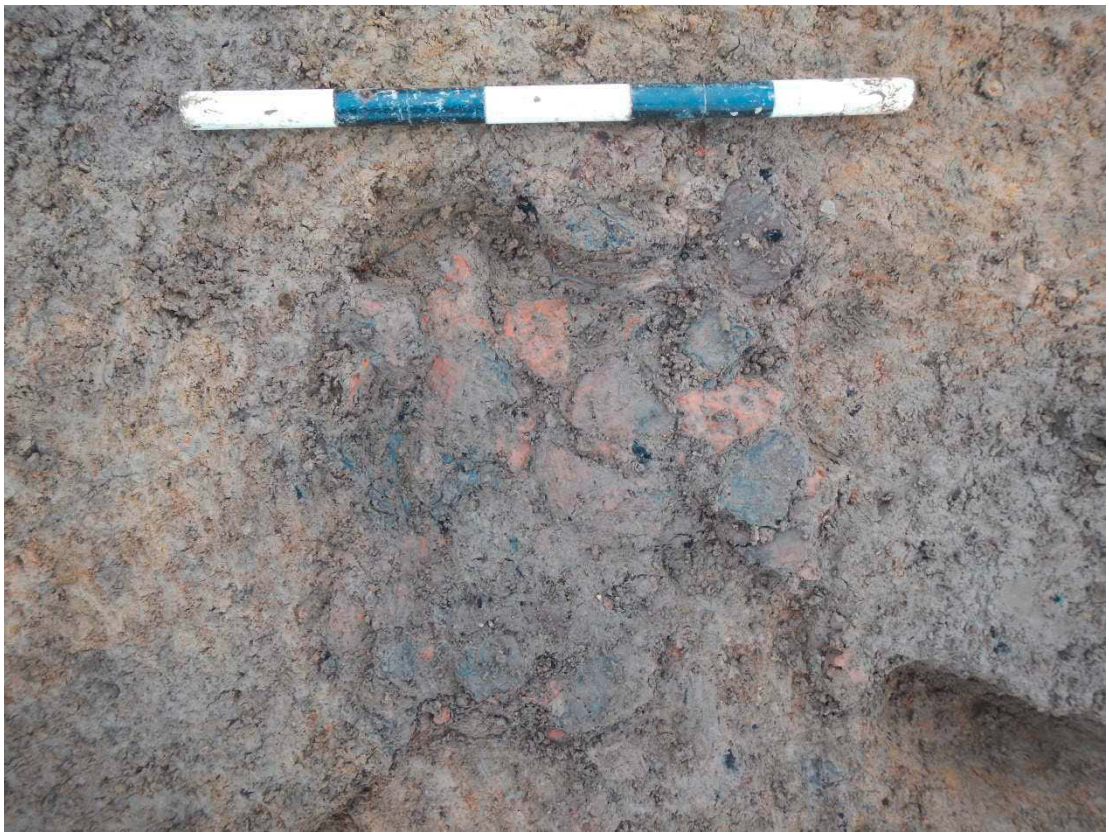

Plate 3: Neolithic pottery vessels within pit 1385

Plate 4: Overall view of PBS 5, facing west

Plate 5: East end of PBS 5 , facing north

Plate 6: Overall view of PBS 3, Pit 1220 in foreground, facing west

Plate 7: Overall view of PBS 2 & 11, facing southwest

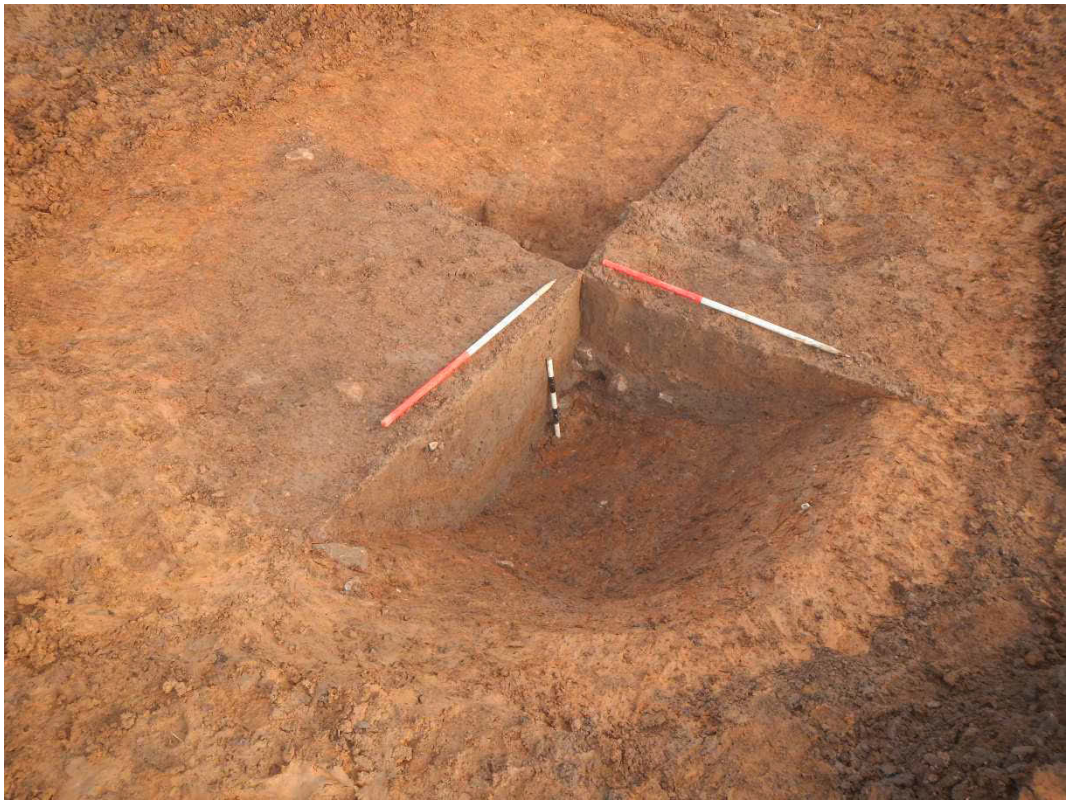

Plate 8: Overall view of SFB 3, facing northeast

Plate 9: Overall view of PBS 2 & 11, facing southwest

Plate 10: Overall view of PBS 8 during excavation, facing southwest

Plate 11: Overall view of PBS 1, facing northeast

Plate 12: Overall view of PBS 4, facing east

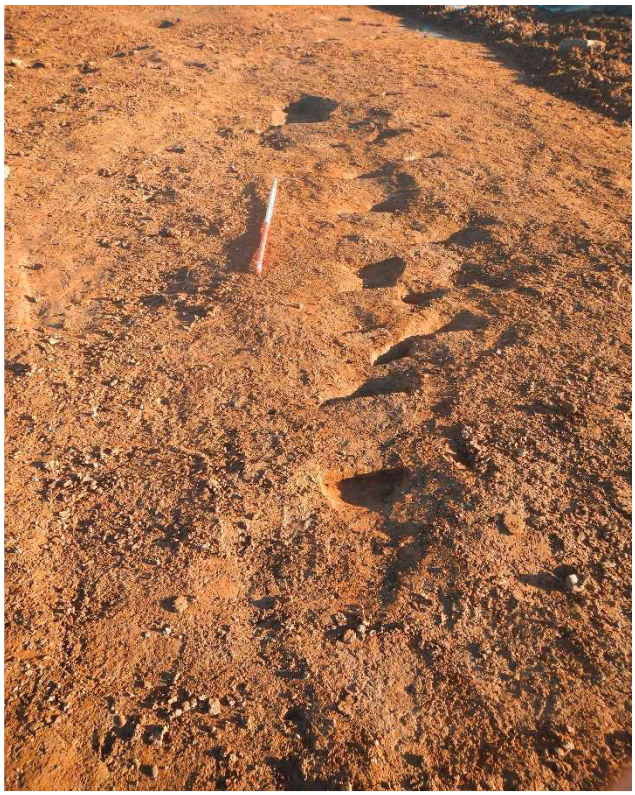

Plate 13: Overall view of PBS 6, facing east

Plate 14: Overall view of gully 1839, facing east

Plate 15: Overall view of PBS 27 & 22, facing northwest

Plate 16: Overall view of SFB 2, facing southeast

Plate 17: Group of pits 1491, 1489, 1487 Area 8, facing west

Plate 18: SFB 1, facing southeast

Plate 19: Overall view of PBS16, facing west

Plate 17: SFB 1, facing southeast

Plate 18: Overall view of PBS16, facing west

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