Archaeological Excavations at Cheviot Quarry, Northumberland

Phase 10, 2018

Artists reconstruction of the Early Neolithic longhouse identified during the Phase 10 excavations at Cheviot Quarry

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Site central NGR:	NT 95399 31135

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EXECUTIVE SUMMARY

Project Name: An Archaeological Excavation at Cheviot Quarry, Northumberland
Site Code: LAN18
Planning Authority: Northumberland County Council
Drift Geology: Devensian glacio-fluvial sands and gravels
NGR: NT 95399 31135
Dates of fieldwork: May-June 2018
Dates of report: September 2018

A tenth phase of archaeological strip, map and sample excavations was undertaken by Archaeological Research Services Ltd at Cheviot Quarry near Milfield, Northumberland, on behalf of Tarmac Ltd. The fieldwork took place over a period of three weeks in May 2018, over an area of c. 1.67 hectares. Archaeological investigations involved the mechanical removal of topsoil, under archaeological supervision, followed by hand excavation and recording of any archaeological deposits, features or structures exposed.

A total of 50 features were excavated and recorded during Phase 10. These included:

- *Twelve Early Neolithic pits, in three discrete pit clusters, which contained fragments of burnt bone, a heat affected flint scraper, burnt stone and multiple fragments of Carinated Bowl.*
- *A rectangular Early Neolithic building (PBB 33), with internal pits, as well as remnants of internal activity in the form of heat affected gravel, probably associated with a hearth and domestic occupation*
- *Early Neolithic 'midden' pits flanking the western edge of the Early Neolithic building*
- *A probable fire-pit situated south of the Early Neolithic building*
- *Two post-medieval field boundary ditches*
- *Four modern sheep burials*
- *Three undated pits*

The Phase 10 archaeological investigations have revealed multiple phases of activity, spanning the prehistoric to the modern period. The Early Neolithic period was characterised by three pit clusters (PC1, PC2 and PC3) and a rectangular building thought to be a 'house' (Post-Built Building 33) consistently radiocarbon dated to around the 38th century BC. Rectangular Neolithic houses are rare with only a handful known throughout Britain, the nearest and most similar in form being those found at Lismore Fields, Buxton. This important discovery at Cheviot Quarry extends our understanding of Early Neolithic settlement in the region and adds an important new element to the other Early Neolithic structures found at the quarry during phases 1, 2 and 9, which are much smaller and are triangular in shape..

Post-Built Building 33 had an internal area of c. 75m^2 and its construction and layout in plan suggest it was roofed with a gable end, consistent with similar examples from the same period at Horton, Berkshire and Lismore Fields, Derbyshire.

The interior of PBB 33 was focused upon a centre-post and a spread of heat affected natural gravel which likely indicates the location of an internal hearth. The highest concentration of heat affected gravel lay to the west of the centre-post and may suggest that PBB 33 was divided into eastern and western compartments, possibly divided by a light timber partition. The western portion of the buildings' interior is interpreted as a living area whilst the presence of pits, in the eastern portion of the building, may provide evidence for domestic, processing and storage activities.

The shape, structural forma nd ground plan of the building, together with the large quantities of charred grain, fragments of Early Neolithic Carinated Bowl ceramics and the similarity in form of PBB33 to other buildings dated to this period, support its attribution as an Early Neolithic house. The substantial size of the building and investment in materials and labour to build it, together with the use of ceramics and high incidence of cereal remains indicates what is likely to have been a sedentary agricultural settlement.

Pit Clusters 1, 2 and 3 are interpreted as 'midden' pits associated with the routine disposal of domestic waste including in particular cooking waste. The recovery of multiple sherds of Carinated Bowl, a quernstone and charred cereal grain from the pit clusters is indicative of Early Neolithic grain production and processing in and around the settlement.

The assemblage of ceramics and the accompanying radiocarbon dates resulting from the Phase 10 work complements the already nationally important assemblage that has been collected on the site to date, and which together provide a continuous ceramic sequence through the entire Neolithic period. Additionally, the identification of a rare but well-preserved building type indicative of permanent settlement improves our understanding of Early Neolithic settlement forms and organisation in the region as well as providing valuable information relating to the arrival, distribution and propagation of Neolithic 'culture' in northern Britain.

1 INTRODUCTION

1.1 This report describes Phase 10 of an archaeological strip, map and sample investigation undertaken at Cheviot Quarry, Northumberland in June 2018 by Archaeological Research Services Ltd on behalf of Tarmac. Phase 10 of the site was stripped of topsoil revealing heavily truncated archaeological deposits cut into the sand and gravel substratum below. Excavation and sampling of the *c*.1.67 hectare area took place following the soil strip.

1.2 Archaeological investigations have taken place at Cheviot Quarry since 2003, when a programme of fieldwalking recovered finds which included a cache of 10 Neolithic blade and flake tools. A test pit, excavated in the location of the cache, retrieved a further 48 large flint tools and part of a Neolithic pit feature below. Excavations began in 2006, when the quarry operation was established, and continued in 2008 prior to the quarry becoming live. Since the quarry opened and began operating a further eight phases of strip, map and sample excavations have been carried out as the quarry has been worked. Previous archaeological discoveries include highly significant evidence for multi-period Neolithic settlement remains which have yielded the single largest assemblage of Neolithic pottery yet found in northern England; Late Neolithic cremation burials; Bronze Age farming settlements and associated 'granary' structures; a late Iron Age burial ground with what appears to be an associated shrine; and a pioneer phase Anglo-Saxon settlement that has produced important remains of craft production from associated workshops including an important assemblage of pottery, loom weights, metal objects, querns, polychrome glass beads and an abundance of cereal remains. The Anglo-Saxon settlement lay immediately over a pre-existing native British roundhouse. Further remains of this settlement survive under the southern bund of the quarry and are yet to be excavated. This site was called Lanton Quarry and Tarmac has renamed the site as Cheviot Quarry. For ease of reference, reports regarding Lanton Quarry refer to the current Cheviot Quarry site and vice versa.

1.3 The Phase 10 archaeological works lay in the northern portion of the quarry, bounded by woodland to the north, ploughed fields to the east and the current haul road to the west.

2 LOCATION, LAND USE AND GEOLOGY

2.1 Cheviot Quarry lies in the Milfield Basin, to the northeast of the Cheviot massif, approximately 3km north of Wooler (Figure 1 and Figure 2). The Milfield plain is an area of low-lying ground abutting areas of upland that contain a complex sedimentary sequence where glaciodeltaic and glaciofluvial sand and gravel deposits fan out from the valley of the River Glen to form a series of terraces (Passmore et al. 2002; Passmore and Waddington 2012). Inset below the gravel terraces is an in-filled glacial lake, Lake

'Ewart' or 'Milfield', which forms an extensive alluvial floodplain. Eight hundred metres to the northeast of the site lies the current channel of the River Till, and beyond that the land rises to the Fell Sandstone escarpment which borders the basin on its eastern side. Three kilometres to the south, the igneous rocks of the Cheviot Hills rise abruptly from the plain above the River Glen, where the summits of Humbleton Hill, Harehope Hill and the double peak of Yeavering Bell form prominent landmarks. To the west, the northern foothills of the Cheviots run parallel to the Fell Sandstone ridge, leaving only a 2 km wide corridor at the northern end of the plain through which the River Till meanders. The archaeology of Cheviot Quarry is situated on a terrace of glaciofluvial sand and gravel deposits, situated for the most part at *c.*45 m above Ordnance datum (aOD). The soils covering this part of the glaciofluvial terrace have been characterised as being of argillic brown earth origin (Payton 1992).

3 METHOD STATEMENT

3.1 The methodology for the strip, map and sample excavations followed the Written Scheme of Investigation contained within the 'Cultural Heritage' chapter for the Environmental Statement that formed part of the planning application for the site (Waddington 2009).

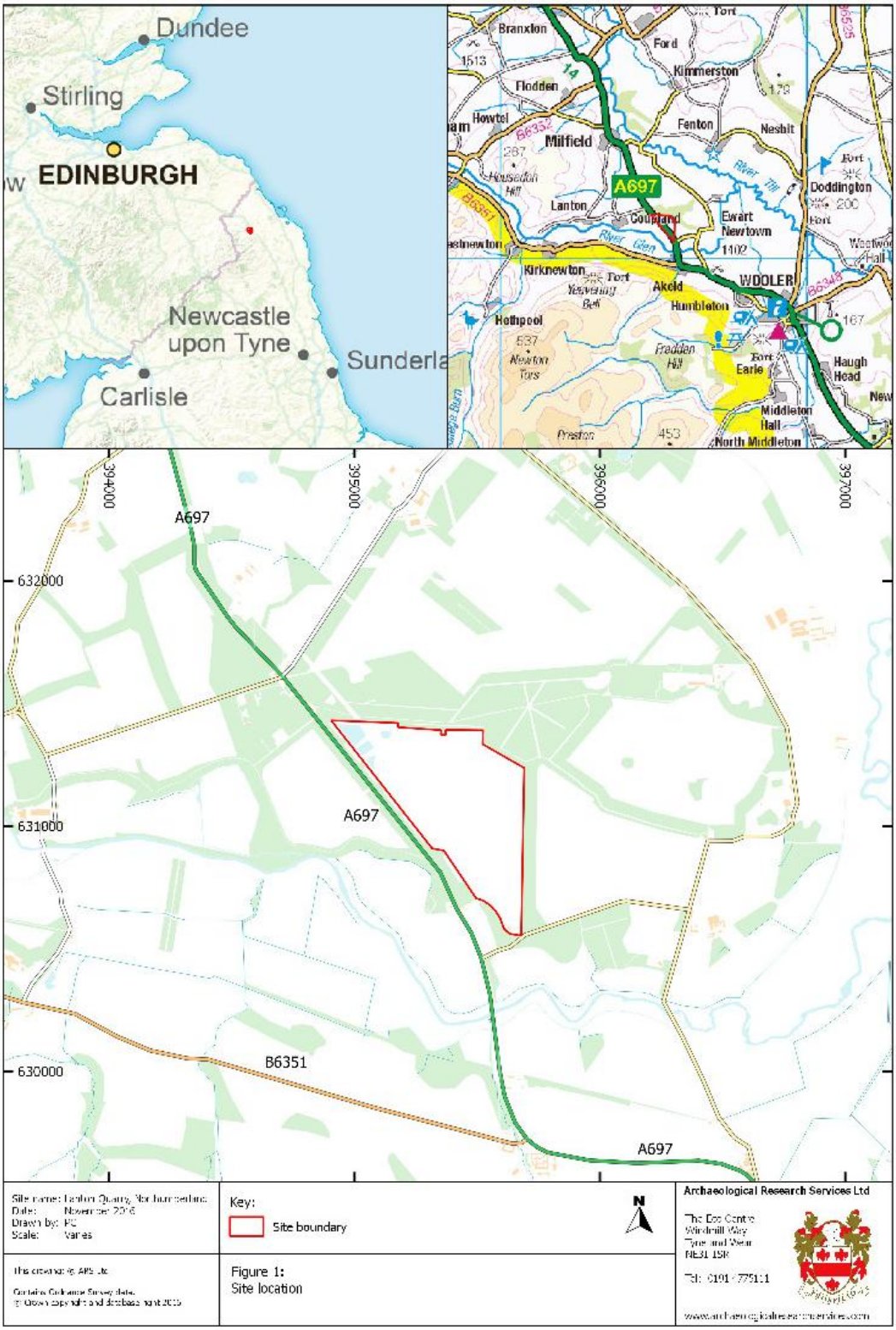

Figure 1. Site location. (Ordnance Survey data copyright OS, reproduced by permission, Licence no. 100045420).

4 RESULTS

4.1 The following section is presented in chronological order with features described in the text and supported by individual context descriptions in the corresponding tables. All accompanying photographs and line drawings are presented in the appendices.

4.2 The visibility of the archaeological features was often poor due to the high level of horizontal truncation across the site, caused by centuries of agricultural activity and the nature of the sand and gravel geology. In addition, the practice of backfilling some features with the same material that they had been dug through made identification of such subtle differentiation challenging, as has always been the case during excavations across this sand and gravel substrate.

4.3 A total of 50 features were excavated and recorded during the Phase 10 excavations. These included:

- Twelve Early Neolithic 'midden' pits, divided between three discrete pit clusters, which contained fragments of burnt bone, a heat affected flint scraper, burnt stone and multiple fragments of Carinated Bowl.
- A rectangular, Early Neolithic, post-built structure (Post-built Building 33) with four internal pits that contained domestic waste. These pits were excavated through a spread of heat affected natural gravel which was probably associated with a hearth and suggests domestic occupation of the structure.
- Four Early Neolithic 'midden' pits flanking the western edge of the post-built structure.
- A probable fire-pit situated immediately south-east of Post-built Building 33.
- Two post-medieval field boundary ditches
- Four modern sheep burials
- Three undated pits

Early Neolithic

Pit Cluster 1

4.4 Pit Cluster 1 was located at the central north-western edge of the excavation area and comprised five 'midden' pits (F4228, F4230, F4242, F4253, and F4501). The pits averaged 0.65m in diameter and 0.19m deep at the start of the archaeological horizon and displayed near vertical sides with rounded, uneven bases. Pits F4242 and F4253 lay in close proximity to one another and produced numerous large, fragments of burnt stone, sherds of Early Neolithic pottery and high concentrations of charcoal (Table 1, Figure 4, Figure 7, and Figure 39). A fragment of charred cereal grain recovered from pit F4242 produced a radiocarbon date range of 3936 – 3695 cal BC (95.4% probability) (SUERC-81491).

4.5 The depositional sequence within pits F4242 and F4253 demonstrated a deliberately backfilled basal fill that contained domestic refuse and much charred material being typically dark grey-black in colour, overlain by a mixed deposit of natural substrate and subsoil that was paler brown in colour. Pits F4228 and F4501 did not produce any datable finds but were also interpreted as Early Neolithic pits due to their similarity and proximity to pits F4230, F4243 and F4253. The pits comprising Pit Cluster 1 were collectively interpreted as characterising a waste disposal area associated with localised Early Neolithic domestic occupation.

Table 1. Early Neolithic pit Cluster 1.

Feature	Contexts	Description	Average dimensions (m)	Colour of fill	Composition	Finds	C14 date (95.4% probability) cal BC
F4228	4227, 4228	Large, Shallow Pit	0.50 x 0.52 x 0.16	Dark black-brown (4228)	Silt - sand		
F4230	4229, 4230	Large, 'midden' pit	0.58 x 0.42 x 0.18	Dark black-brown (4230)	Silt - sand	Neolithic pottery sherds, burnt bone	
F4242	4241, 4242, 4243	Large, domestic 'midden' pit	0.82 x 0.85 x 0.22	Dark grey-black (4243) and grey-brown (4242)	Silt - sand	Neolithic pottery sherds, flint scraper	3936 - 3695
F4253	4239, 4240, 4253	Large, domestic 'midden' pit	0.80 x 0.72 x 0.24	Dark grey-black (4240) and grey-brown (4253)	Silt - sand	Neolithic pottery sherds	
F4501	4500, 4501	Small shallow pit	0.55 x 0.56 x 0.15	Dark black-brown (4501)	Silt - sand		

Pit Cluster 2

4.6 Pit Cluster 2 lay on the eastern edge of the stripped area, approximately 26m north-east of Post-Built Building 33 (Table 2, Figure 3, Figure 9, Figure 11, Figure 40, and Figure 41). This pit cluster comprised seven pits (F4261, F4268, F4270, F4273, F4281, F4331 and F4333) and a single shallow posthole (F4285). Pits F4261, F4268 and F4273 averaged 0.67m in diameter, 0.27m in depth and displayed a similar depositional sequence to the pits in Pit Cluster 1 where by a dark, charcoal-rich, basal fill with fragments of Early Neolithic pottery was sealed by a layer of redeposited topsoil. Pit F4273 was of additional note because of its markedly larger size in comparison to the other features in the same cluster, as well as the presence of a quern stone within its basal fill (Figure 14 and Figure 15). The pits comprising Pit Cluster 2 nearly all displayed concave sides and rounded, uneven bases aside from pit F4261 which displayed near vertical sides and a flat uneven base.

4.7 Charred cereal grain was recovered from fill (4272) of pit F4273 which was radiocarbon dated to 3783 - 3657 cal BC (95.4% probability) (SUERC- 81626). Despite the relative heterogeneity of the pits in Pit Cluster 2, the similarity of find type *and*

depositional sequence within these features may suggest that the pits are contemporary, or had at least been formed and gone into disuse in similar ways. This may be indicative of habitual reuse of this part of the site for waste disposal in the Early Neolithic.

4.8 A posthole, F4285, which lay at the centre of Pit Cluster 2, survived to a depth of only a few centimetres. Given the ephemeral form of this posthole F4285 it is not unreasonable to assume that other postholes may have been present within the vicinity of Pit Cluster 2 but have been subsequently truncated away.

Table 2. Early Neolithic Pit Cluster 2

Feature	Contexts	Description	Average dimensions (m)	Colour of fill	Composition	Finds	C14 date (95.4% probability) cal BC
F4261	4259, 4260, 4261	'midden' pit	0.85 x 0.64 x 0.23	Dark black-brown (4260) and grey-brown (4261)	Silt - sand	Neolithic pottery sherds	
F4268	4266, 4267, 4268	'midden' Pit	0.80 x 0.76 x 0.30	Dark black-brown (4267) and grey-brown (4268)	Silt - sand		
F4270	4269, 4270	Waste pit	0.60 x 0.5 x 0.4	Dark grey-black (4270)	Silt - sand	Neolithic pottery sherds, burnt bone, burnt flint	
F4273	4271, 4272, 4273	Large 'midden' pit	0.73 x 1.71 x 0.6	Black-brown (4272) and grey-brown (4273)	Silt - sand	Neolithic pottery sherds and quern stone	3783 - 3657
F4281	4280, 4281	Small waste pit	0.59 x 0.5 x 0.12	Grey-brown (4281)	Sandy-silt		
F4285	4284, 4285	Posthole	0.23 x 0.24 x 0.04	Mid brown-black (4285)	Sandy-silt		
F4331	4330, 4331	Waste pit	0.62 x 0.5 x 0.14	Dark black-brown (4331)	Sandy-silt		
F4333	4332, 4333	Waste Pit	0.33 x 0.34 x 0.1	Grey-brown (4333)	Sandy-silt		

Pit Cluster 3

4.9 Pit Cluster 3 lay at the northern edge of the site, close to post-medieval boundary ditch F4258 (Table 3, Figure 3, Figure 16, and Figure 42). It comprised two shallow, sub-circular pits (F4290 and F4292) which had been heavily disturbed by root action. The pits averaged 0.65m in diameter and 0.12m deep at the start of the archaeological horizon and displayed concave sides with rounded, uneven bases. Pit F4292 contained a charred fragment of hazelnut shell, radiocarbon dated to 3777 – 3661 cal BC (95.4% probability) (SUERC 81236), embedded in the fabric of a sherd of Early Neolithic pottery.

4.10 Pit F4290 produced no datable finds, however, the similarity in form between pits F4290 and F4292 and their extremely close proximity to one another, suggests that both features date to the Early Neolithic.

4.11 Pit Cluster 3 was isolated from other comparable features. It has been initially interpreted as a discrete cluster of domestic waste pits, this interpretation may change following further phases of archaeological investigation.

Table 3. Early Neolithic Pit Cluster 3.

Feature	Contexts	Description	Average dimensions (m)	Colour of fill	Composition	Finds	C14 date (95.4% probability) cal BC
F4290	4289, 4290	'midden' pit	0.6 x 0.5 x 0.1	Dark brown-black (4290)	Sandy-silt		
F4292	4291, 4292	'midden' Pit	0.7 x 0.6 x 0.14	Dark grey-brown (4292)	Sandy-silt	Neolithic pottery sh.	3777 - 3661

Post-Built Building 33

4.12 Post-Built Building 33 is represented by twelve postholes (F4245, F4252, F4279, F4296, F4298, F4302, F4304, F4306, F4308, F4311, F4315 and F4323), seven associated exterior pits (F4226, F4250, F4318, F4320, F4325, F4328 and F4250), four internal possible 'midden' or hearth clearance pits (F4247, F4256, F4275, F4277) and a spread of heat affected gravels (4309) (Table 4, Figure 3, Figure 17, Figure 26, Figure 43, Figure 44, and Figure 45).

4.13 The building comprised a framework of timber uprights, representing the external walls forming a rectangular plan orientated on a broadly east to west alignment. The walls of PBB33 are defined by parallel lines of regularly spaced postholes which define an internal area measuring 12.28m x 6.14m or 75m^2. The postholes measured an average 0.26m in diameter, 0.21m in depth and displayed concave sides with rounded, uneven bases. Fragments of birch and hazel, recovered from postholes F4298 and F4304, provided a radiocarbon date range of 3763 - 3649 cal BC (95.4% probability) (SUERC-81233) and 3914 – 3704 cal BC (95.4% probability) (SUERC-81234) respectively. An interior posthole (F4252), at the centre of the building, suggests that a central post supported both the roof structure and a north to south partition which divided the internal space of PBB 33 into an eastern and western compartment. Centre-post hole F4252 was surrounded by a spread of heat affected gravel (4309) which, while concentrated towards the western most partition of the building, extended into the eastern partition also. The presence of this gravel spread (4309) potentially highlights the location of a hearth which probably lay within the western portion of the building. It is also worth noting that three internal pits (F4256, F4277 and F4275), which contained concentrations of charcoal, heat affected stone, and Early Neolithic pottery, lay in a discrete cluster within the eastern partition of the structure, possibly suggesting different functions and uses of space between the western and eastern sections of the building. A fragment of charred cereal grain recovered from 'midden' pit F4256 produced a radiocarbon date range of 3893 – 3659 cal BC (95.4% probability) (SUERC 81452).

4.14 Six exterior pits (F4226, F4318, F4320, F4326, F4329 and F4335) were identified in a cluster around the western portion of the building (Figure 24, Figure 25, Figure 43, and Figure 44). These pits averaged 0.75m in diameter, 0.34m in depth, were broadly similar in form and contained charcoal rich deposits associated with the deliberate deposition of domestic waste. Pits F4226 – FF4335 were considered to be contemporary, due to their similarity in form and their proximate location to each other. Similarly, these pits respected PBB 33 and formed a broad arc around the structures western gable end possibly representing external space consistently used by the buildings inhabitants for the disposal of waste.

4.15 Although the majority of the external pits were focused around the western edge of PBB 33, a single exterior pit (F4250) was revealed approximately 2m to the south of the eastern extent of the building (Figure 26, Figure 43, and Figure 45). Pit F4250 was notably larger than the other exterior pits associated with PBB 33. It was filled by two dumped deposits (4249/4250) containing concentrations of charcoal and fragments of Early Neolithic pottery. The geological natural (4250) adjacent to pit F4250 showed evidence of scorching in two discrete locations which may suggest that hearth material was dumped into the pit while still relatively hot. Pit F4250 is interpreted as a domestic 'midden' pit which had been infilled over a relatively short period of time by a series of rapid dumping events.

Feature	Contexts	Description	Average dimensions (m)	Colour of fill	Composition	Finds	C14 date (95.4% probability) cal BC
F4226	F4225, 4226	External 'midden' Pit	0.80 x 0.70 x 0.22	Black-brown (4226)	Sandy-silt		
F4245	4244, 4245	Posthole	0.35 x 0.42 x 0.38	Grey-brown (4290)	Sandy-silt		
F4247	4246, 4247	Interior 'midden' Pit	0.66 x 0.26 x 0.11	Grey-brown (4247)	Sandy-silt		
F4250	4248, 4249, 4250	External Hearth Clearance Pit	1.3 x 3 x 0.6	Brown-grey (4250), Black-brown (4249)	Sandy-silt	Neolithic pottery sherds from (4249) and (4250)	
F4252	4251, 4252	Posthole	0.52 x 0.47 x 0.07	Dark grey-brown (4252)	Sandy-silt		
F4256	4254, 4255, 4256	Internal 'midden' Pit	0.56 x 0.59 x 0.3	Brown-black (4255), grey-brown (4256)	Sandy-silt	Daub	3893 - 3659
F4275	4274, 4275	Internal 'midden' Pit	0.62 x 0.64 x 0.42	Dark brown-black (4275)	Sandy-silt	Neolithic pottery sherds	
F4277	4276, 4277	Internal 'midden' Pit	0.34 x 0.22 x 0.08	Dark brown-black (4277)	Sandy-silt		
F4279	4278, 4279	Posthole	0.34 x 0.29 x 0.28	Brown-black (4279)	Sandy-silt	Neolithic pottery sherds	
F4296	4295, 4296	Posthole	0.10 x 0.19 x 0.20	Dark black-brown (4296)	Sandy-silt	Neolithic pottery sherds	
F4298	4297, 4298	Posthole	0.21 x 0.26 x 0.20	Black-brown (4298)	Sandy-silt		3763 - 3649
F4300	4299, 4300	Posthole	0.10 x 0.30 x 0.22	Black-brown (4300)	Sandy-silt		
F4302	4301, 4302	Posthole	0.21 x 0.27 x 0.3	Dark grey-brown (4302)	Sandy-silt		
F4304	4303, 4304	Posthole	0.21 x 0.25 x0.23	Dark grey-brown (4304)	Sandy-silt		3914 - 3704
F4306	4305, 4306	Posthole	0.29 x 0.26 x 0.29	Dark black-brown (4306)	Sandy-silt	Neolithic pottery sherds	
F4308	4307, 4308	Posthole	0.17 x 0.23 x 0.04	Grey-brown (4308)	Sandy-silt		
F4309	4309	Heat Affected Gravel Spread	6.19 x 4.05 x 0.07	Black-brown (4309)	Sandy-gravel	Heat Affected stone	
F4311	4310, 4311	Posthole	0.16 x 0.25 x 0.14	Grey-brown (4311)	Sandy-silt		
F4315	4314, 4315	Posthole	0.37 x 0.43 x 0.14	Mid grey-brown (4315)	Sandy-silt		

F4318	4317, 4318	External 'midden' Pit	0.34 x 0.48 x 0.15	Grey-brown (4318)	Sandy-silt		
F4320	4319, 4320	External 'midden' Pit	0.30 x 0.30 x 0.07	Grey-brown (4319)	Sandy-silt		
F4323	4322, 4323	Posthole	0.2 x 0.22 x 0.11	Dark grey-brown (4323)	Sandy-silt		
F4326	4324, 4325, 4326	External 'midden' Pit	0.67 x 0.47 x 0.59	Grey-brown (4325), brown-grey (4326)	Sandy-silt		
F4329	4327, 4328, 4329	External 'midden' Pit	0.54 x 0.96 x 0.29	Dark brown-black (4328), grey-brown (4329)	Sandy-silt		
F4335	4334, 4335	External 'midden' Pit	0.58 x 0.46 x 0.12	Dark grey-brown (4335)	Sandy-silt		

Table 4. Post-built Building 33 and associated features

Post-medieval

4.16 Two Post-Medieval field boundary ditches were identified and excavated during Phase 10 (Table 5, Figure 27, Figure 28 and Figure 46). Ditch F4282, ran parallel to the modern fence line at the north-east edge of the stripped area and had also been recorded in the Phase 9 works. Ditch F4282 measured 48.91m in length, averaged 0.42m in depth, had a 'V' shaped profile and its single fill comprised a black silty loam with frequent modern roots.

4.17 The second boundary ditch F4258 formed a south-eastern branch of principal ditch F4282 and was considered likely to have formed part of a NW-SE aligned field system of which ditch F4282 formed the northern extent. Ditch F4258 displayed the same 'V'-shaped profile as ditch F4282, measured 20.16m in length, averaged 0.27m in depth and extended south-east beyond the limit of excavation. Both ditches F4282 and F4258 are visible on 1st Edition Ordnance Survey mapping data but the recovery of a single fragment of 18th century pottery from ditch F4258 may suggest that the field system had an earlier provenance. Ditches F4282 and F4258 may be considered part of a larger system of 18th and 19th century agricultural boundaries which extended across the local landscape.

Feature	**Contexts**	**Description**	**Average dimensions (m)**	**Colour of fill**	**Composition**	**Finds**	**C14 date (95.4% probability) cal BC**
F4258 (same as F4264)	4257, 4258	Post-Medieval NW-SE aligned boundary ditch	0.96 x 1.41 x 0.2	Grey-brown	Silty-loam	18th century pottery fragment	

F4263 (same as F4283)	4262, 4263	Post-Medieval boundary ditch running alongside modern site boundary fence	0.98 x 0.36 x 0.29	Grey-brown	Silty-loam		
F4264 (same as F4258)	4264, 4265	Post-Medieval NW-SE aligned boundary ditch	0.58 x 1.2 x 0.18	Grey-brown	Silty-loam		
F4283 (same as F4263).	4282, 4283	Post-Medieval boundary ditch running alongside modern site boundary fence	1.96 x 1.04 x 0.36	Grey-brown	Silty loam		
F4294	4293, 4294	Post-Medieval NW-SE aligned boundary ditch	0.92 x 0.57 x 0.27	Grey-brown	Silty loam		

Table 5. Post-Medieval boundary ditches.

Modern

4.18 Four modern sheep burials were excavated during Phase 10 (Table 6, Figure 29, Figure 32, and Figure 47). These were very similar to animal burials seen in previous phases and are discussed in Section 7 - Osteological Analysis of Animal Bone.

Feature	Contexts	Description	Average dimensions (m)	Colour of fill	Composition	Finds	C14 date (95.4% probability) cal BC
F4220	4220, 4221, 4222	Modern sheep burial	0.83 x 0.34 x 0.2	Dark grey-brown	Sandy loam	Sheep skeleton	
F4233	4231, 4232, 4233	Modern sheep burial	0.77 x 0.36 x 0.2	Dark grey-brown	Sandy loam	Sheep skeleton	
F4238	4236, 4237, 4238	Modern sheep burial	0.28 x 0.46 x 0.15	Dark grey-brown	Sandy loam	Sheep skeleton	
F4288	4286, 4287, 4288	Modern sheep burial	0.89 x 0.5 x 0.3	Dark grey-brown	Sandy loam	Sheep skeleton	

Table 6. Modern animal burials.

Undated features

Undated pits

4.19 A total of three undated pits (F4219, F4224, 4235 and F4339) were excavated across the stripped area during Phase 10. Pits F4219 and F4224 lay in the southern portion of the site and although they produced no finds they were similar in form to the pits in Pit Clusters 1 – 3 and may tentatively be considered to be Neolithic in date. Pit F4286 lay at the northern portion of the site, approximately 35m south-west of post-medieval ditch F4282. No date is ascribed to this feature. Collectively the pits averaged 0.67m in diameter, 0.23m in depth and displayed concave sides and rounded, uneven bases.

Feature	Context	Description	Average dimensions (m)	Colour of fill	Composition	Finds	C14 date (95.4% probability) cal BC
F4219	4218, 4219	Pit	0.90 x 0.79 x 0.12	Grey-brown	Sandy silt		
F4224	4223, 4224	Pit	0.5 x 0.5 x 0.2	Mid grey/brown	Sandy silt		
F4235	4235, 4234	Pit	0.4 x 0.44 x 0.3	Grey-brown	Sandy-silt		
F4339	4338, 4339	Pit	0.89 x 0.5 x 0.3	Grey-brown	Sandy silt		

Table 7. Undated pits.

5 RADIOCARBON DATING

5.1 A total of six radiocarbon dates were obtained from samples excavated during Phase 10.

The samples consisted of:

- Charred domestic wheat grain from 'midden' pit fills (4243), (4256) and (4272).
- A charred hazelnut shell from the fill (4292) of a posthole in Post-Built Building 33.
- Charred hazel fragments from the fill (4298) of a posthole in Post-Built Building 33.
- Charred birch fragments from the fill (4304) of a posthole in Post-Built Building 33.

Feature	Context	Sample	Lab No.	RC Age (BP)	$\delta^{13}C$ ($^0/_{00}$)	Calibrated date range cal BC (95.4% probability)	Calibrated date range cal BC (68.2% probability)
F4304, posthole from Post-Built Building 33	4304	Charred birch	SUERC-81234	4994 ± 24	-23.7	3914 - 3704	3793 - 3713
F4242, shallow pit with Carinated Bowl	4243	Charred emmer wheat grain	SUERC-81491	4991 ± 31	-25	3936-3695	3792 - 3712
F4256, internal 'midden' pit within PBB 33	4256	Charred emmer wheat grain	SUERC-81492	4968 ± 31	-25.6	3893 – 3659	3776 - 3706
F4292, 'midden' pit	4292	Charred hazelnut	SUERC-81236	4951 ± 21	-26.3	3777 - 3661	3766 - 3696
F4273, 'midden' Pit with Neolithic pot sherds and a quern stone	4272	Charred emmer wheat grain	SUERC-81626	4949 ± 28	-25.3	3783 – 3657	3766 - 3672
F4298, posthole from Post-Built Building 33	4298	Charred Hazel	SUERC-81233	4922 ± 24	-27.8	3763 - 3649	3705 - 3661

Table 8. Radiocarbon dating results.

5.2 The samples obtained from both the pits and postholes produced dates that are consistent with Early Neolithic activity. Furthermore, the dates obtained from the postholes of Post-Built Building 33 indicate that the structure excavated during Phase 10 may be reliably interpreted as the northernmost Early Neolithic house excavated in England prior to date of publication. Similarly, these six dates, when added to the dates

previously obtained from Cheviot Quarry, strengthens the evidence for occupation of the Milfield Basin during the Early Neolithic.

6 PALAEOENVIRONMENTAL ASSESSMENT

Luke Parker

Introduction

6.1 Palaeoenvironmental analysis was undertaken on samples taken from the fills of pits and postholes associated with an Early Neolithic 'house' (PBB 33), uncovered during the Phase 10 excavations at Cheviot Quarry. These features were dated to the Early Neolithic period based on the presence of diagnostic ceramics, including a substantial quantity of Carinated Bowl fragments, from their fills. There were also three further clusters of what have been identified as Early Neolithic waste disposal/'midden' pits.

6.2 40L of fill from each archaeological feature was sampled where possible, unless the feature contained less than 40L whereupon the entirety of the excavated fill was sampled.

Method

6.3 Bulk samples were processed via water flotation through graduated sieves with the smallest being 300 µm. Flots were weighed, air dried, and scanned using a low-power binocular microscope (x40). The entirety of the flots were dry-sieved through 5mm, 1mm and 500µm sieves in order to separate into three size fractions which were then scanned and separated out into charcoal and plant macrofossils.

6.4 Where possible up to twenty identifications were made per sample; half from the >5mm size fraction and half from the 1-5 mm size fraction. Ten pieces of charcoal were selected randomly from each sieve. Charcoal with a size of >2mm was fractured to obtain clean sections on the tangential, transverse, and radial planes. These could then be identified using a high power Leica GXML3030 binocular microscope (up to x600). Species identification was undertaken using plates and guides from Scoch *et al*. (2004) as well as comparison with a modern reference library held by ARS Ltd.

6.5 Plant macrofossil identification was undertaken using a low-power binocular microscope (x40). Plant macrofossil identification utilised plates and guides from Martin and Barkley (2000) and Cappers *et al.* (2006). Plant macrofossil nomenclature follows Stace (1997). Cereal identification utilised the guide by Jacomet (2006). All plant macrofossils present were assessed. Non-charred macrofossils were discounted as being modern contamination and were excluded from this analysis.

Results

6.6 Samples which yielded palaeoenvironmental material are shown in Tables 14-18, Appendix III.

6.7 The quality of preservation of the palaeoenvironmental remains was on the whole fairly poor. Charcoal, though relatively ubiquitous in archaeological features, was often highly fragmented. This is probably due to the significant age of the material creating weakness in the charred wood structure leading to vulnerability during sample processing, despite great care being taken. Charred botanical macrofossils were also

poorly preserved as a consequence of pre-depositional processes. Hazelnut fragments were in good condition, however cereal grains and wild seeds had been badly affected by fire damage during the charring process.

6.8 Post Built Building 33 contained a limited palaeoenvironmental assemblage, in comparison with that from the waste pit clusters, and comprised mostly low concentrations of highly fragmented charcoal from deciduous woodland trees. Exceptions to this were fill (4247) of small pit [4246] at the north-west edge of PBB33, and the upper fill (4256) of pit [4254] in the centre of PBB 33.

6.9 The fill (4247) of a small internal pit [4246], contained a large concentration of roundwood charcoal from a variety of deciduous woodland tree species. Of these, eight fragments were hazel (*Corylus avellana L.*), six were oak (*Quercus sp.*), three were elder (*Sambucus nigra*), two were birch (*Betula sp.*), and one was alder (*Alnus* cf. *glutinosa Gaertn*.). Pit [4254] also yielded a botanical macrofossil assemblage of hazelnut shell fragments, as well as 78 emmer wheat (*Tritcum dicoccum*) grains, 13 indeterminate cereal grains (inferred to be emmer wheat due to the lack of alternative cereal species found on site), a rosehip (*Rosa majalis*) stone, a cleaver (*Galium aperine*) seed, and what was tentatively identified as being an ivy leaved speedwell (*Veronica hederifolia*) seed (Figure 34). The upper fill (4256) of pit [4254] also contained 21 emmer wheat grains, alongside a smaller quantity of hazelnut fragments. Single emmer wheat grains were also recovered from posthole fill (4311), as well as pit fill (4252) and a spot sample from pit fill (4275). The cereal grains were hulled wheat grains which, despite the fairly high degree of fire damage, generally possessed clear dorsal 'humps', characteristic of emmer wheat. The charcoal assemblage of the upper fill (4256) of pit [4245] was predominantly oak, with a single roundwood fragment of hazel, and a single fragment of elder charcoal.

6.10 Five waste pits ([4223], [4227], [4229], [4239], [4241]) which lay within 10m of PBB 33 (Table 15), contained fills with recoverable charred remains. The fill (4226) of waste pit [4225] yielded remains which were less fragmented than the fills of the four other waste pits and this enabled a greater number of identifications. The identified charcoal included two fragments of alder roundwood, four fragments of hazel roundwood, and two fragments of oak roundwood. A single hazelnut shell and seven emmer wheat grains were also recovered from fill (4226).

6.11 The charred material from pit fills (4245), (4320), (4325), (4328), and (4329) was more badly fragmented. The upper fill (4329) of pit [4327] contained a badly fragmented charcoal assemblage of 20.01g, out of which only five mature hazel heartwood fragments could be identified. The lower fill (4328) of the same pit [4327] provided a small and highly fragmented assemblage of which only two oak fragments were identified. The fill (4245) of pit [4244] contained a small charcoal assemblage of 3.03g, within which there were fifteen identifiable fragments of oak charcoal, and two fragments of hazel charcoal. The pit fill (4320) contained a very small (0.21g), badly fragmented assemblage of indeterminate charred material.

6.12 Pit cluster 1 comprised five pits ([4223], [4227], [4229], [4239], and [4241]), from which fills (4224), (4228), (4230), (4240), (4242), and (4243) yielded charred

palaeoenvironmental remains (Table 16). Waste pit fill (4228) contained a badly fragmented charcoal assemblage, of which two hazel, four oak, and one birch fragments were identified. Within this assemblage were also three hazelnut shell fragments, and a single emmer wheat grain. Waste pit [4229] contained a fill (4230) which yielded a moderately sized (11.00g) assemblage of charcoal, of which six fragments were oak (two roundwood), and eleven were *Maloideae* roundwood fragments. 0.23g of hazelnut shell and two emmer wheat grains were also present within the palaeoenvironmental assemblage of pit fill (4230). A total weight of 47.56g of charred material was recovered from fill (4240), of which two fragments of hazel heartwood, two fragments of oak heartwood, and three fragments of birch heartwood were identified. A single hazelnut shell fragment was also recovered from this fill (4240). The upper (4242) and lower (4243) fills of waste pit [4241] yielded charred palaeoenvironmental remains. The upper fill (4242) contained 21.10g of charred material, from which one alder, one willow, and four oak charcoal fragments were identified. These charcoal fragments were large and had rings with little curvature, indicative of relatively mature, large trees. Cereal grains were present in the upper fill (4242) in the form of two emmer wheat grains, and three indeterminate cereal grains. Within the lower fill (4243) of waste pit [4241], a smaller charred assemblage (9.55g) was recovered, from which one hazel, two oak, one elder, and one roundwood field maple fragments were identified. Within this assemblage, one seed which was tentatively identified as ivy leaved speedwell (Veronica hederifolia) was recovered, alongside a single emmer wheat grain. The fill (4224) of pit [4223] contained a small (0.73g) assemblage of indeterminate heavily-fragmented charcoal.

6.13 A second, larger pit and posthole cluster was located at the eastern area of the site (identified as Pit Cluster 2). The fills of the pits and postholes within this cluster (see Table 17) contained varied charcoal assemblages. Other than the fill (4281) of pit [4280], which had a very small, poorly preserved, assemblage of mostly indeterminate charred material, all charcoal assemblages from Pit Cluster 2 contained at least two different species of mostly roundwood charcoal. Alder, willow, hazel, oak, elder, birch, and *Maloideae* were all present in these features with hazel, oak, and elder being most prominent. All of these wood species (apart from alder) were present in the charcoal assemblage of the fill (4270) of pit [4269], along with 0.66g of hazelnut shell, twelve emmer wheat grains, six indeterminate cereal grains, and one harebell seed. The upper fill (4273) of pit [4271] contained roundwood fragments of oak, hazel, elder, birch, and *Maloideae*, as well as 0.55g of hazelnut shell and thirteen emmer wheat grains. The lower fill (4272) of the same pit [4271] contained 0.20g of hazelnut shell, nine emmer wheat grains, and nine indeterminate cereal grains. This lower fill (4272) also contained a charcoal assemblage from which eighteen hazel fragments and two oak fragments were identified, alongside numerous small indeterminate charred twigs. The upper (4260) and lower (4261) fills of pit [4259] both contained oak and hazel charcoal, with the lower (4261) containing badly-fragmented charcoal of indeterminate ring-widths and the upper fill (4260) retaining mature heartwood fragments. Pit [4266] contained an upper fill (4267) which yielded a moderately sized charcoal assemblage of which thirteen fragments were identified as hazel roundwood, four oak roundwood, and three elder roundwood. There were also three large fragments which were identified as Maloideae that had very little ring-curvature suggesting a relatively long-lived, mature

tree of some size. The fill (4331) of posthole [4330] contained twelve hazel, six alder, and two elder roundwood charcoal fragments, along with a single fragment of hazelnut shell, three cleaver seeds, and two emmer wheat grains. The fill (4333) of pit [4332] contained ten hazel roundwood fragments, as well as ten oak fragments, of which four were roundwood. This pit fill (4333) also contained 0.79g of hazelnut shell and two emmer wheat grains.

Discussion

6.14 The palaeoenvironmental remains recovered from PBB 33 were predominantly from the fill (4247) of a small pit [4246] located at what is interpreted as the north-western margin of PBB 33 and the upper fill (4256) of posthole [4254] in the centre of PB33. Pit fill (4247) contained by far the largest palaeoenvironmental assemblage recovered during excavation. The large quantity of charred emmer wheat is suggestive of corn drying occurring within PBB 33. What little charred material was recovered from the postholes of PBB 33 was likely the result of unintentional deposition into gaps between the posts and postholes. Emmer wheat is a specie of cereal which was cultivated in Britain prior to the mid-Iron Age (van der Veen 1992) and was the dominant wheat grown during the Neolithic. The charred hazelnut shell fragments are indicative of gathering practices, where hazelnuts supplement the cereal-based diet.

6.15 The proximity of Pit Cluster 1 to PBB 33 suggests they may have been directly associated with the occupation of the building and are interpreted as being domestic waste disposal pits used by the inhabitants of the building.

6.16 Pit Cluster 2 represents the largest cluster of pits and contained the largest assemblages of charcoal. The assemblages from Pit Cluster 2 (see Table 17) contain charcoal remains of a variety of different species, ring-widths, and preservation qualities. The lack of evidence for in-situ burning indicates that the charcoal was produced elsewhere before being deposited within these pits.

6.17 The palaeoenvironmental assemblages in Pit Cluster 1 (see Table 16) are similar to those of Pit Cluster 2 (see Table 17), with a mix of roundwood and heartwood fragments from a variety of different tree species, specifically, hazel, oak, elder, field maple, birch, and Maloideae. Pit Clusters 1 and 2 are within relatively close proximity to the Neolithic house. This proximity, as well as the similar contents within the palaeoenvironmental assemblages suggests that these pit clusters may have been created by the inhabitants of the building to dispose of domestic waste. Pit Cluster 3, however is a greater distance away at the north eastern limit of excavation.

7 OSTEOLOGICAL ANALYSIS OF ANIMAL BONE

Milena Grzybowska

Material

7.1 The animal bone assemblage comprised four partial skeletons (ABGs) recovered from pits F4222, F4233, F4238 and F4288 (Figure 29, Figure 32 and Figure 47).

Methods

7.2 The analysis follows Animal bones and Archaeology: Guidelines for best practice, developed by English Heritage (Baker and Worley, 2013). Aging was attempted based on stage of bone fusion (Zeder 2002) and tooth eruption and wear (Payne 1973, 1987). The state of preservation was scored using a four-stage system (excellent, good, moderate and poor). Butchery marks, root etching and pathological changes were noted when present and the measurements of skeletally mature specimens followed Von den Driesch (1976).

Results

7.3 Surface preservation was rated overall as good. No butchery marks or gnawing was observed on any of the specimens. A full inventory of the animal bone is presented in Table 19. Animal bone from context (4220) contained the skeleton of a sheep, comprising hind limbs and a portion of rib cage. The skeleton within pit F4233 included skull, vertebral column, pelvis, front limbs, and a hind leg of a sheep. Animal bone from context (4237) comprised the lower vertebral column, pelvic area and proximal portions of the hind limbs of a sheep, whereas the sheep skeleton deposited within pit F4288 included a fairly complete rib cage, with right and left scapulae, right front limb, pelvis, right hind limb and a left femur. Measurements were taken on skeletally mature elements of individuals from pits F4233, F4238 and F4288.

Conclusions

7.4 The surface preservation of animal bone was good with a proportion of epiphyses showing erosion. Each pit contained a single incompletely preserved skeleton of a sheep. Pit F4420 contained the remains of an infant/juvenile, pit 4431 of a juvenile, pit F4288 of a subadult, whereas pit F4238 of a subadult/adult. On the basis of the measurements of the elements recovered from contexts (4237) and (4287) it could be concluded that the sheep skeletons represent post-medieval/modern individuals of improved local sheep. No further analysis is recommended.

8 CERAMIC FINDS ANALYSIS

David Cockcroft and Clive Waddington

Introduction

8.1 The corpus of ceramic material recovered from the Phase 10 excavation at Cheviot Quarry during 2018 comprised an assemblage of Early Neolithic pottery numbering approximately 84 sherds in total (excluding crumbs and tiny sherds), with a combined weight of just over 3.42 kg. It represents a minimum of 41 vessels of classic Early Neolithic Carinated Bowl (including Plain Wares) based upon consideration of their distinctive form and fabric. They were all recovered from pit features found in clusters across the Phase 10 excavation area, including those from within the centre of a rectangular post-built 'house'.

8.2 The assemblage complements the Neolithic assemblages previously recovered from Lanton/Cheviot Quarry and adds further important evidence for Early Neolithic occupation across the wider site. This assemblage has particular relevance given that much of it was found within the first rectangular Neolithic 'house' found this far north in England. It also compares directly with assemblages recovered from nearby sites such as those from the original Cheviot Quarry (also known as 'Woodbridge') (Johnson and Waddington 2008), the Coupland enclosure/henge (Waddington 2011; 2012) and Thirlings (Miket et al. 2008). This Lanton/Cheviot Quarry assemblage now forms the single largest assemblage of Early Neolithic pottery from northern England and will be crucial in devising the typochronology for this, the very first ceramic tradition to be used throughout Britain. In this respect it forms a significant addition to the local, regional and national Neolithic pottery sequence.

Method Statement

8.3 The sherds were gently finger-washed in cold water and then left to air dry. Once they had dried the remaining soil was gently brushed off with a sable shaving brush. The sherds were laid out according to context and then by fabric group and individual vessels. The pottery was examined macroscopically with the aid of a x10 hand lens. No microscopic analysis was undertaken. Joining sherds were refitted using HMG adhesive.

Catalogue

8.4 A catalogue describing each identified vessel by ceramic type is presented below.

Carinated Bowl/Plain Wares

Vessel Number	Small Find Number	Context Number	Description	Weight (grams)
148	1876	4230	Two small rim sherds from a Carinated Bowl with flaring everted and rolled-over rim. Hard, evenly fired fabric, mid brown-grey in colour. Highly burnished.. Contains crushed red sandstone inclusions up to 4mm across occasionally erupting on inner surfaces. Wall thickness 8mm.	26.6
149	1876	4230	Four crumbs from a Carinated Bowl. Highly burnished, evenly fired hard fabric dark grey containing fine crushed stone inclusions up to 2mm. Wall thickness 5-6 mm.	10.3
150	1878	4240	Three body sherds and a crumb from a Carinated Bowl. Pale red-brown coarse fabric with a burnished dark brown-grey outer surface. Charred residue adhering to outer surface. Light grey crushed limestone inclusions up to 4mm across which are occasionally visible on the surface. Wall thickness 8mm.	59.7
151	1878	4240	Two crumbs from an Early Neolithic vessel. Hard yellowish-brown fabric with a burnished mid brown-grey outer surface. Contains very fine crushed stone inclusions up to 1mm across. Wall thickness 9mm.	18.4
152	1880	4243	Two body sherds from an Early Neolithic vessel. Hard, dark grey coarse fabric with a pale red-brown outer surface and containing crushed stone inclusions up to 5mm across which occasionally erupt at surface. Wall thickness 9-10mm.	26.2
153	1880	4243	Two body sherds from a carinated vessel. Hard, course brown-yellow fabric with a buff-brown surface and containing crushed stone inclusions up to 5mm across. Wall thickness 19mm.	117.0

Vessel Number	Small Find Number	Context Number	Description	Weight (grams)
154	1880	4243	Two body sherds from a carinated vessel. Hard, brown-grey fabric with a pale red-brown outer surface. Charred residue adhering to outer surface. Crushed stone inclusions up to 4mm across which occasionally erupt at surface. Wall thickness 9mm.	60.7
155	1880	4243	Sixteen sherds of which many conjoin, from a substantial well-made Carinated Bowl with everted and rolled over rim and an internal diameter of 37cm, the carination being low on the pot's belly. It has a well-fired fabric with crushed stone inclusions up to 4mm across. It is highly burnished and varies in colour on its surfaces from dark grey and brown to red-brown. Wall thickness averages 14mm.	945.5
156	1880	4243	Single sherd from an Early Neolithic vessel. Hard fabric, dark grey inner surface with red-brown outer surface. Fabric contains prepared crushed stone inclusions up to 7mm across. Wall thickness 12mm.	84.1
157	1880	4243	Single sherd from an Early Neolithic vessel. Hard fabric, dark grey inner surface with red-brown outer surface. Fabric contains prepared crushed stone inclusions up to 4mm across which occasionally erupt at surface. Wall thickness 11mm.	31.8
158	1881	4249	Two small rim and one body sherds from a Carinated Bowl with flaring everted rim. Hard dark grey well-fired fabric and black on the outer surface. Contains fine crushed stone inclusions up to 1mm. Wall thickness 10mm.	26.5
159	1881	4249	Three body sherds from an Early Neolithic vessel. Hard, course black fabric with a very dark grey, burnished surface and contains crushed sandstone inclusions up to 2mm across. Wall thickness 6mm.	11.2

Vessel Number	Small Find Number	Context Number	Description	Weight (grams)
160	1881	4249	Single sherd from an Early Neolithic vessel. Hard fabric, dark grey inner surface with dark brown-grey outer surface. Fabric contains prepared crushed stone inclusions up to 3mm across. Wall thickness 11-16mm.	18.8
161	1881	4249	Single sherd from an Early Neolithic vessel. Hard fabric, dark grey inner surface with pale brown outer surface. Fabric contains prepared crushed stone inclusions up to 7mm across which occasionally erupt at surface. Wall thickness 10mm.	12.8
162	1881	4249	Single sherd and crumb from an Early Neolithic vessel. Hard fabric, mid brown-grey burnished inner surface with mid grey-brown outer surface. Fabric contains fine crushed stone inclusions up to 1mm across. Wall thickness 11mm.	11.2
163	1881	4249	Single sherd from an Early Neolithic vessel. Hard fabric, black inner surface with red-brown outer surface. Fabric contains finely crushed stone inclusions up to 1mm across. Wall thickness 7mm.	7.8
164	1882	4250	One small rim and two body sherds from a Carinated Bowl with flaring everted and rolled-over rim. Hard black burnished fabric and red-brown on the outer surface. Contains crushed stone inclusions up to 3mm which occasionally erupt at surface. Wall thickness 9mm.	93.3
165	1885	4260	Single sherd and three crumbs from an Early Neolithic rounded vessel made from a hard evenly fired dark brown-grey fabric containing crushed stone inclusions up to 5mm across. Wall thickness 11mm.	33.1
166	1886	4261	Two sherds from a well fired hard fabric Early Neolithic vessel. Dark black-brown fabric throughout, evenly fired and with light grey prepared angular crushed limestone inclusions up to 5mm across which occasionally erupt at surface. Wall thickness 6mm.	21.4

Vessel Number	Small Find Number	Context Number	Description	Weight (grams)
167	1888	4270	Two rim and three body sherds from a Carinated Bowl with everted and rolled over rim, and an internal diameter of 41cm - the rim sherds conjoin. Hard brown-grey fabric with a red-brown burnished outer surface that gives it a different pale brown colour. Contains angular stone inclusions up to 3mm across that occasionally erupt on the outer surface. Wall thickness 10mm.	207.9
168	1888	4270	Single rim and a single body sherds from a Carinated Bowl with everted rim, and an internal diameter of 28cm. Hard grey fabric with a red-brown burnished outer surface that gives it a different pale brown colour. Contains angular stone inclusions up to 3mm across that occasionally erupt on the outer surface. Wall thickness 10mm.	74.9
169	1888	4270	Single sherd and three crumbs from an Early Neolithic rounded vessel with a hard evenly fired dark brown-grey fabric containing crushed stone inclusions up to 6mm across. Wall thickness 15mm.	182.6
170	1888	4270	Single rim sherd from a Carinated Bowl with everted rim, and an internal diameter of 30cm. Coarse, uneven grey fabric with a rough greenish brown outer surface and dark brownish grey inner surface. Contains prominent angular stone inclusions up to 6mm across that occasionally erupt on the outer surface giving it an unusually rough appearance compared to the highly burnished Carinated Bowl ceramics typical of this region. Wall thickness 15mm. This is a very unusual fabric and the first time it has been encountered in the region. It is highly distinctive and has clearly been made from a different clay source and with different crushed stone inclusions than the typical locally-produced material.	99.2

Vessel Number	Small Find Number	Context Number	Description	Weight (grams)
171	1890	4272	Single small body sherd from Early Neolithic vessel with hard evenly fired dark grey fabric and with outer brown-black surface. Prepared crushed stone inclusions up to 3mm across. Wall thickness 5mm.	7.2
172	1890	4272	Four crumbs from an Early Neolithic vessel. Evenly fired, hard fabric grey-brown in colour containing fine crushed stone inclusions up to 3mm across. Wall thickness 9 mm.	14.5
173	1890	4272	Single sherd and crumb from a carinated vessel. Hard fabric, very dark grey inner surface with mid grey-brown outer surface. Fabric contains fine crushed stone inclusions up to 5mm across. Wall thickness 10mm.	54.6
174	1890	4272	Single rim sherd and a crumb from a Carinated Bowl with everted rim, giving an internal rim diameter of 22cm. Hard dark grey rough fabric with a dark brown-grey outer surface and brown-grey-internal surface. Charred residue adhering to outer surface. Contains angular stone inclusions up to 4mm across that occasionally erupt on the outer surface. Wall thickness 9mm.	119.09
175	1890	4272	Single small rim sherd from a Carinated Bowl with everted rim. Hard, evenly fired red-grey fabric. Contains fine stone inclusions up to 3mm across. Wall thickness 12mm.	15.8
176	1890	4272	Single body sherd and three crumbs from an Early Neolithic vessel. Hard, evenly fired red-grey fabric. Contains fine stone inclusions up to 4mm across. Wall thickness 10mm.	19.8
177	1890	4272	Nine sherds and nine crumbs of which many conjoin, from a substantial Carinated Bowl with an uneven, everted and rolled over rim and an internal diameter of 65cm. It has a well-fired fabric with crushed stone inclusions up to 3mm across. It varies in colour on its surfaces from dark grey to red-grey. Wall thickness averages 9mm.	741.9

Vessel Number	Small Find Number	Context Number	Description	Weight (grams)
178	1891	4273	Single crumb from an Early Neolithic vessel. Hard, evenly fired red-grey fabric. No visible inclusions. Wall thickness 12mm.	2.5
179	1891	4273	Three sherds from a well-fired hard fabric Early Neolithic vessel. Hard dark grey fabric with light grey prepared angular crushed limestone inclusions up to 5mm across which occasionally erupt on the outer surface. Charred residue adhering to inner surface. Wall thickness 11mm.	37.2
180	1875	4275	Single body sherd and three crumbs from a Carinated Bowl. Hard dark grey coarse fabric with a light brown-grey outer surface. Contains angular stone inclusions up to 4mm across that occasionally erupt on the outer surface. Wall thickness 11mm.	24.1
181	1875	4275	Five sherds and five crumbs from a Carinated Bowl. It has a well-fired fabric, with a dark brown-grey burnished outer surface and grey internal surface with crushed stone inclusions up to 5mm across which occasionally erupt on the inner surface. Charred residue adhering to outer surface. Wall thickness averages 9mm.	71.5
182	1892	4279	Single body sherd from an Early Neolithic vessel. Hard grey coarse fabric with a pink-grey outer surface. Contains angular stone inclusions up to 6mm across that occasionally erupt on the outer surface. Wall thickness 11mm.	18.5
183	1892	4279	Single sherd and crumb from an Early Neolithic rounded vessel with a hard, evenly fired brown-grey fabric containing crushed stone inclusions up to 7mm across that occasionally erupt on the outer surface. Wall thickness 7mm.	12.1
184	1892	4279	Single body sherd from an Early Neolithic vessel. Hard grey fabric. Contains angular stone inclusions up to 4mm. Wall thickness 9mm.	17.0

Vessel Number	Small Find Number	Context Number	Description	Weight (grams)
185	1893	4292	Single sherd and six crumbs from an Early Neolithic rounded vessel with a hard coarse dark grey fabric, with a pink-grey burnished outer surface containing fine stone inclusions up to 2mm across. Charred residue adhering to both surfaces. Wall thickness 8mm.	17.4
186	1893	4292	Single sherd and crumb from an Early Neolithic rounded vessel with a hard, evenly fired grey fabric containing crushed stone inclusions up to 8mm. Wall thickness 15mm.	23.2
187	1894	4296	Single body sherd from an Early Neolithic vessel. Hard grey coarse fabric with a red-brown outer surface. Contains fine stone inclusions up to 3mm. Wall thickness 9mm.	41.5
188	1895	4306	Single rim crumb from a Carinated Bowl. Hard grey fabric with a red-brown outer surface and inner grey-brown surface. Contains fine stone inclusions up to 3mm across that occasionally erupt on the outer surface. Wall thickness 10mm.	5.6

Table 8. Catalogue of Carinated Bowl/Plain Ware.

Unattributable Material

Vessel Number	Small Find Number	Context Number	Description	Weight (grams)
Daub	1883	4256	One fragment and four small crumbs of daub, pale brown in colour and well-fired. One shows the curved moulding where it had been curved around a wooden stick/wattle.	38.5

Table 9. Catalogue of unattributable material.

8.5 Fragments of daub/fired clay from (4256) associated with the post-built Neolithic 'house' is an important discovery as it contributes to understanding the structural form of the Neolithic house. Other examples of daub from Neolithic structures have been found elsewhere on the Lanton site. The daub from (4256) still retains the impression of where it had been applied around a twig/wattle.

Fabric

8.6 This assemblage of Carinated Bowl and associated Plain Ware has four different fabrics present. The first is the typical hard and largely well-fired fabric containing angular crushed stone inclusions which can be of just one stone type or several, the most common being sandstone, and some occasional quartz, all of which is available within a few km radius of the site. The inclusions are generally well sorted and can be up to 7mm across and are evenly distributed throughout the fabric. The common practice of treating the external and sometimes internal surface by means of burnishing often masks the presence of the inclusions across the surface of the vessels although in some cases surfaces are less well smoothed and inclusions erupt.

8.7 The second fabric is very similar to the first except that the stone inclusions are carefully prepared crushed Old Red Sandstone which gives distinctive red flecks to the pot surfaces. This type of sandstone is found *c.*17 km to the north-east in the Lower Tweed valley and suggests groups coming to the Milfield Plain from this area, or perhaps exchanging materials or pots with groups resident further downriver.

8.8 The third fabric group is a rough fabric and has crushed limestone inclusions. This type of geology lies a few km to the north-west of the Milfield Plain and again suggests contact with neighbouring groups who either visited the Milfield area or who traded their ceramics, or alternatively that the groups residing in the Milfield Plain had a wide ambit of resource procurement. The colour of the clay used is also distinctive being a buff-brown colour.

8.9 The fourth fabric group is similar to the third, being fairly coarse and containing crushed angular limestone inclusions. The colour of the clay is distinctive being a green-grey tone and is unique amongst the Neolithic ceramics so far found in this region.

8.10 Surface colouration can vary considerably, even within a single vessel, as is usual with ceramics fired under a bonfire or pit clamp and repeatedly exposed to smoke discolouration, heat and differential oxygen supply. On the whole they tend to be dark grey, dark brown, grey and occasionally buff brown or a red-brown or with an orangey-brown surface. On the whole, the pottery is well fired and of high quality with a fairly even and uniform colouration throughout indicative of good control of the firing process.

Form

8.11 The term Carinated Bowls is here used generically to refer to the suite of Early Neolithic ceramics from his region that includes carinated forms as well as open forms, plain bowls and other assorted Plain Wares.

8.12 This assemblage of Carinated Bowl material is typical of the Northumberland tradition displaying an absence of decoration and executed in well-fired fabrics with a slipped or highly-burnished, or at least well-smoothed, external and also typically internal surface. Examples of un-shouldered simple bowls or cups are represented as well as open bowls and more substantial cooking vessels. In this regard the corpus aligns well with the material recovered from the previous phases at Lanton/Cheviot Quarry and similar assemblages elsewhere in the Milfield Basin, such as those from Cheviot

Quarry (Waddington in Johnson and Waddington 2008), Coupland (Passmore and Waddington 2009) and Thirlings (Miket et al. 2008).

8.13 The small size of sherds within this assemblage mean that none of the vessels are adequately represented to allow vessel reconstruction.

8.14 The small size of many of the sherds within this assemblage means that none of the vessels are adequately represented to allow full vessel reconstruction. This said, several vessels have sufficient surviving to allow for identification of large open bowls, a single small bowl with deep belly and upright rim and several carinated vessels with heavy rolled over rims with their carinations evidently low down on the vessel's belly. At least one vessel has an everted rim with a high shoulder. These are all typical forms of Carinated Bowls and Plain Ware and fit directly into the wider corpus of Early Neolithic ceramics from Northumberland, Scotland and northern Engalnd, as well as the wider assemblage recovered to date from the quarry.

Numbers

8.15 A total of 84 sherds was recovered which represents a minimum number of 41 vessels. The most productive context was (4243), an upper pit fill of a large 'midden' pit in Pit Cluster 1 with six vessels represented.

Discussion

8.16 The Early Neolithic material includes traditional Carinated Bowl and Plain Ware forms typical of other Early Neolithic settlement and pit sites across the sand and gravel terraces of the Milfield Plain. The surfaces are well-burnished and are entirely devoid of decoration. Several of the vessels have charred organic residue adhering to their surface indicating its use in the cooking process, typically occurring where food has boiled over and left residue on the outer surface. These vessels add to the wider corpus of Early Neolithic ceramics from across the site and are consistent with the storing, processing, cooking and consumption of food, and perhaps other processing activities, and can therefore be viewed as reflecting domestic occupation during the Early Neolithic. The association with the Early Neolithic 'house' is highly significant showing that broken ceramics and other food debris was deliberately buried within pits around the central hearth area within some of their buildings. This is consistent with the presence of waste pit clusters in the various triangular-shaped post-built Early Neolithic structures found elsewhere across the site and also at several other Neolithic sites in the region (Waddington 2011). The presence of the daub is important too as this provides important evidence for how the Early Neolithic post-built building was constructed and how other examples would have looked. Daub has been found associated with other Neolithic post-built structures and pits across the site.

8.17 The need for understanding the typochronology of this classic ceramic tradition is important and forms a priority in the North East archaeological Regional Research Agenda (Petts and Gerard 2006).

9 LITHICS ASSESSMENT

Clive Waddington

Factual Data

Quantity

9.1 A total of two chipped flints were recovered from the 2018 excavation at Cheviot Quarry (Figure 33).

Provenance

9.2 Table 12 below lists the feature numbers/contexts from which the material was recovered.

Context No	Find No.	Context Type	No. Lithics	Lithic Types Present	Other asstns.	Period
4243	1879	Mixed 'midden' deposit in pit F4242	1	Broken Thumbnail Scraper	Carinated Bowl	Neo
4270	1889	Mixed 'midden' deposit in pit F4270	1	Broken flake	Plain Ware	Neo

Table 10. Lithic counts by context.

Dating

9.3 The presence of burnt lithics supports the evidence for burnt debris being deposited in the various Neolithic waste pits across the site. The scraper is indicative of processing activities such as the scraping of skins. As the flints are burnt it is not possible to understand the origin of the raw material and where it was procured from. Being broken neither of the flints had measurements taken in line with recording conventions.

Condition

9.4 None of the pieces show fresh breaks and therefore the broken pieces have been broken in antiquity prior to discard. The flints are both heavily burnt.

Primary Sources and Documentation

9.5 There are no primary sources or documentation that might enhance the study of this collection.

Means of Collecting the Data

9.6 The lithics were excavated from the ground using hand tools (trowels and small tools) and retrieved from sieves with a 10mm^2 mesh. Each lithic was washed in tap water and gently cleaned with a toothbrush before being left to air dry. Each lithic was placed in an individual plastic bag that was labelled with a unique small find number and the context number.

9.7 For the assessment and analysis the lithics were un-bagged and laid out on tables and grouped by context. Lithic counts were recorded and an examination made of all pieces. The lithics were then re-bagged and packed, by context, into a sturdy plastic storage box.

Statement of Potential

Value of the Data

9.8 This assemblage of material is very small on its own but combined with the lithic material from earlier excavations on this site it has the potential to advance the regional research agenda and understand more, specifically, about Neolithic lithic production, use and significance in the region. The flint knife, although burnt, is a fine specimen and adds to some of the other excellent examples of Neolithic flintwork from this site.

Integration of Study with Other Research

9.9 The study of this assemblage could be enhanced through acquisition of radiocarbon dates on material from the same context to assist with dating the flint sequence in the region, and by comparison with the dates, styles and circumstances of discard with Neolithic assemblages from previous excavations at Cheviot Quarry (see previous Phase reports), the nearby sites of Cheviot Quarry (Johnson and Waddington 2008), Thirlings (Miket et al. 2008), Bolam Lake (Waddington and Davies 2002) and elsewhere (e.g. Harding 1981; Miket 1976; 1981; 1985; Passmore and Waddington 2012).

Archive Requirements

Storage and Curation

9.10 The lithics are currently contained in sealed and labelled plastic bags. Lithics from the same context are all bagged in a context specific bag. These bags are stored in a sturdy plastic storage box with other lithics from Cheviot Quarry.

Retention and Discard Policy

9.11 It is recommended that all of this collection is kept for future study.

10 OVERALL DISCUSSION

10.1 The archaeological material revealed during the Phase 10 excavations at Cheviot Quarry has demonstrated multiple phases of activity dating from the prehistoric to the modern period but overwhelmingly represented by features associated with Early Neolithic occupation around the 38th century cal BC. The significant discovery of a rare Early Neolithic 'house' together with additional pit clusters, palaeoenvironmental material and a ceramic assemblage helps to further our knowledge of Neolithic settlement in Northumberland and complements the growing body of evidence suggesting that Neolithic immigrant farmers were using the riverine routeways of the county to exploit the fertile gravel terraces bordering the valley floors.

10.2 The Early Neolithic evidence was characterised by three pit clusters (PC1, PC2 and PC3) and a rectangular building (PBB 33) which was located within the northern portion of the stripped area. The building is especially notable as it complements pre-existing Early Neolithic structural evidence revealed during Phases 1, 2 and 9 at Cheviot Quarry as well as other local examples from Bolam lake (Waddington and Davies 2002), Thirlings (Miket *et al.* 2008) and Whitton Park (Waddington 2005). More specifically PBB 33 is a rare example of a large rectangular structure of which only a handful are known across the British Isles and are considered pivotal to understanding the nature of the British Early Neolithic period.

10.3 Post-built Building 33 was broadly defined by two parallel rows of postholes which bordered an internal area measuring approximately 75m^2 .The layout of the postholes suggests that PBB 33 was gable ended with a roof structure probably supported by longitudinal purlins (Figure 49). This pattern was consistent with other examples of Early Neolithic structure, such as those at Horton, Berkshire (Barclay *et al*. forthcoming) and Building 2 at Lismore Fields, Derbyshire (Garton 1991). It is also worth noting that the roof of a comparable Early Neolithic building at Claish Farm, Stirling, was considered to have been thatched and it seems reasonable to assume that PBB 33 was similarly constructed (Barclay 2002). Additionally, the presence of daub fragments within the fill of pit F4256 suggests that the walls of the Cheviot Quarry structure were probably constructed using wattle and daub (see also Kenney 2008) (Figure 49).

10.4 The interior of PBB 33 was focused upon a centre-post (F4252) and a spread of heat affected natural gravel (4309) which contained frequent fragments of burnt stone. Whilst deposit (4309) was not interpreted as a floor surface or occupation layer the scorching of the natural gravels suggested repeated exposure to extreme heat and thus indicates the location of a hearth of some sort in the western portion of PBB 33. The densest concentration of heat-affected material was located west of centre-post F4252 and could indicate that PBB 33 was divided into eastern and western compartments, potentially separated by a light timber partition. The presence of three 'midden' pits (F4254/F4274/F4276) containing pottery fragments (F4254), burnt emmer wheat grains (F4254) and fragments of daub (F4274) could indicate that the eastern compartment was used for storage and processing activities, whilst the western portion of the building's interior, containing the proposed hearth, was used as a living and sleeping area. This interpretation is supported by the identification of internal partition walls in comparable Early Neolithic structures at Horton and Lismore Fields which were

considered likely to demarcate separate internal spaces for storage, communal living areas and sleeping quarters (Moore 2003). No entrance to PBB 33 was identified during the excavation however, a trend favouring the insertion of doorways through the west wall of similar Early Neolithic structures has been identified throughout Britain and Ireland (Kenney 2008). Given that the hearth and communal living quarters were probably situated in the western portion of PBB 33 it seems reasonable to assume that access into the Cheviot Quarry house may have also been similarly located in the west wall (Figure 49).

10.5 The western exterior of the Neolithic house was bordered by two pairs of inter-cutting pits (F4318/F4320 and F4325/F4328). Although the absence of diagnostic datable evidence precludes ascribing a definitive date to exterior pits F4318/F4320 and F4325/F4328, their spatial relationship with the Neolithic house suggests that these pits were created whilst the structure was occupied and may suggest that the building's occupants used the location as a domestic waste disposal area. Similarly, the large, sub-oval pit (F4250) located immediately south of the eastern portion of the house was interpreted as a 'midden' pit associated with the deposition of waste material from a hearth likely to have been located within the building's interior.

10.6 The large quantities of charred grain, fragments of Early Neolithic Carinated Bowl, the presence of heat affected deposit (4309), and the structure's comparable form with other similar buildings in England probably reflected the function of PBB 33 as an Early Neolithic 'house'. Early Neolithic rectangular buildings rarely produce many finds and the dearth of material culture has been cited as evidence that structures such as PBB 33 were only used for short term occupation or non-domestic use (Kenney 2008). However, the relatively large number of finds and high concentration of palaeoenvironmental evidence may indicate that the structure was occupied on a long-term basis and probably formed part of an Early Neolithic sedentary agricultural settlement.

10.7 Pit Clusters 1, 2 and 3 were interpreted as ''midden'' pits associated with the disposal of waste produced by localised Early Neolithic settlement activity. The depositional sequence displayed by the pits suggests that the 'midden' material was dumped into the pit and then immediately sealed by the pit's upcast comprising a mix of soil and sand and gravel. The opening and filling of the pits were considered to be very rapid and not part of a sequence of dumping events which took place over a prolonged period of time. Additionally, the recovery of numerous charred cereal grain fragments from pits F4230, F4242, F4253, F4261, F4270 and F4273, within Pit Clusters 1 and 2, coupled with the recovery of a quernstone from pit F4250, also indicate cereal cultivation, harvesting and processing occurring in the vicinity of the settlement.

10.8 It is also worth noting that pits F4242, F4253, F4261 and F4270, from Pit Clusters 1 and 2, displayed near identical form to the pits located in the interior of PBB 33. Given the similarity in form between the various pits it is worth considering that Pit Cluster 1 and 2 may denote the location of other, smaller, lightweight buildings, whose structural remains have been obscured or destroyed by later agricultural activity.

10.9 The assemblage of ceramics and accompanying lithics found during Phase 10 continue to complement a nationally important assemblage that has accumulated at Cheviot Quarry. This assemblage provides a continuous ceramic sequence through the entire Neolithic and the significance of this has been described in previous reports. The discovery of a substantial rectangular Neolithic house makes the evidence for Early Neolithic settlement in Northumberland comparable with that from other parts of the country. However, when taken with the triangular post-built structures from elsewhere on the quarry and a circular early Neolithic building at nearby Thirlings, it is clear that a wide variety of building forms were present in the Milfield region during the transformative period of the Early Neolithic.

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13 ACKNOWLEDGEMENTS

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APPENDIX I - FIGURES

631500

395000

395500

631000

3

6

7

5

8

9

10

1

7

4

2

630500

395000

395500

Figure 2:

631500

Lanton Quarry showing numbered excavation phases.

631000

0 100 200 m

N

Site name: Lanton Quarry
Date: November 2016
Drawn by: DGC
Scale: 1:4000 at A3

630500

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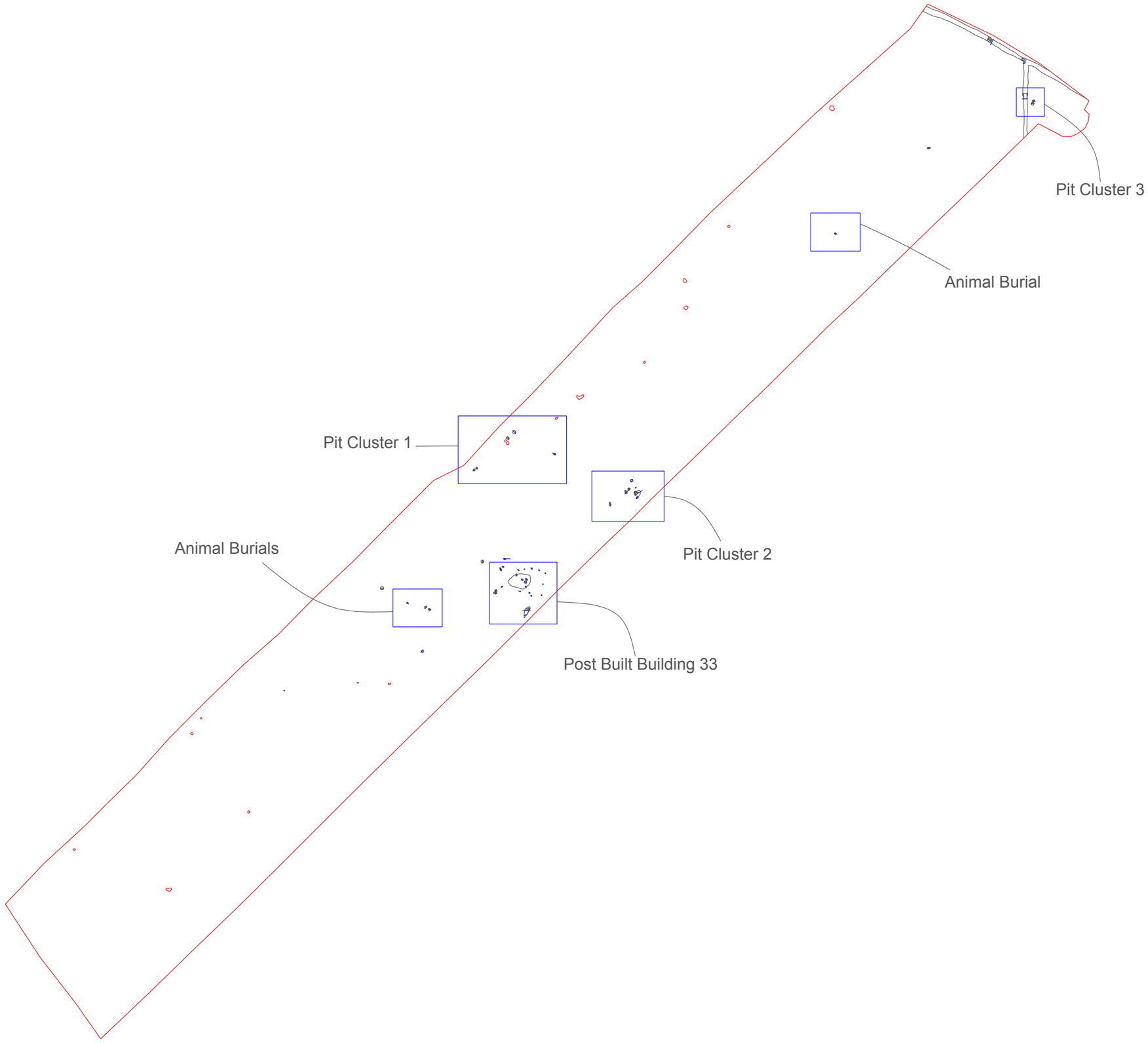
Figure 3. Plan of archaeological features excavated during Phase 10

Plan Scale: 1:1150 @ A3
Drawn: MN & RL

Key:



N

0 10 50m

Figure 4. View of pits F4228 and F4230 from Pit Cluster 1 looking west. Scale = 1m in 0.5m graduations.

Figure 5. View of 'midden' pit F4240 from Pit Cluster 1 looking south-east. Scale = 0.5m in 0.1m graduations.

Figure 6. View of 'midden' pit F4243 from Pit Cluster 1 looking south-east. Note the Early Neolithic pottery fragments visible at the base of the feature. Scale = 0.5m in 0.1m graduations.

Figure 7. View of waste pit F4501 from Pit Cluster 1 looking south-west. Scale = 0.2m in 0.1m graduations.

Figure 8. View of Pit Cluster 2 looking ENE after half-sectioning. Scale = 2m in 0.5m graduations.

Figure 9. View looking north-east of Pit Cluster 2 following excavation. Scale = 2m in 0.5m graduations.

Figure 10. View of posthole F4285 from Cluster 2 looking south-east. Scale = 0.2m in 0.1m graduations.

Figure 11. View of 'midden' pit F4261 from Pit Cluster 2 looking north-east. Scale = 0.5m in 0.1m graduations.

Figure 12. View of 'midden' pits F4268 and F4270 from Pit Cluster 2 looking north-east. Scale = 1m in 0.5m graduations.

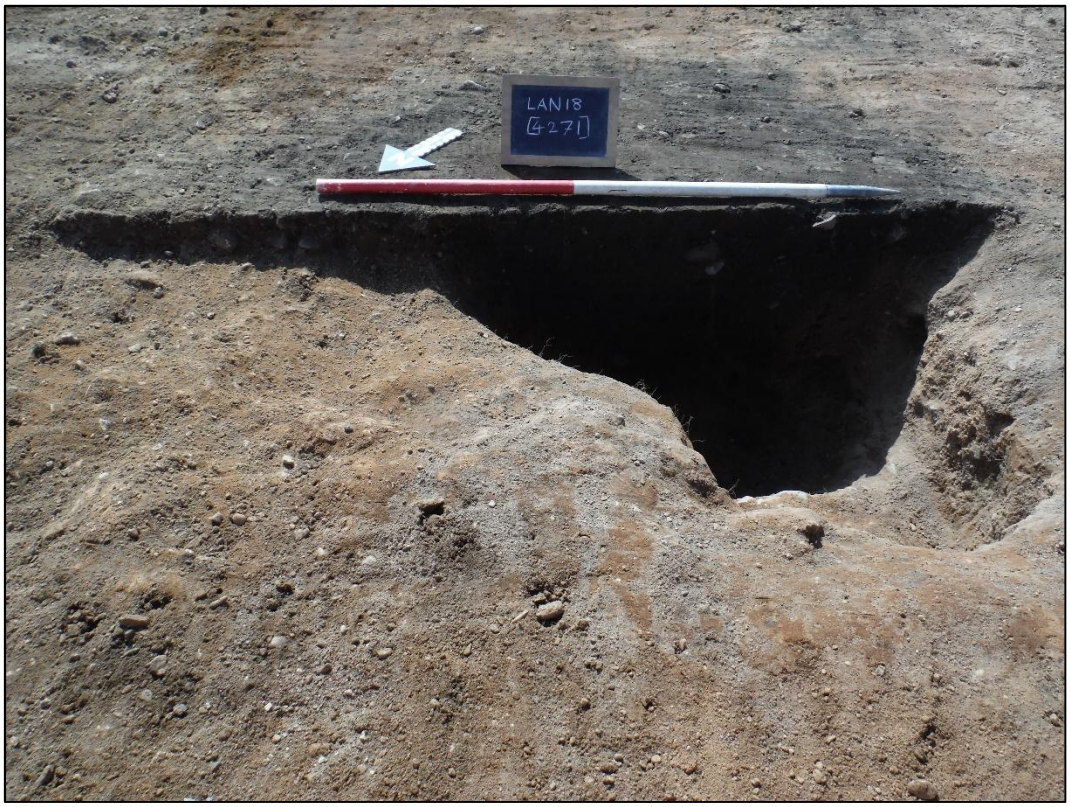


Figure 13. View looking south-east of large 'midden' pit F4273 from Pit Cluster 2. Scale = 1m in 0.5m graduations.

Figure 14. Quernstone retrieved from pit F4273. Scale = 0.2m in 0.1m graduations.

Figure 15. Profile of quernstone retrieved from 'midden' pit F4273. Note the concavity and smoothness of the superior surface of the quern, resulting from wear produced by repeated contact with the handstone.

Figure 16. Pit Cluster 3 after half sectioning. Scale = 0.2m in 0.1m graduations.

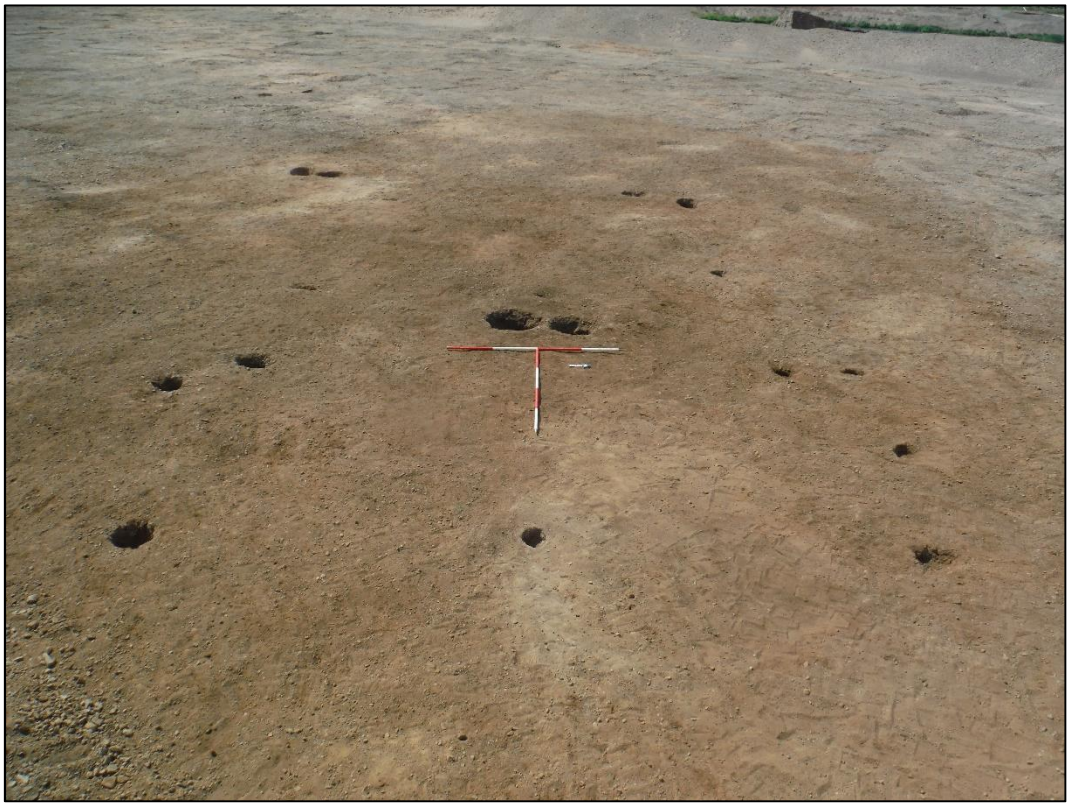


Figure 17. View facing west-south-west of Post-Built Building 33. Scale = 2m in 0.5m graduations

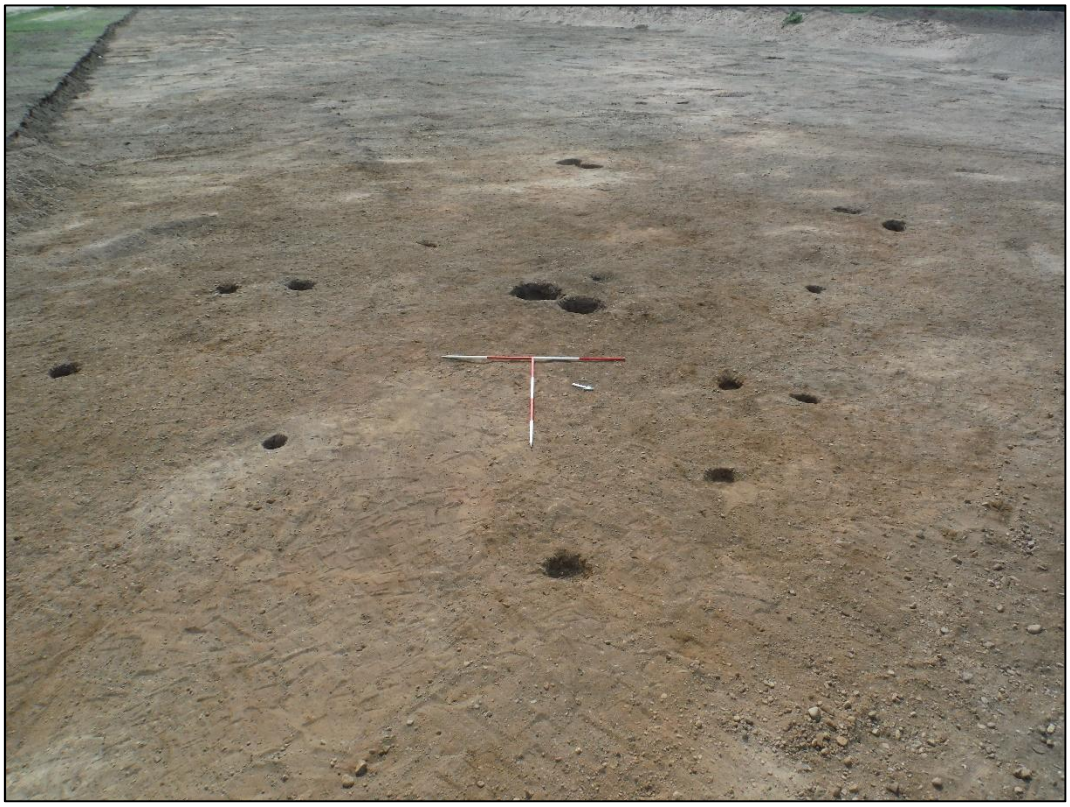


Figure 18. View facing south-west of Post-built Building 33. Scale = 2m in 0.5m graduations.

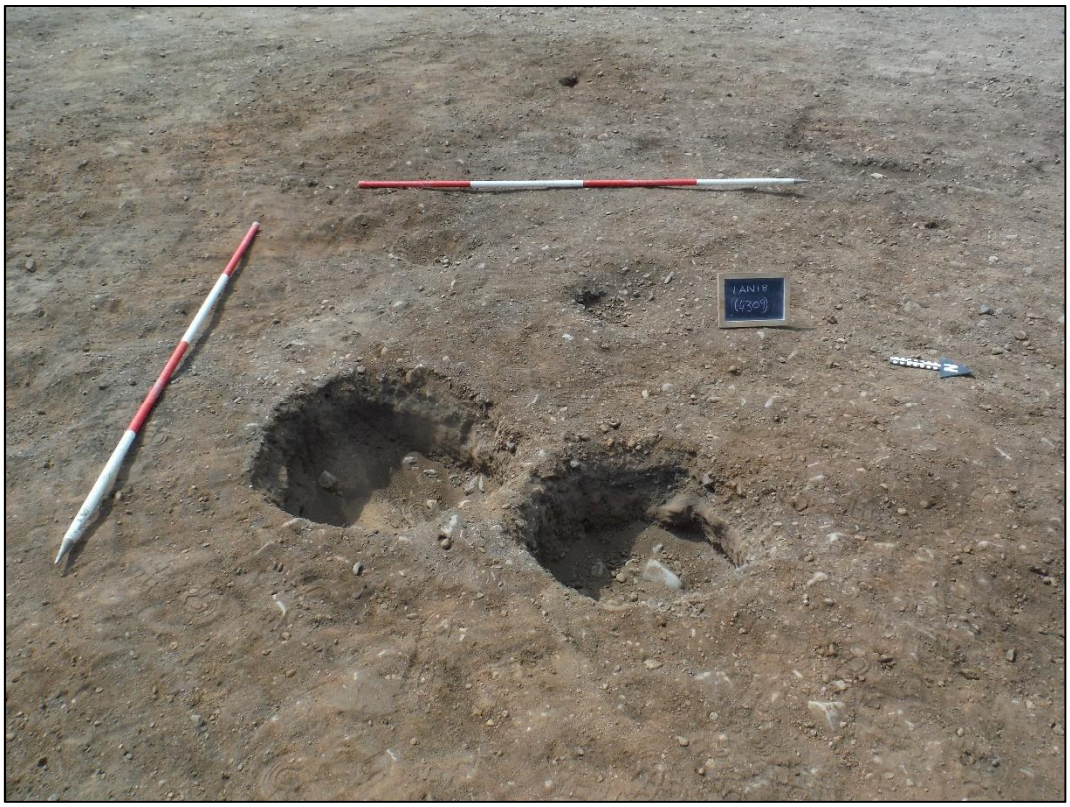


Figure 19. View facing west of 'midden' pits F4256 and F4275 in the western interior of PBB 33. Note the location of central posthole F4252 west of the pits and the pink hue of the gravels caused by exposure to occasional high temperature. (Scale = 2m in 0.5m graduations).

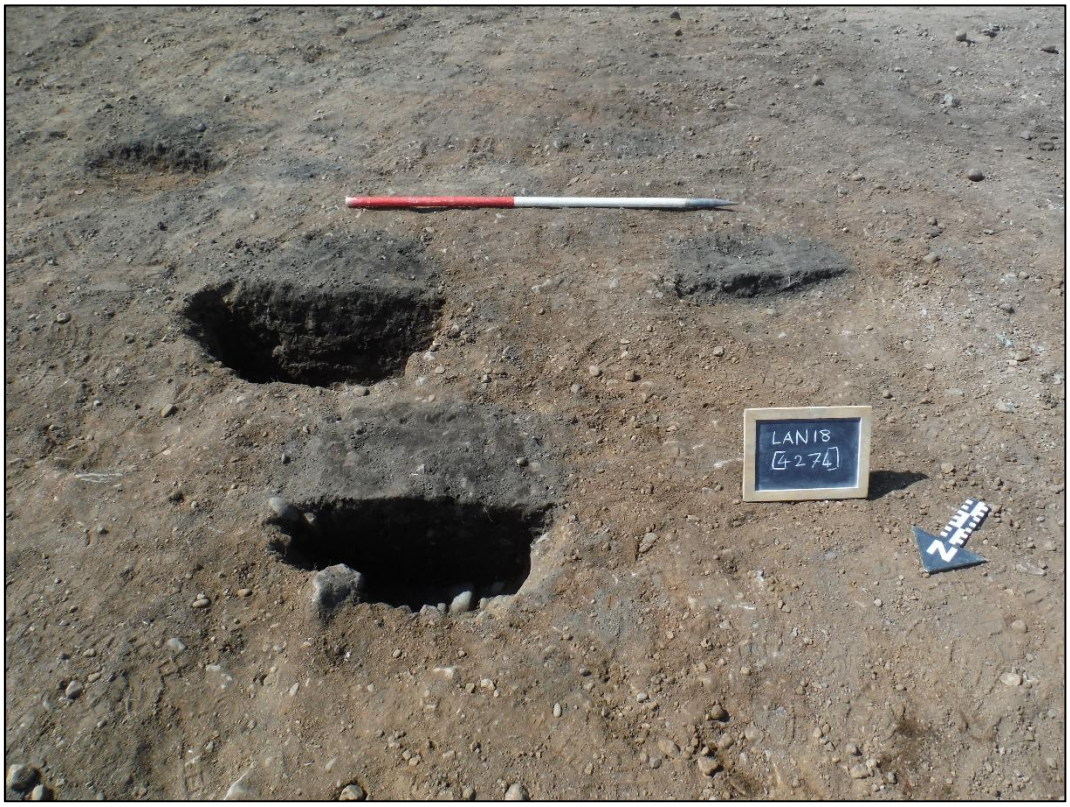


Figure 20. View looking SSE of interior 'midden' pits F4256, F4275 and F4277. Scale = 1m in 0.5m graduations.

Figure 21. View facing south of posthole F4245. Posthole was located at the NW corner of PBB 33. Scale = 0.2m in 0.1m graduations.

Figure 22. View looking SSE of posthole F4279. Posthole F4278 was located at the south-east corner of PBB 33. Scale = 0.5m in 0.1m graduations.

Figure 23. View looking SSW of posthole F4304. Posthole F4304 was located within the northern wall of PBB 33. Scale = 0.2m in 0.1m graduations.

Figure 24. View facing south-west of exterior pits F4318 and F4320 situated west of PBB 33 (Scale = 0.2m in 0.1m graduations).

Figure 25. View facing north-east of exterior pits F4325 and F4328 situated west of PBB 33 (Scale = 1m in 0.5m graduations).

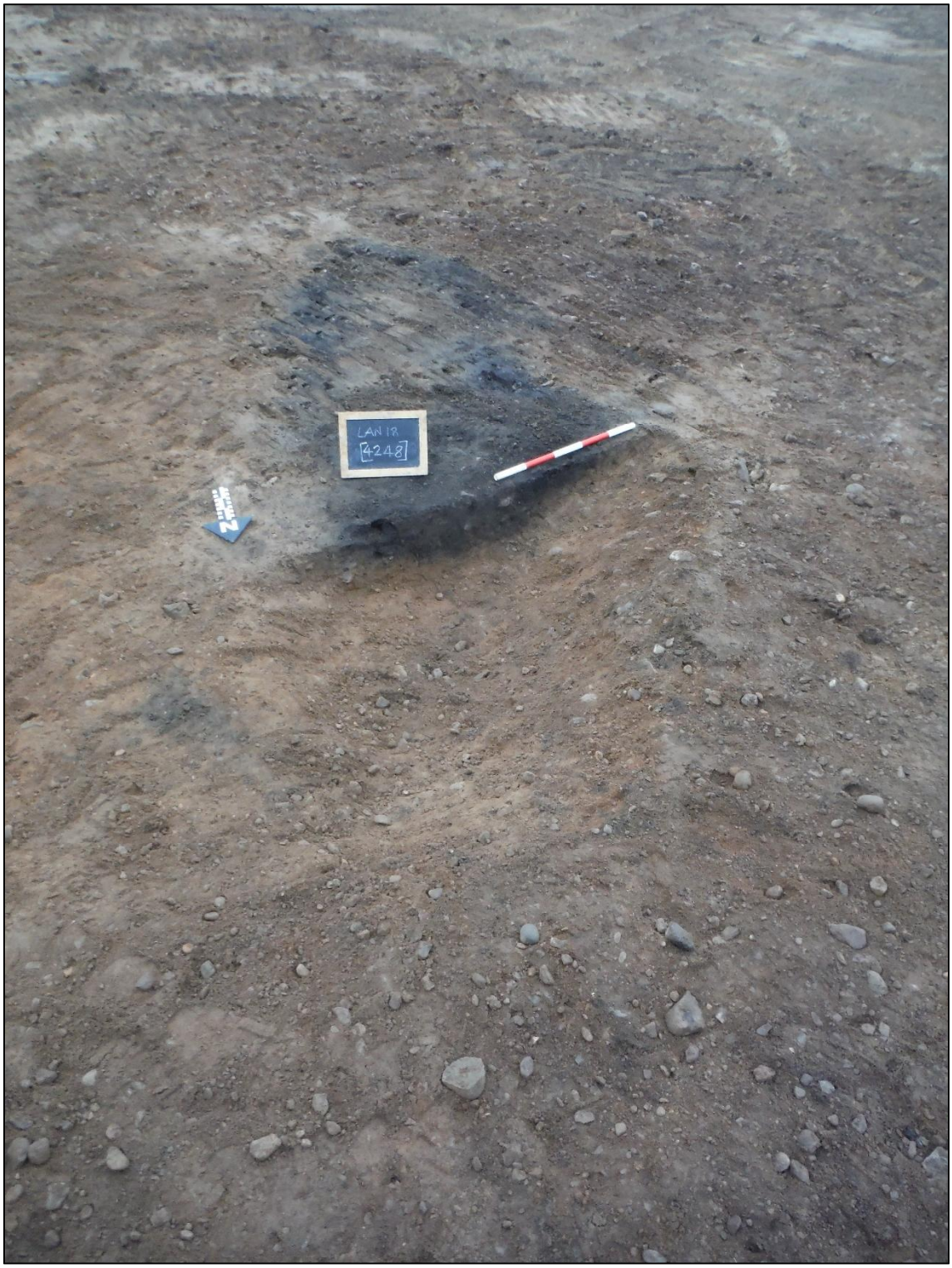


Figure 26. View facing SSW of hearth clearance pit F4250. Pit F4250 was considered associated with PBB 33. Scale = 0.5m in 0.1m graduations.

Figure 27. View looking south-west of post-medieval field boundary ditch F4258. Scale = 1m in 0.5m graduations.

Figure 28. View looking east of post-medieval boundary ditch F4282. Scale = 1m in 0.5m graduations.

Figure 29. View of sheep burial F4222 looking north Scale = 0.15m in 10mm graduations.

Figure 30. View looking sheep burial F4233 looking west. Scale = 0.5m in 0.1m graduations.

Figure 31. View of sheep burial F4288 looking east. Scale = 0.5m in 0.1m graduations.

Figure 32. View of sheep burial F4288 looking south-east. Scale = 0.2m in 0.1m graduations.

Figure 33. Flint scraper 1879 (left) and flake 1889 (right), scale = 10mm graduations.

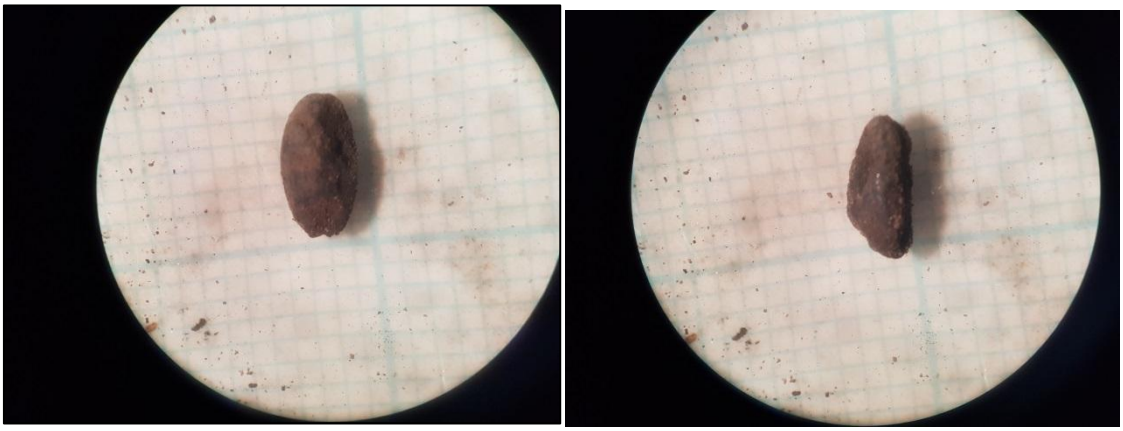


Figure 34. x40 magnification of emmer wheat grain recovered from fill (4247) of pit [4246]. Background scale squares are 1mm. (left) Overhead plan view of emmer wheat grain showing the shape of the wheat grain. (right) Profile view of the wheat grain profile, displaying the characteristic emmer dorsal hump.

Figure 35. Rim sherds from Carinated Bowl 155 (scale = 80mm in 10mm graduations).

Figure 36. Carinated Bowl 170 (scale = 80mm in 10mm graduations).

Figure 37. Rim sherds from Carinated Bowl 177 (scale = 80mm in 10mm graduations).

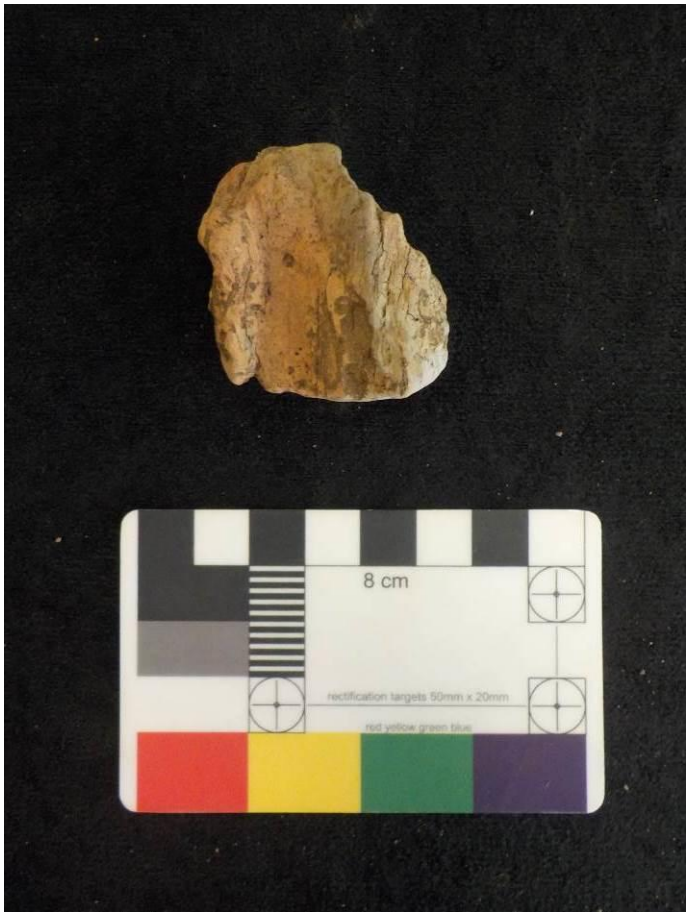
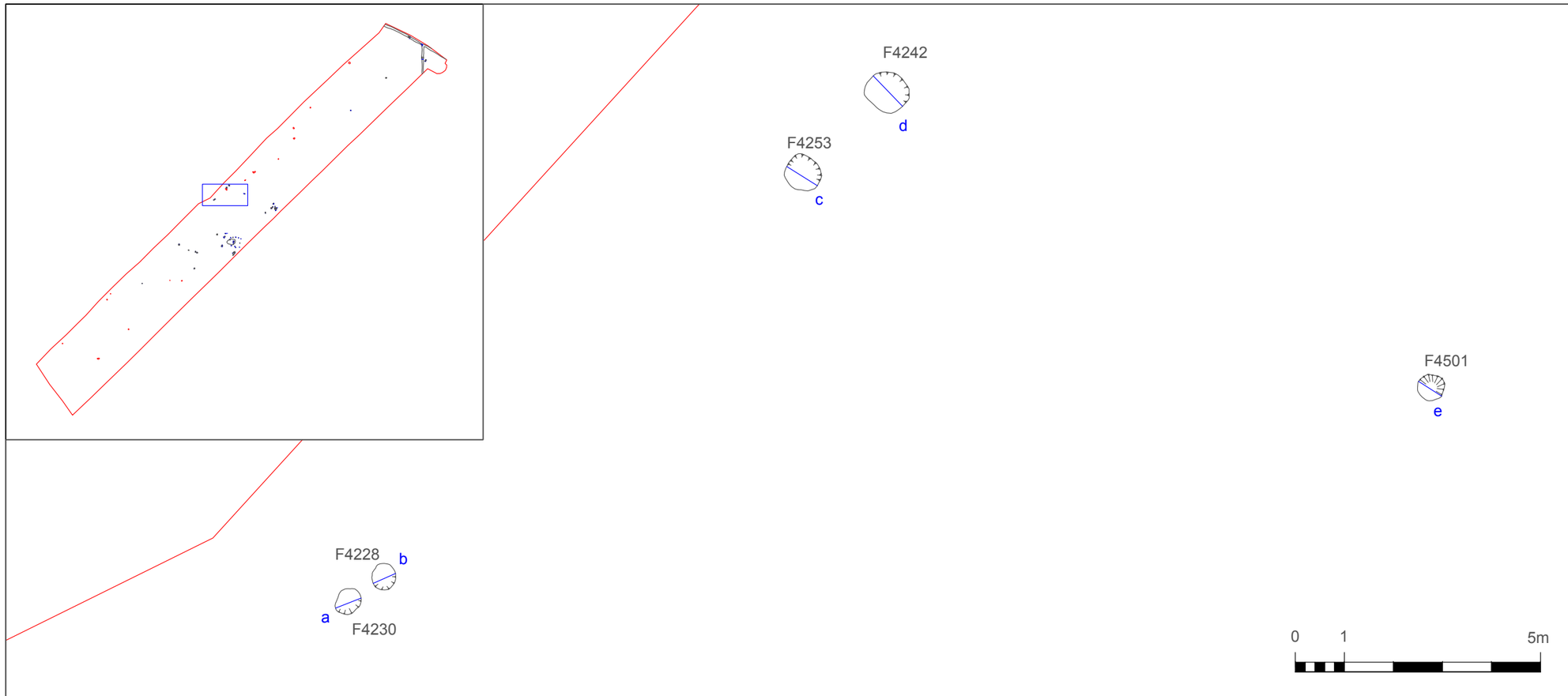


Figure 38. Fragment of daub from (4256), note the wattle impression (scale = 80mm in 10mm graduations).



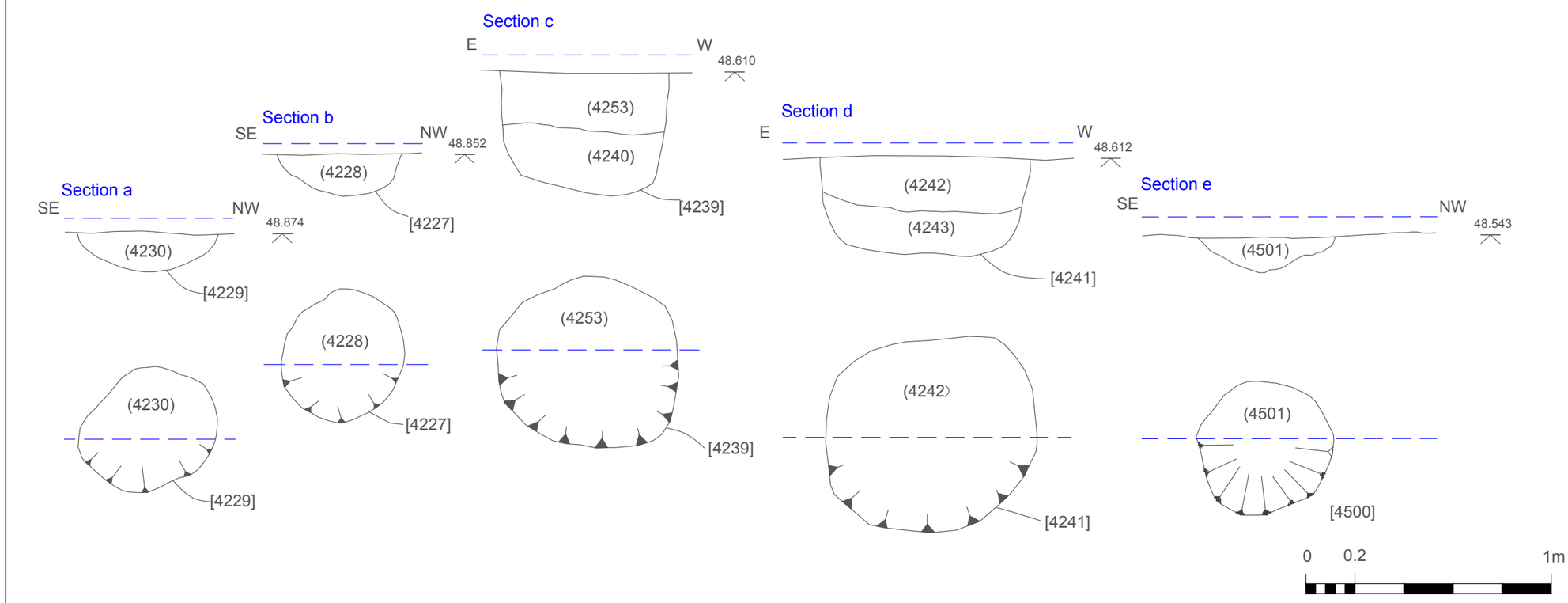


Figure 39. Plan and Sections of Pit Cluster 1

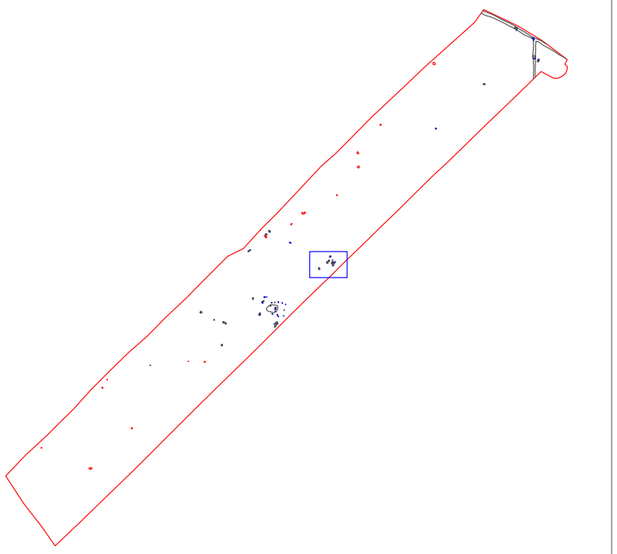
Plan Scale: 1:100 @ A3
Section Scale: 1:20 @ A3
Drawn: MN & RL

Key:

62.70 - All heights expressed in mOD

a - Section Drawing Reference

N



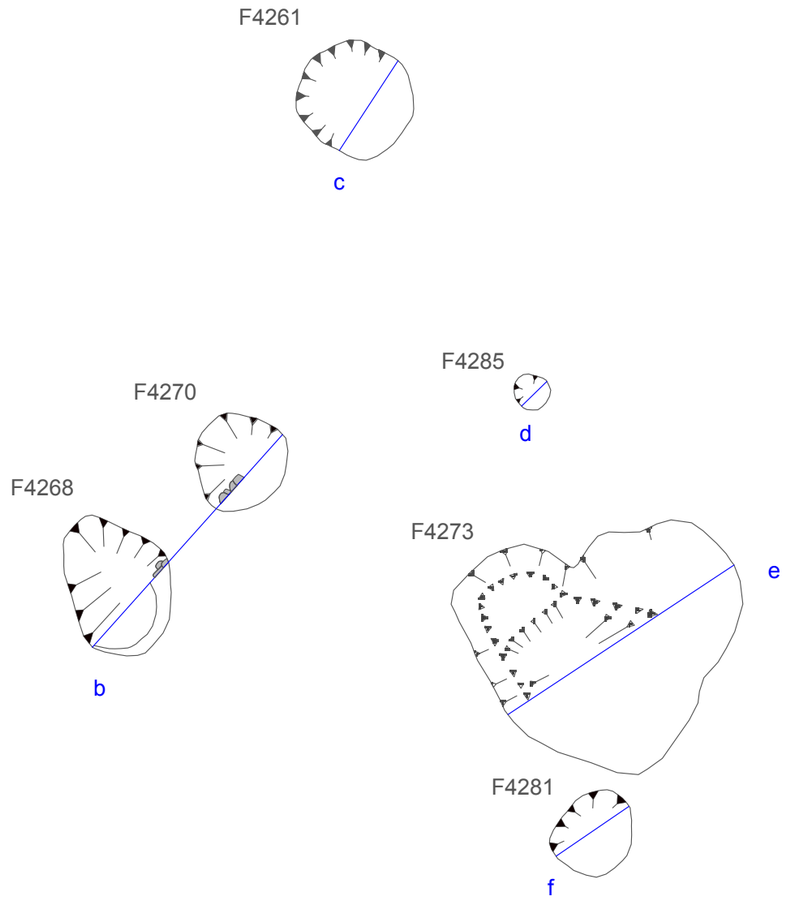


Figure 40. Plan of Pit Cluster 2

Plan Scale: 1:40 @ A3
Drawn: MN & RL

Key:

a - Section Drawing Reference

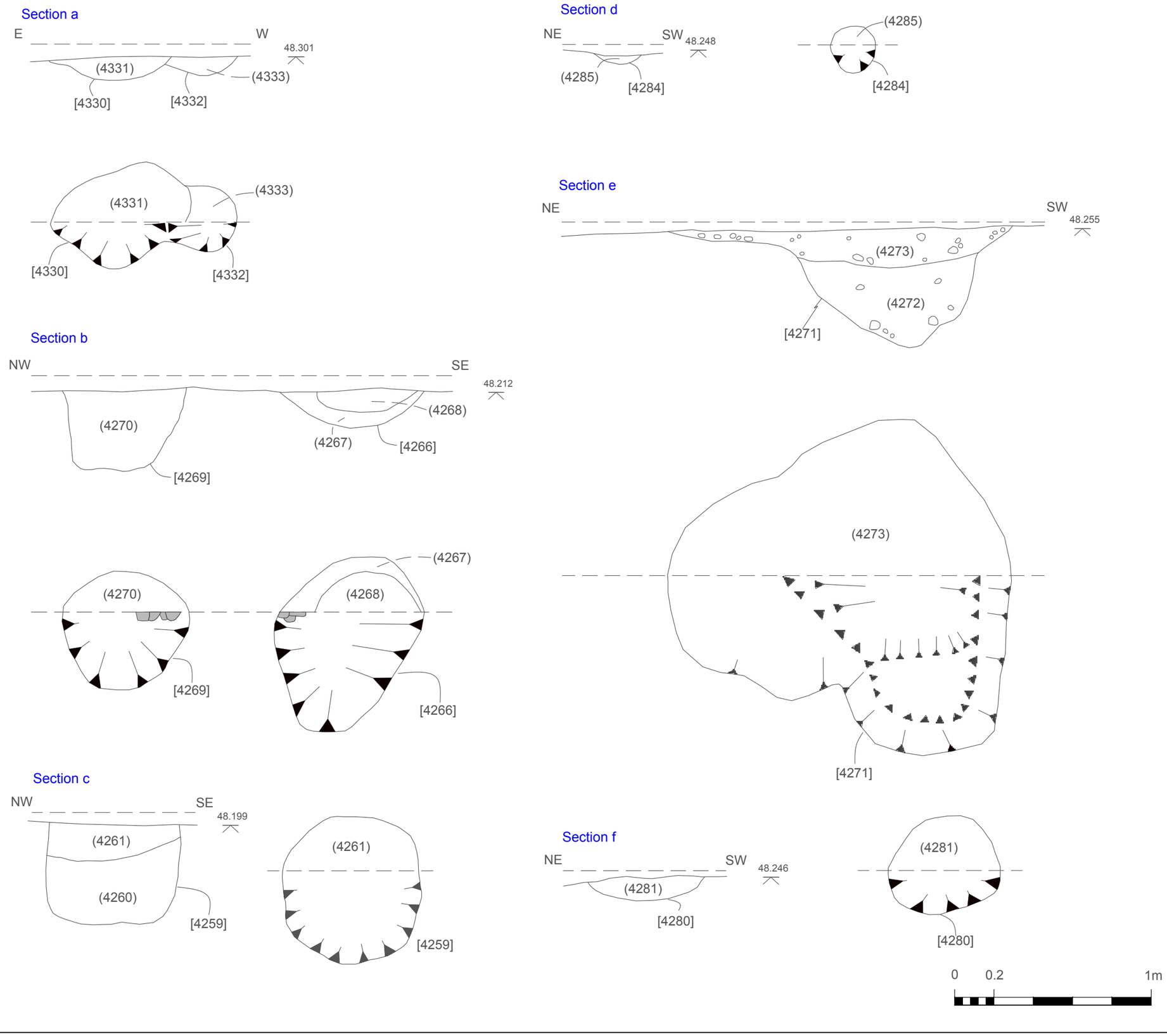


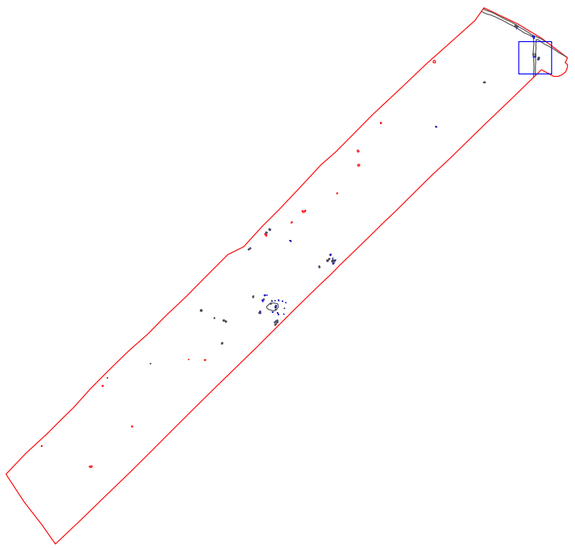
Figure 41. Plan and Sections of pits associated with Pit Cluster 2

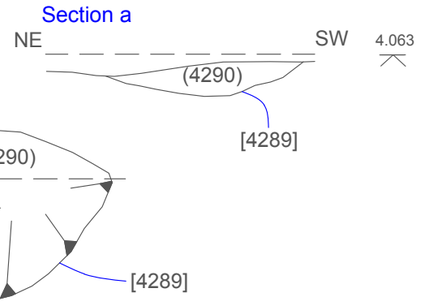
Plan Scale: 1:20 @ A3
Section Scale: 1:20 @ A3
Drawn: MN & RL

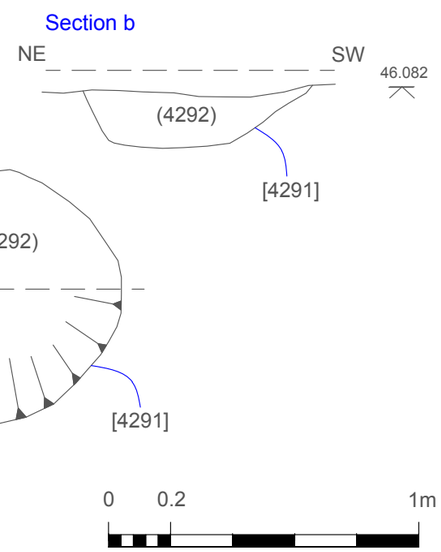
Key:

62.70 - All heights expressed in mOD

a - Section Drawing Reference







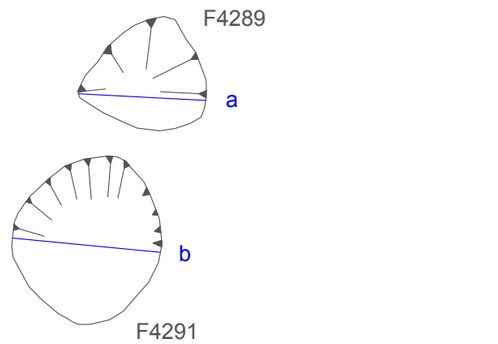


Figure 42. Plan and Sections of Pit Cluster 3

Plan Scale: 1:40 @ A3
Section Scale: 1:20 @ A3
Drawn: MN & RL

Key:

62.70 All heights expressed in mOD

a - Section Drawing Reference

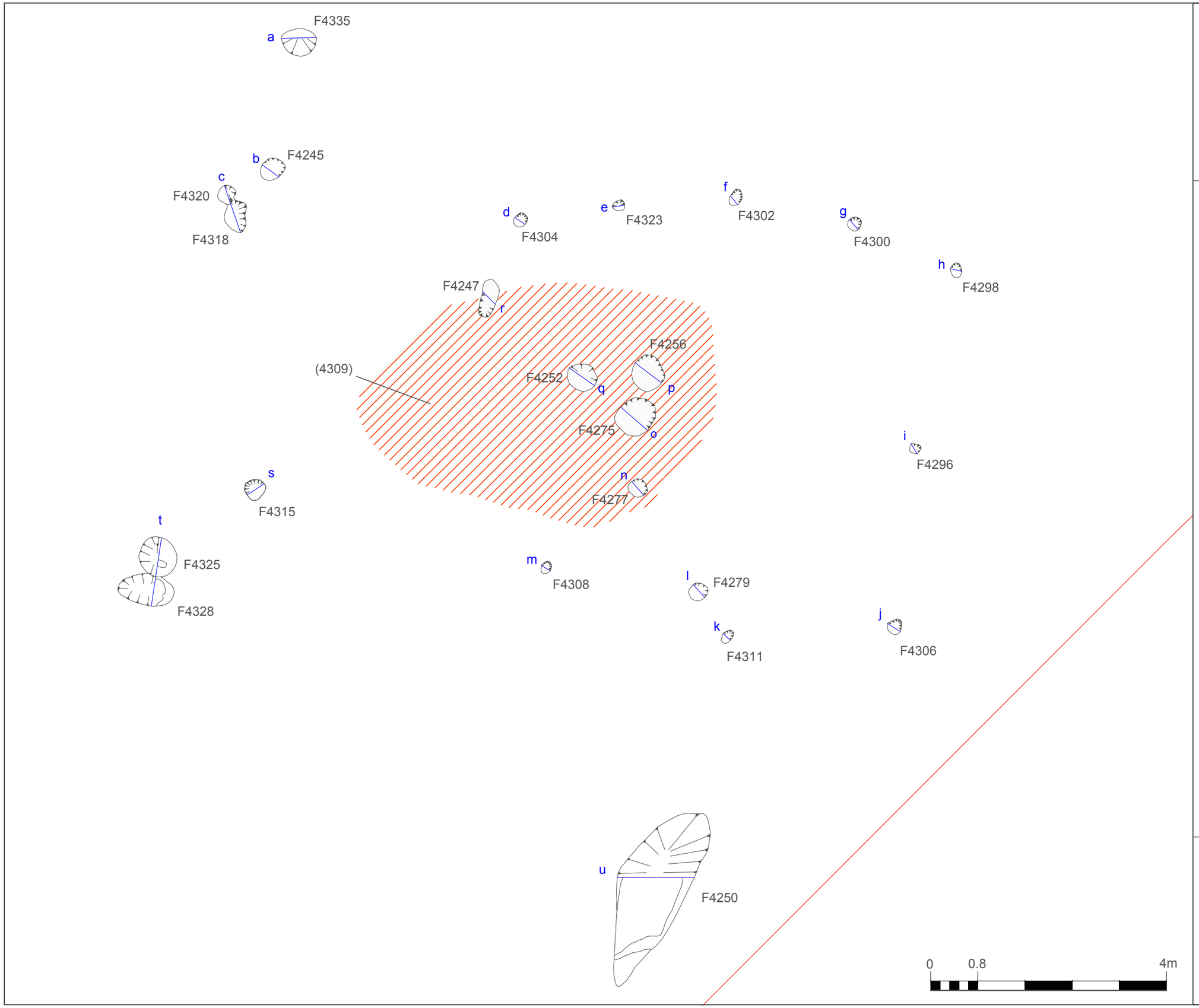


Figure 43. Plan of Post-Built Building 33

Plan Scale: 1:60 @ A3
Drawn: MN & RL

Key:

- Heat Affected Natural Gravels

a - Section Reference - Figure ?

N

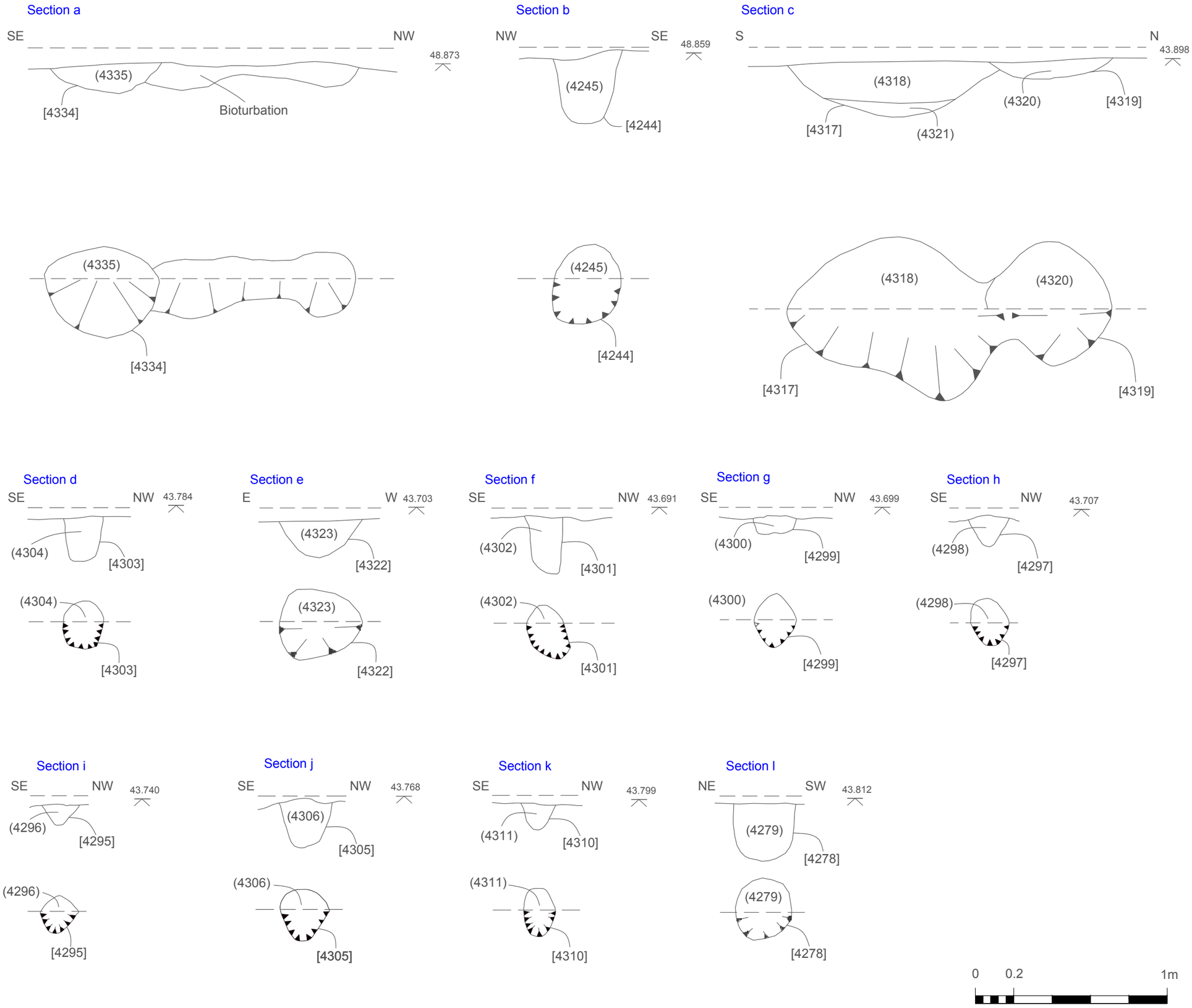
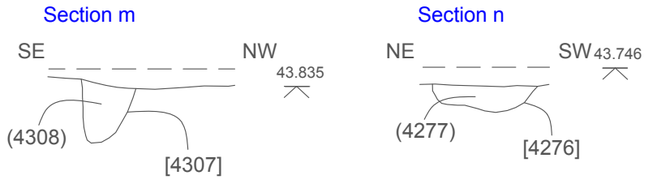


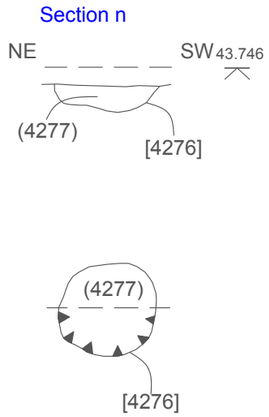
Figure 44. Plan and Sections of pits associated with Post Built Building 33

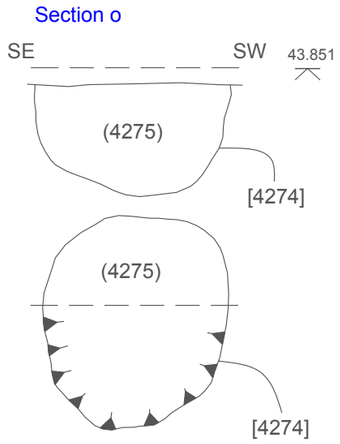
Plan Scale: 1:20 @ A3
Section Scale: 1:20 @ A3
Drawn: MN & RL

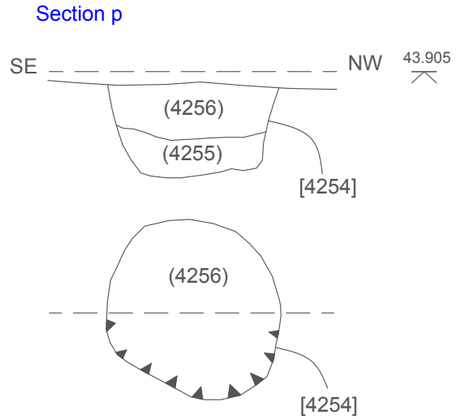
Key:

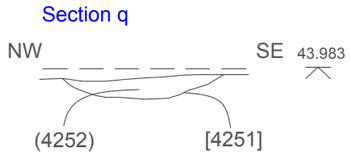
62.70 - All heights expressed in mOD

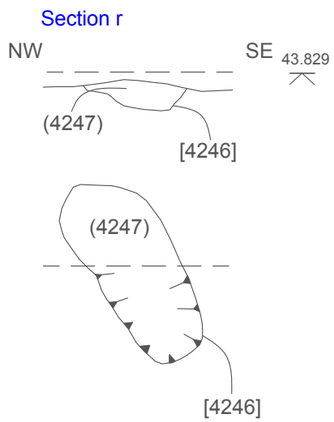


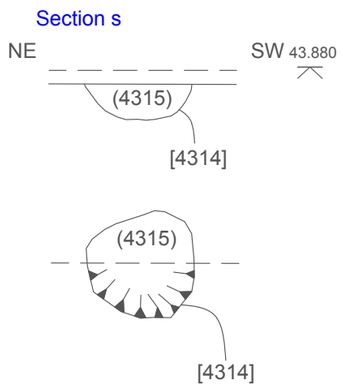


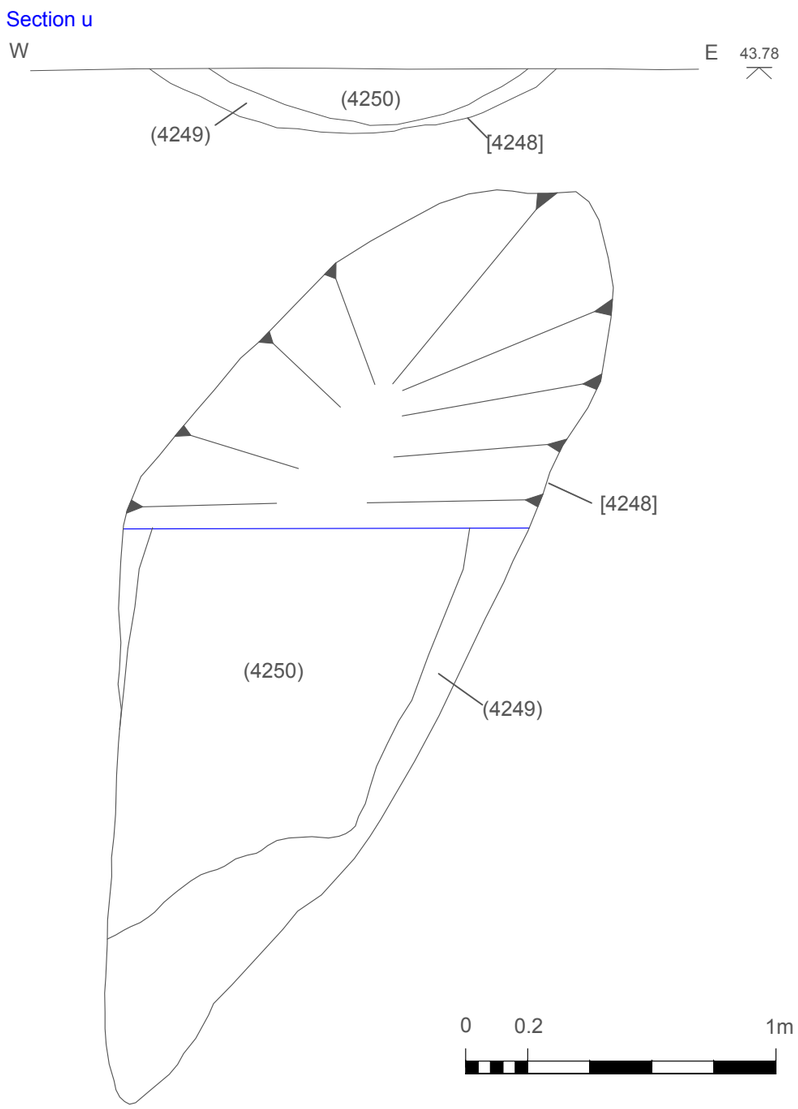












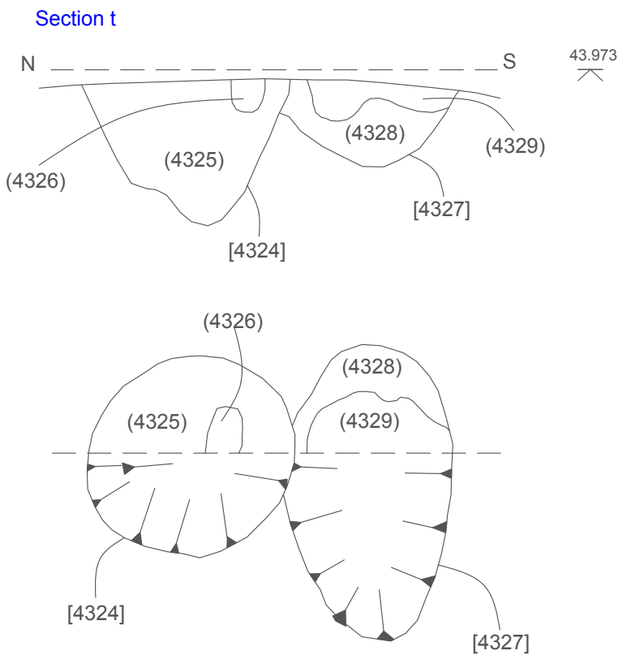


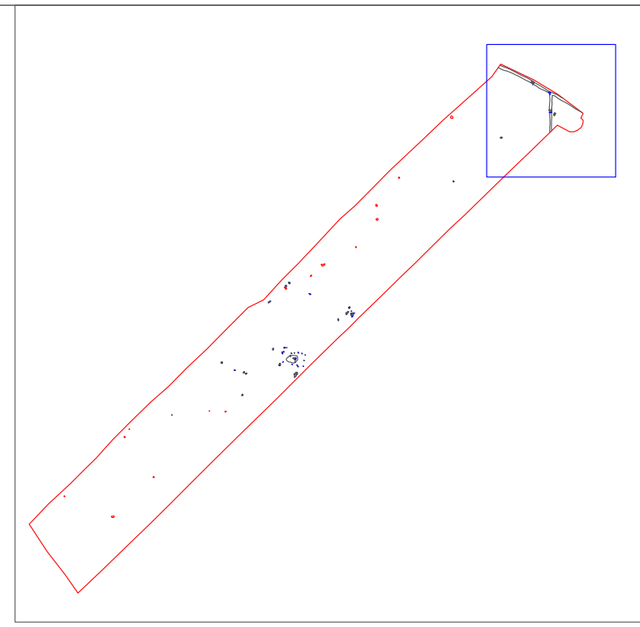
Figure 45. Plan and Sections of pits associated with Post Built Building 33

Plan Scale: 1:20 @ A3
Section Scale: 1:20 @ A3
Drawn: MN & RL

Key:

62.70 - All heights expressed in mOD

N



F4282
a
F4262
b
F4259
F4257
c
F4289
F4291
F4293
d
0 1 5m
N

Section a
NW SE 46.033
(4283)
[4282]

Section b
SW NE NW SE NE SW E W 45.963
[4262]
(4263)
(4265)
[4259]

Section c
SE NW 46.122
(4258)
[4257]

Section d
E W 46.219
(4294)
[4293]
0 0.2 1m

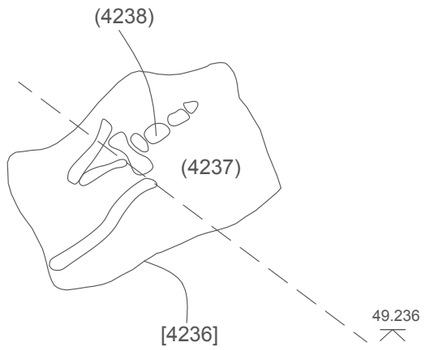
Figure 46. Plan and Sections of Post-Medieval Boundary Ditch

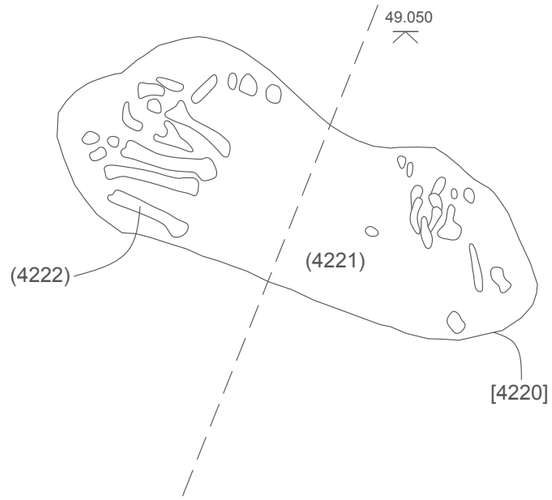
Plan Scale: 1:130 @ A3
Section Scale: 1:20 @ A3
Drawn: MN & RL

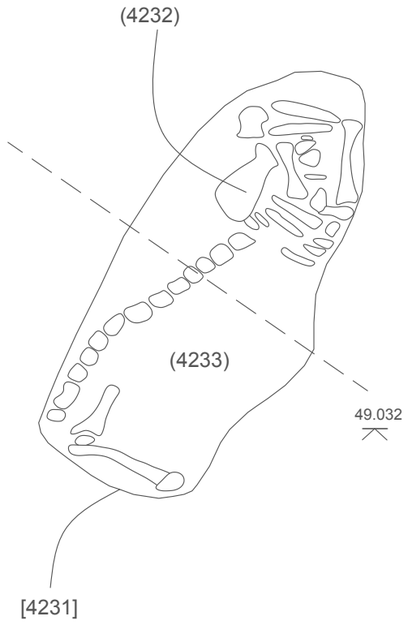
Key:

62.70 - All heights expressed in mOD

a - Section Drawing Reference







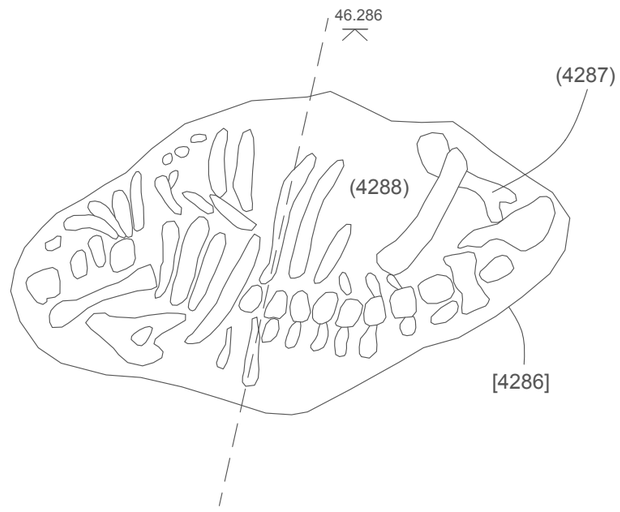


Figure 47. Plan of Modern Animal burials

Plan Scale: 1:10 @ A3
Drawn: MN & RL

Key:

N

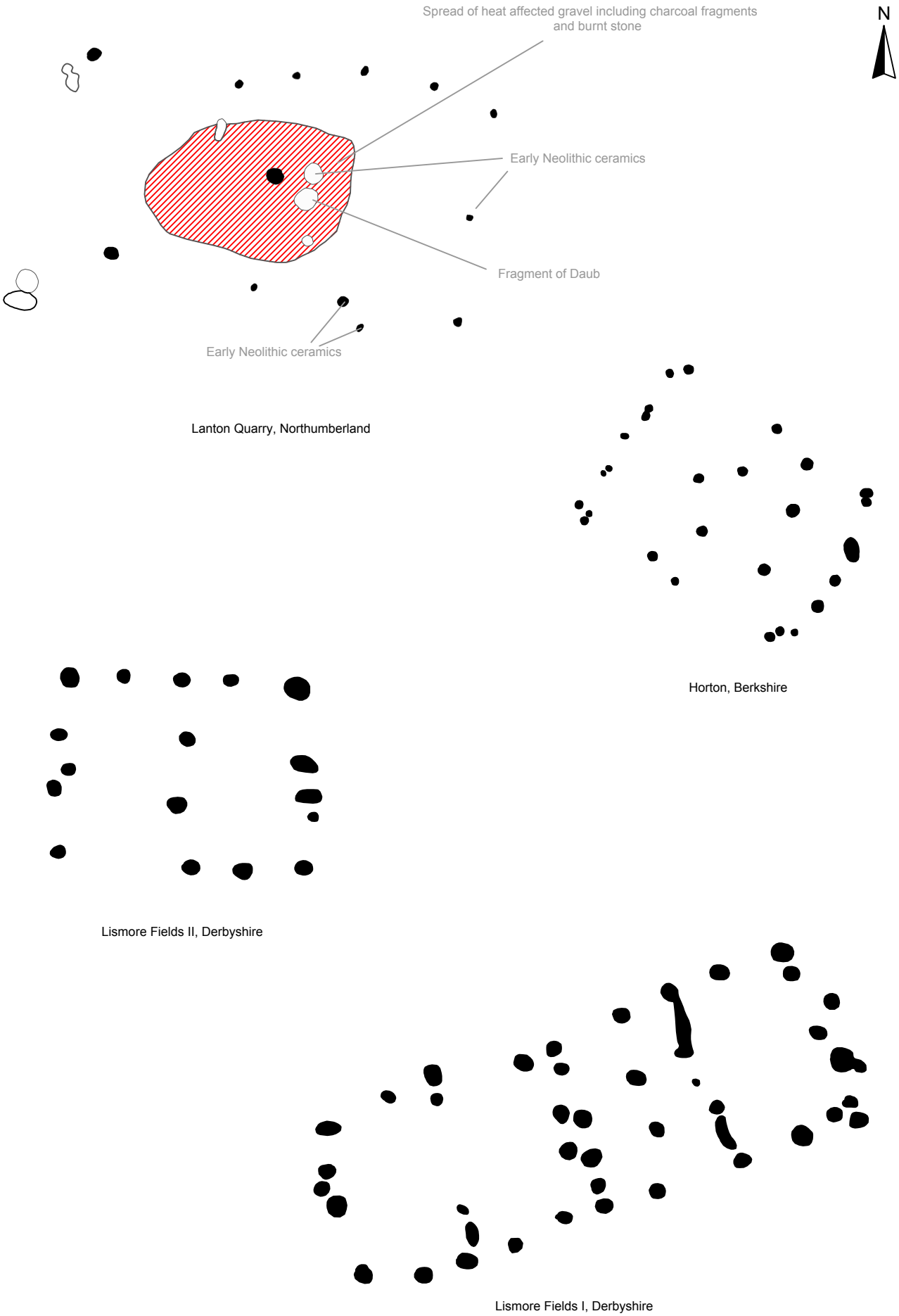


Figure 48. Comparative Plan of Early Neolithic House Structures in England.

Figure 49. Interpretive illustration of Post-built Building 33
(Artist – Dr Ian Wyre, Archaeological Research Services Ltd).

APPENDIX II - REGISTERS

Context Register

Context No.	Associated Contexts	Description	Date
4218	4219	Pit	
4219	4218	Pit	
4220	4221, 4222	Animal burial	Modern
4221	4220, 4222	Animal burial	Modern
4222	4220, 4221	Animal burial	Modern
4223	4224	Pit	
4224	4223	Pit	
4225	4226	Waste pit	Early Neolithic
4226	4225	Waste pit	Early Neolithic
4227	4228	Pit	Early Neolithic
4228	4227	Pit	Early Neolithic
4229	4230	Pit	Early Neolithic
4230	4229	Pit	Early Neolithic
4231	4232, 4233	Animal burial	Modern
4232	4231, 4233	Animal burial	Modern
4233	4231, 4232	Animal burial	Modern
4234	4235	Stakehole	
4235	4234	Stakehole	
4236	4237, 4238	Animal burial	Modern
4237	4236, 4238	Animal burial	Modern
4238	4236, 4237	Animal burial	Modern
4239	4240, 4253	Waste pit	Early Neolithic
4240	4239, 4253	Waste pit	Early Neolithic
4241	4242, 4243	Waste pit	Early Neolithic
4242	4241, 4243	Waste pit	Early Neolithic
4243	4241, 4242	Waste pit	Early Neolithic
4244	4245	posthole	Early Neolithic
4245	4244	posthole	Early Neolithic
4246	4247	pit	
4247	4246	pit	
4248	4249, 4250	External Hearth Clearance Pit	
4249	4248, 4250	External Hearth Clearance Pit	Early Neolithic
4250	4248, 4249	External Hearth Clearance Pit	Early Neolithic
4251	4252	posthole	Early Neolithic
4252	4251	posthole	Early Neolithic
4253	4239, 4240	Waste pit	Early Neolithic
4254	4255, 4256	Pit	Early Neolithic
4255	4254, 4256	Pit	Early Neolithic
4256	4254, 4255	Pit	Early Neolithic
4257	4258	Boundary ditch	post-medieval

4258	4257	Boundary ditch	post-medieval
4259	4260, 4261	pit	Early Neolithic
4260	4259, 4261	Pit	Early Neolithic
4261	4259, 4260	Pit	Early Neolithic
4262	4263, 4264, 4265	Boundary ditch	post-medieval
4263	4262, 4264, 4265	Boundary ditch	post-medieval
4264	4262, 4263, 4265	Boundary ditch	post-medieval
4265	4262, 4263, 4264	Boundary ditch	post-medieval
4266	4267, 4268	Pit	Early Neolithic
4267	4266, 4268	Pit	Early Neolithic
4268	4266, 4267	Pit	Early Neolithic
4269	4270	Pit	Early Neolithic
4270	4269	Pit	Early Neolithic
4271	4272, 4273	Pit	Early Neolithic
4272	4271, 4273	Pit	Early Neolithic
4273	4271, 4272	Pit	Early Neolithic
4274	4275	Pit	Early Neolithic
4275	4274	Pit	Early Neolithic
4276	4277	Pit	Early Neolithic
4277	4276	Pit	Early Neolithic
4278	4279	Pit	Early Neolithic
4279	4278	posthole	Early Neolithic
4280	4281	Pit	Early Neolithic
4281	4280	Pit	Early Neolithic
4282	4283	Boundary ditch	post-medieval
4283	4282	Boundary ditch	post-medieval
4284	4285	posthole	Early Neolithic
4285	4284	posthole	Early Neolithic
4286	4287, 4288	Animal burial	Modern
4287	4286, 4288	Animal burial	Modern
4288	4286, 4287	Animal burial	Modern
4289	4290	Pit	Early Neolithic
4290	4289	Pit	Early Neolithic
4291	4292	Pit	Early Neolithic
4292	4291	Pit	Early Neolithic
4293	4294	Ditch	post-medieval
4294	4293	Ditch	post-medieval
4295	4296	posthole	Early Neolithic
4296	4295	posthole	Early Neolithic
4297	4298	posthole	Early Neolithic
4298	4297	posthole	Early Neolithic
4299	4300	posthole	
4300	4299	posthole	

4301	4302	posthole	Early Neolithic
4302	4301	posthole	Early Neolithic
4303	4304	posthole	Early Neolithic
4304	4303	posthole	Early Neolithic
4305	4306	posthole	Early Neolithic
4306	4305	posthole	Early Neolithic
4307	4308	posthole	Early Neolithic
4308	4307	posthole	Early Neolithic
4309	n/a	Heat Affected Gravel Spread	Early Neolithic
4310	4311	posthole	Early Neolithic
4311	4310	posthole	Early Neolithic
4312	void		
4313	void		
4314	4315, 4316	posthole	Early Neolithic
4315	4314, 4316	posthole	Early Neolithic
4316	4314, 4315	posthole	Early Neolithic
4317	4318, 4321	pit	Early Neolithic
4318	4317, 4321	pit	Early Neolithic
4319	4320	pit	Early Neolithic
4320	4319	pit	Early Neolithic
4321	4317, 4318	pit	Early Neolithic
4322	4323	posthole	Early Neolithic
4323	4322	posthole	Early Neolithic
4324	4325, 4326	pit	
4325	4324, 4326	pit	
4326	4324, 4325	pit	
4327	4328, 4329	pit	
4328	4327, 4329	pit	
4329	4327, 4328	pit	
4330	4331	waste pit	Early Neolithic
4331	4330	waste pit	Early Neolithic
4332	4333	pit	
4333	4332	pit	
4334	4335	pit	Early Neolithic
4335	4334	pit	Early Neolithic
4336	void		
4337	void		
4338	4339	posthole	
4339	4338	pit	
4500	4501	pit	Early Neolithic
4501	4500	pit	Early Neolithic
4502	n/a	Topsoil	
4503	n/a	Subsoil	

4504	n/a	Natural Sand and Gravel	

Table 11. Context Register.

Environmental Sample Register

Sample No.	Context No.	Description
516	4142	Fill of pit F4142
517	4148	Fill of pit F4148
518	4150	Fill of pit F4150
519	4146	Fill of hearth F4146 containing Carinated Bowl rim sherd
520	4165	Fill of shallow scoop posthole pit F4165
521	4168	Fill of waste pit F4168 containing carinated vessel
522	4169	Fill of scoop pit F4169 containing Carinated Bowl fragments
523	4153	Fill of waste pit F4153
524	4172	Primary fill of pit F4172
525	4182	Secondary fill of pit F4182
526	4178	Fill of structural slot F4178 containing Carinated Bowl fragments
527	4183	Fill of posthole F4183
528	4186	Fill of pit F4186 containing a small fragment of Carinated Bowl
529	4188	Fill of pit F4188 containing a thick walled Early Neolithic vessel
530	4174	Primary fill of waste pit F4174
531	4176	Primary fill of waste pit F4176 containing an Early Neolithic vessel
532	4189	Secondary fill of waste pit F4174 containing an Early Neolithic vessel
533	4190	Secondary fill of waste pit F4176 containing fragments of Carinated Bowl, flint, and burnt bone
534	4191	Fill of structural slot F4191
535	4194	Fill of pit F4194
536	4197	Fill of pit F4197 containing Early Neolithic sherd, hazelnut, and charcoal
537	4203	Fill of pit F4203 containing hazelnut
538	4204	Fill of truncated pit F4204
539	4198	Fill of stakehole F4198
540	4200	Fill of stakehole F4200
541	4206	Fill of small pit F4206 containing Early Neolithic fragments
542	4208	Fill of posthole F4208
543	4213	Fill of pit F4213 containing Carinated Bowl fragments
544	4211	Fill of pit F4211 containing Early Neolithic fragments
545	4150	Sample of hazelnut shell from small pit F4150
546	4169	Sample of hazelnut shell from pit F4169
547	4197	Sample of hazelnut shell from pit F4197
548	4203	Sample of hazelnut shell from pit F4203

Table 12. Environmental Sample Register

APPENDIX III - PALAEOENVIRONMENTAL INVENTORY

Sample No.	577	589	593	592	582	586	605	585	604	562	561	563	564
Context No.	4245	4298	4302	4304	4306	4308	4309	4311	4323	4247	4247	4252	4256
Description	Posthole [4244]	Posthole [4297]	Posthole [4301]	Posthole [4303]	posthole [4305]	Posthole [4307]	Heat affected deposit in PBB 33	Posthole [4310]	Posthole [4322]	Small Pit [4246]	Small Pit [4246]	Posthole [4251] inside PBB 33	Upper fill of posthole [4254] inside PBB 33
Charcoal													
Quantity	2.34g	1.37g	0.63g	1.45g	5.15g	0.79g	0.17g	2.90g	0.35g	176.66g	2.51g	0.24g	36.73g
Alder (Alnus glutinosa Gaertn.)		1 (1RW)								1 (1RW)			
Willow (Salix sp.)											1		
Hazel (Corylus avellana L.)	1	1 (1RW)			1					8 (8RW)	1		1 (1RW)
Oak (Quercus sp.)			5		3 (1RW)	1		2		6 (6RW)			18 (5RW)
Elder (Sambucus nigra L.)										3 (3RW)			1
Birch (Betula sp.)	Mature fragments			1 (1RW)	4					2 (2RW)	1		
Plant Macrofossils													
Wild seeds													
Rosehip stone (Rosa majalis)										1			
Hazelnut (Corylus avellana L.) shell				1						1.63g			0.32g
Cleaver (Galium aperine)										1			
cf. Ivy leaved speedwell (Veronica hederifolia)										2			
Cereals													
Emmer wheat (Triticum dicoccum)		1						1		78		1	21
Indet. cereal										13		1	

Table 13. Recovered charred palaeobotanical and charcoal remains from PBB 33 contexts. Green highlight indicates material suitable for radiocarbon dating.

Sample No.	550	559	602	596	600	599
Context No.	4226	4245	4320	4325	4329	4328
Description	Waste pit [4225]	Pit [4244]	Pit [4319]	Pit [4324]	Upper fill of pit [4327]	Lower fill of pit [4327]
Charcoal						
Quantity	3.21g	3.03g	0.21g	15.75g	20.01g	2.58g
Alder (Alnus glutinosa Gaertn.)	2 (2RW)					
Hazel (Corylus avellana L.)	4 (4RW)	2			5	
Oak (Quercus sp.)	2 (2RW)	15		20		2
Elder (Sambucus nigra L.)						
Maloideae sp.						
Notes				Fairly fragmented	Mature fragments	Badly fragmented
Plant Macrofossils						
Wild seeds						
Hazelnut (Corylus avellana L.) shell	1					
Cereals						
Emmer wheat (Triticum dicoccum)	7					

Table 14. Recovered charred palaeobotanical and charcoal remains from pits and postholes in close proximity (<10m) to PBB 33. Green highlight indicates material suitable for radiocarbon dating.

Sample No.	552	553	554	556	557	558
Context No.	4224	4228	4230	4240	4242	4243
Description	Pit [4223]	Waste pit [4227]	Waste pit [4229]	Fill of Waste pit [4239]	Upper fill of waste pit [4241]	Lower fill of waste pit [4241]
Charcoal						
Quantity	0.73g	4.52g	11.00g	47.56g	21.10g	9.55g
Alder (*Alnus glutinosa Gaertn.*)					1	
Willow (*Salix sp.*)					1	
Hazel (*Corylus avellana L.*)		2		2		1
Oak (*Quercus sp.*)		4	6 (2RW)	2	4	2
Elder (*Sambucus nigra L.*)						1
Field maple (*Acer campestre L.*)						1 (1RW)
Birch (*Betula sp.*)		1		3		
Maloideae sp.			11 (11RW)			
Notes		Badly fragmented			Mature fragments	
Plant Macrofossils						
Wild seeds						
Hazelnut (*Corylus avellana L.*) shell		3	0.23g	1	0.22g	
cf. Ivy leaved speedwell (*Veronica hederifolia*)						1
Cereals						
Emmer wheat (*Triticum dicoccum*)		1	2		2	1
Indet. cereal	1				3	

Table 15. Recovered charred palaeobotanical and charcoal remains from Pit Cluster 1. Green highlight indicates material suitable for radiocarbon dating.

Sample No.	565	566	573	572	574	568	569	576	606	607
Context No.	4260	4261	4267	4268	4270	4272	4273	4281	4331	4333
Description	Upper fill of pit [4259]	Lower fill of pit [4259]	Lower fill of pit [4266]	Upper fill of pit [4266]	Fill of PH/pit [4269]	Lower fill of pit [4271]	Upper fill of pit [4271]	Pit [4280]	Fill of posthole [4330]	Fill of pit [4332]
Charcoal										
Quantity	15.61g	8.62g	34.27g	17.67g	82.28g	28.81g	16.64g	1.25g	38.24g	19.12g
Alder (*Alnus glutinosa Gaertn.*)				1 (1RW)					6 (6RW)	
Willow *(Salix sp.)*				2 (2RW)	2					
Hazel (*Corylus avellana L.*)	10	3	13 (13RW)	4 (4RW)	4 (4RW)	18	7 (7RW)		12 (12RW)	10 (10RW)
Oak (*Quercus sp.*)	2	6	4 (4RW)		3	2	6 (5RW)	3		10 (4RW)
Elder (*Sambucus nigra L.*)			2 (2RW)		8 (8RW)		1 (1RW)		2 (2RW)	
Birch *(Betula sp.)*					2 (2RW)		4 (3RW)			
Maloideae sp.			3		1		1			
Notes	Mature fragments	Badly fragmented	Large Maloideae fragments			Numerous small twigs		Badly fragmented		
Plant Macrofossils										
Wild seeds										
Hazelnut (*Corylus avellana L.*) shell				0.14g	0.66g	0.20g	0.55g		1	0.79g
Cleaver (*Galium aperine*)		1							3	
Harebell (*Campanula rotundifolia*)					1					
Cereals										
Emmer wheat (*Triticum dicoccum*)					12	9	13		2	2
Indet. cereal					6	9				

Table 16. Recovered charred palaeobotanical and charcoal remains from Pit Cluster 2. Green highlight indicates material suitable for radiocarbon dating.

Sample No.	587	588	549	555
Context No.	4290	4292	4219	4235
Description	Pit [4289] from Cluster 3	Pit [4291] from Cluster 3	Undated Backfill of pit [4218]	Undated Stakehole [4234]
Charcoal				
Quantity	10.73g	10.92g	1.18g	1.27g
Alder (*Alnus glutinosa Gaertn.*)	4			
Hazel (*Corylus avellana L.*)	8 (8RW)	4		
Oak (*Quercus sp.*)	2 (2RW)	9	2	
Field maple (*Acer campestre L.*)	2			
Notes			Badly fragmented	Badly fragmented
Plant Macrofossils				
Wild seeds				
Hazelnut (*Corylus avellana L.*) shell	4.56g	2.29g		
Cereals				
Emmer wheat (*Triticum dicoccum*)	4			

Table 17. Recovered charred palaeobotanical and charcoal remains from Pit Cluster 3 and undated features. Green highlight indicates material suitable for radiocarbon dating.

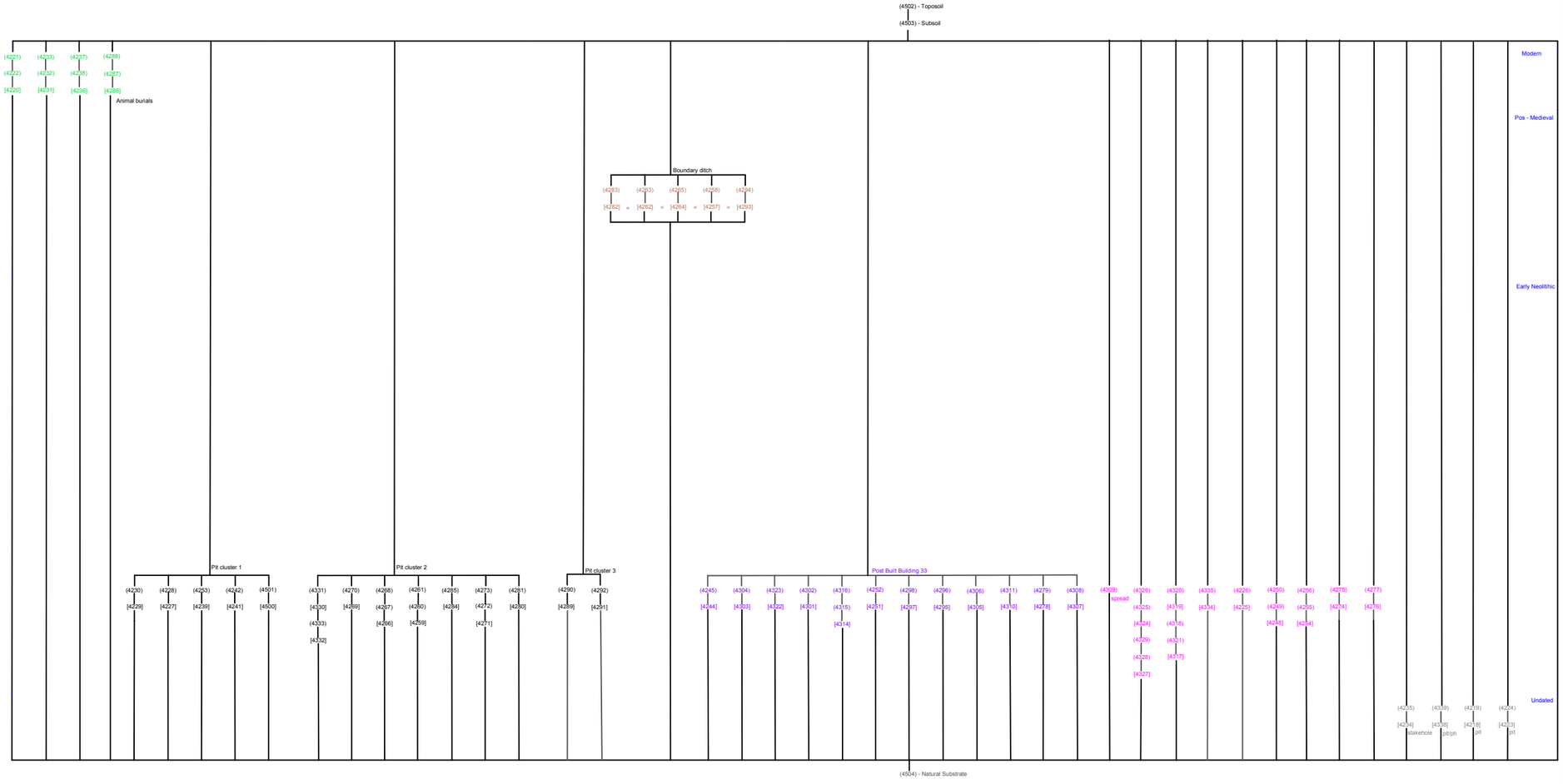
APPENDIX IV - OSTEOLOGICAL INVENTORY

Context	Element	Taxon	Butchery	Gnawing	Age	Metric	Preservation
4220	5 thoracic vertebrae, 7 lumbar vertebrae, 4 R ribs, 9 L ribs, L scapula, L radius, L ulna, L MTC, 2 x proximal phalanges, 2 intermediate phalanges, R and L pelvis (pubis and ilium), R femur, R tibia, L femur, L tibia	O	N	N	Infant/juvenile <10 months	n/a	good
4232	Skull, 5 cervical vertebrae, 8 thoracic vertebrae, 9 lumbar vertebrae, 2 caudal vertebrae, 7 L ribs, 8 R ribs, sacrum, R and L scapulae, R and L humeri, L radius, pelvis, L femur, L tibia	O	N	N	Juvenile 10-12 months	RA- Bp: 33.6 RA- Dp: 19.0	good
4237	3 lumbar vertebrae, sacrum, 1 caudal vertebra, pelvis, L femur	O	N	N	Subadult /adult ≥3 years	FE-Bp:56.2 FE-Sd:20.8 FE-GL:204.5	good
4287	5 cervical vertebrae, 11 thoracic and 7 lumbar vertebrae, sacrum, and 3 caudal vertebrae, 11 R ribs, 13 L ribs, R humerus, R radius, R ulna, R and L scapulae, pelvis, R and L femora, R tibia, R and L patellae, sternum, R astragalus, R calcaneum, R os carpale, 2 proximal, 2 intermediate, and 3 distal phalanges,	O	N	N	Subadult ≥3 years (fusing prox HU and prox TI)	HU-HTC:18.3 FE-BP:56.9 FE-Bd:46.8 FE-GL:203.5 FE-GLC:196.0 CA-GL:66.3	good

Table 18. Inventory of animal bone, Cheviot Quarry 2018 (p – proximal, d – distal, UD – unfused diaphysis, UE – unfused epiphysis, X – diaphysis and epiphysis, F – fusing, S- fused; O – ovis aries, MM – medium mammal; '-' – not observable).

APPENDIX V – STRATIGRAPHIC MATRIX

Harris Matrix



Key:

- Period
- Animal burials
- Boundary Ditch
- Pit Cluster 1 to 3
- Post-Built Building 33
- Associated features to Post-Built Building 33
- Undated Features

APPENDIX VI - RADIOCARBON DATING CERTIFICATES

Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

15 August 2018

Laboratory Code	SUERC-81233 (GU48577)
Submitter	Luke Parker Archaeological Research Services Ltd Angel House Portland Square Bakewell Derbyshire DE45 1HB
Site Reference	LAN'18
Context Reference	(4298) Posthole from PBB 33
Sample Reference	LAN'18.3
Material	Charcoal : Hazel (Corylus avellana L.)
$\delta^{13}C$ relative to VPDB	-27.8 ‰
Radiocarbon Age BP	4922 ± 24

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.

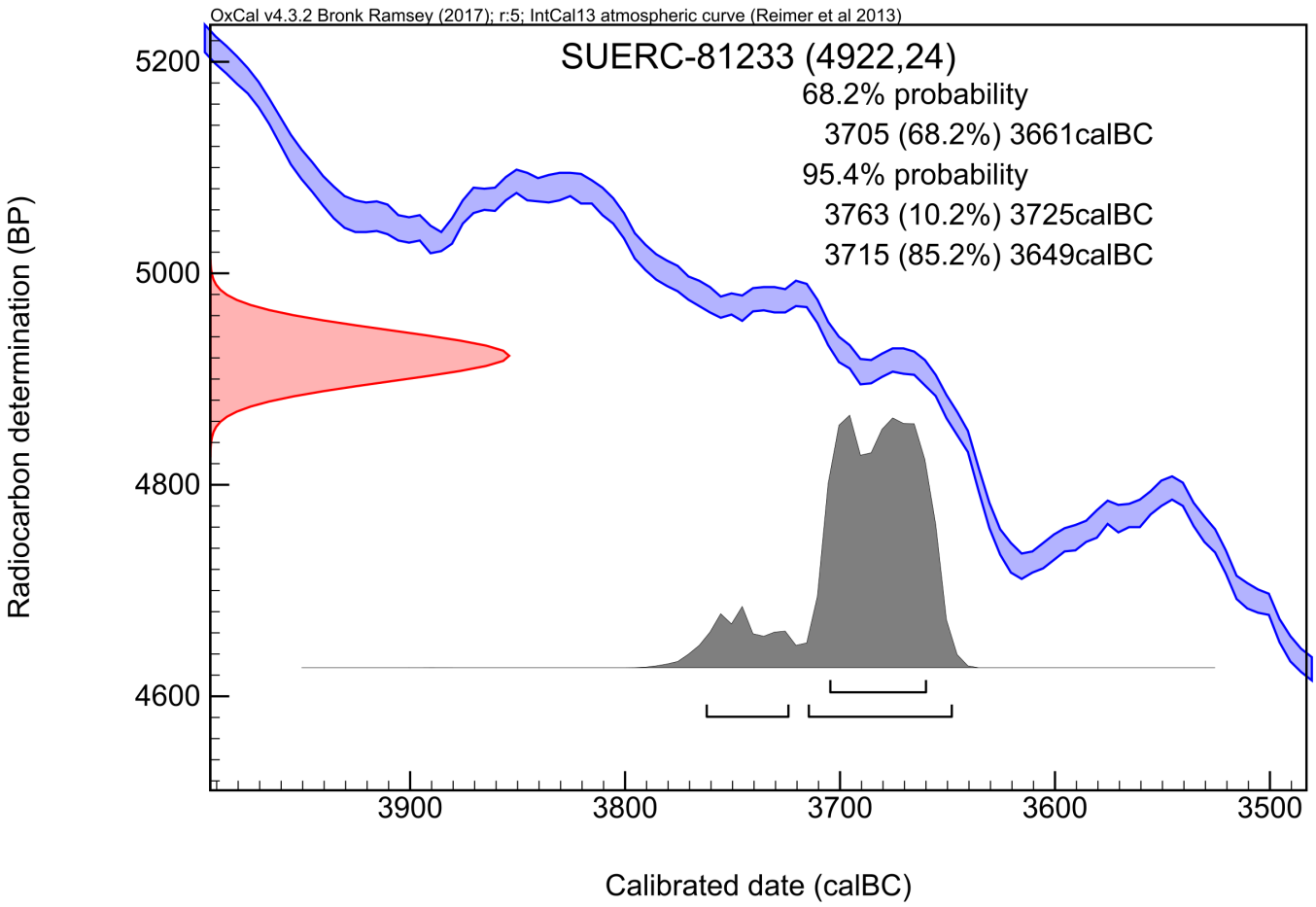
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

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

15 August 2018

Laboratory Code	SUERC-81234 (GU48578)
Submitter	Luke Parker Archaeological Research Services Ltd Angel House Portland Square Bakewell Derbyshire DE45 1HB
Site Reference	LAN'18
Context Reference	(4304) Posthole from PBB 33
Sample Reference	LAN'18.4
Material	Charcoal : Birch (Betula sp.)
$\delta^{13}C$ relative to VPDB	-23.7 ‰
Radiocarbon Age BP	4994 ± 24

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.

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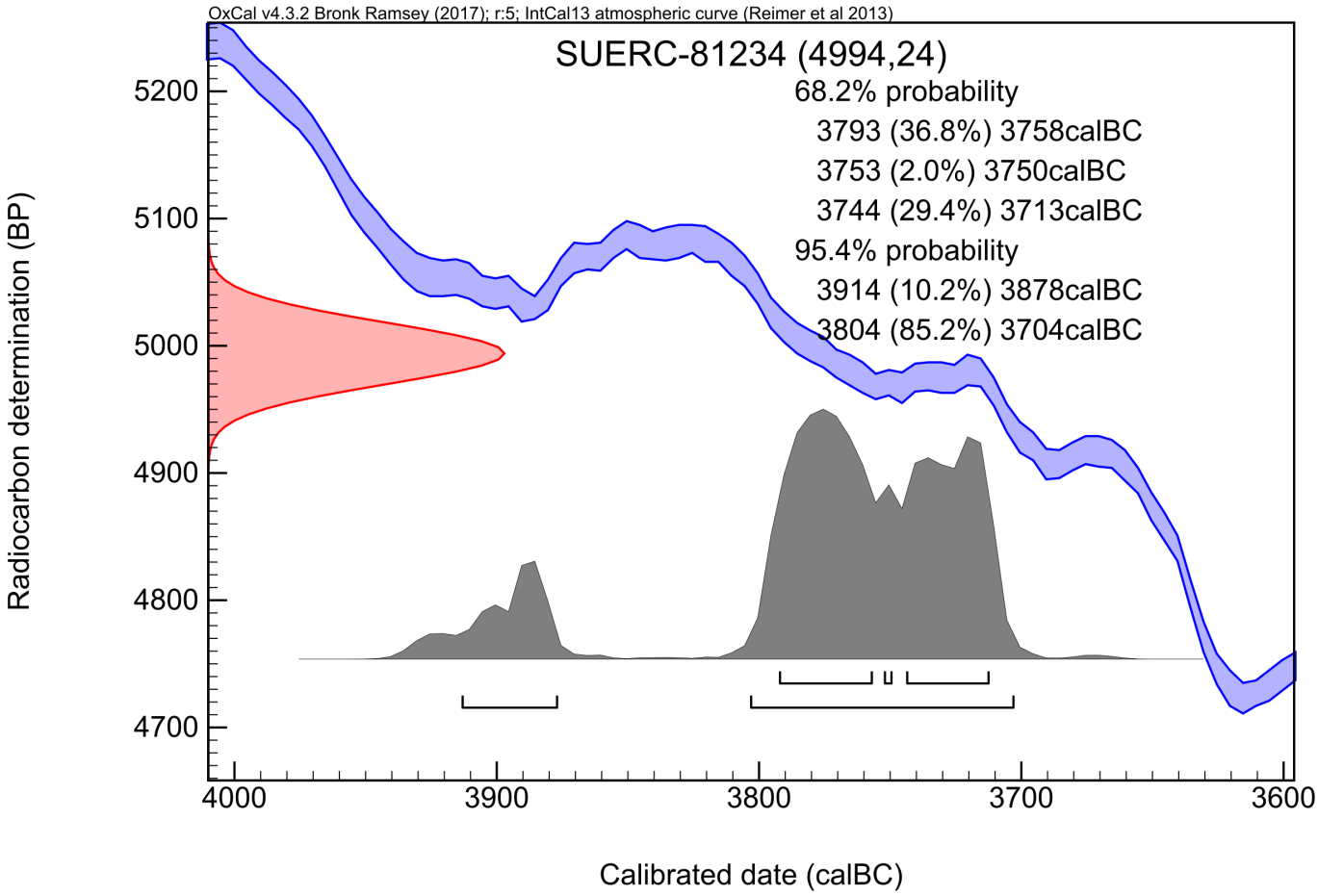
For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

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

15 August 2018

Laboratory Code	SUERC-81236 (GU48580)
Submitter	Luke Parker Archaeological Research Services Ltd Angel House Portland Square Bakewell Derbyshire DE45 1HB
Site Reference	LAN'18
Context Reference	(4292) Pit from pit cluster 3
Sample Reference	LAN'18.6
Material	Charred nut shell : Hazel (Corylus avellana L.)
$\delta^{13}C$ relative to VPDB	-26.3 ‰
Radiocarbon Age BP	4951 ± 21

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.

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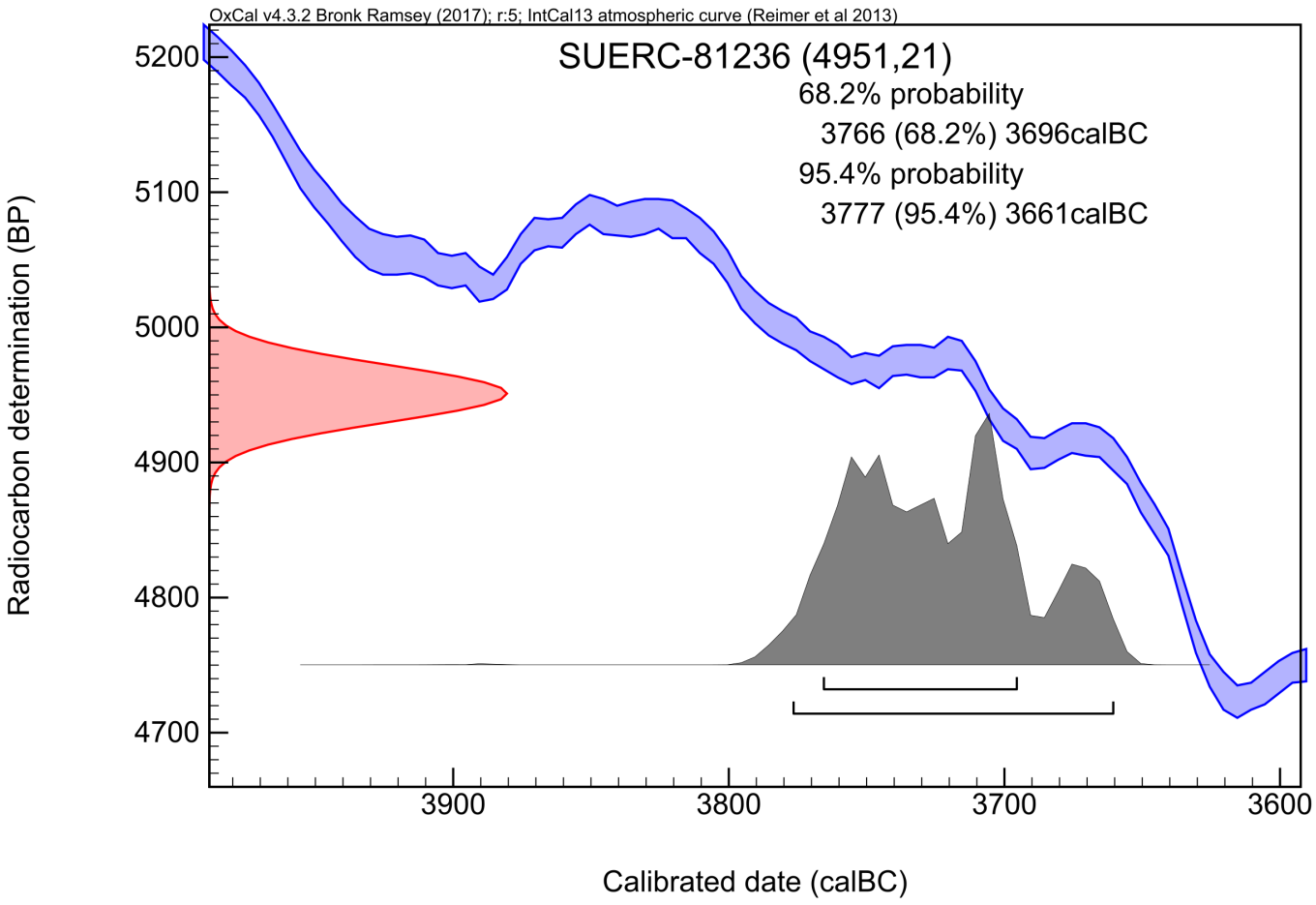
Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

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

31 August 2018

Laboratory Code	SUERC-81491 (GU48576R)
Submitter	Luke Parker Archaeological Research Services Ltd Angel House Portland Square Bakewell Derbyshire DE45 1HB
Site Reference	LAN'18
Context Reference	(4243) Lower fill of waste pit from pit cluster 1
Sample Reference	LAN'18.2
Material	Charred cereal : Triticum dicoccum
$\delta^{13}C$ relative to VPDB	-25.0 ‰ assumed
Radiocarbon Age BP	4991 ± 31

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.

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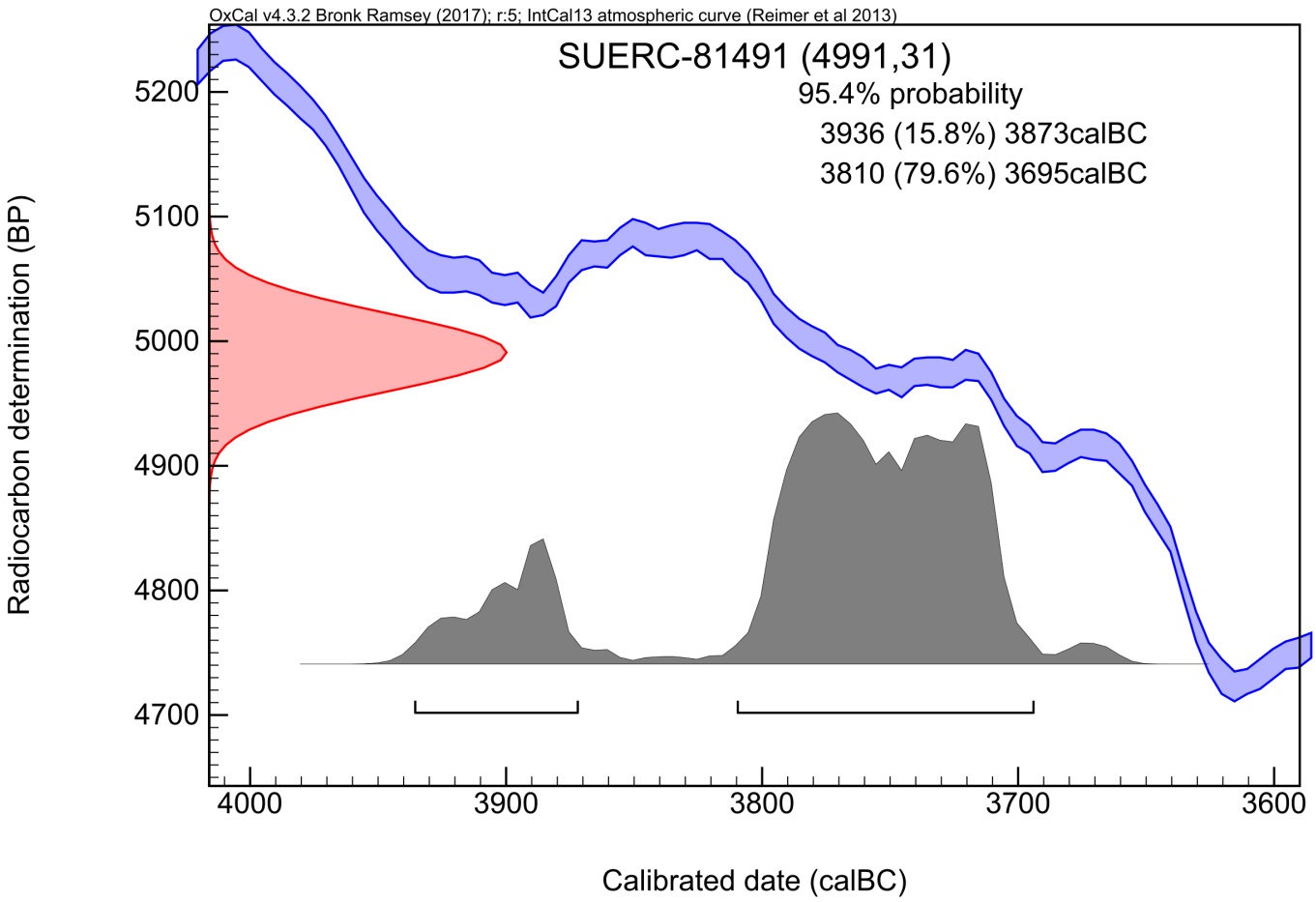
Conventional age and calibration age ranges calculated by : E. Dunbar

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

31 August 2018

Laboratory Code	SUERC-81492 (GU48579R)
Submitter	Luke Parker Archaeological Research Services Ltd Angel House Portland Square Bakewell Derbyshire DE45 1HB
Site Reference	LAN'18
Context Reference	(4256) Upper fill of waste pit inside PBB 33
Sample Reference	LAN'18.5
Material	Charred cereal : Triticum dicoccum
$\delta^{13}C$ relative to VPDB	-25.6 ‰
Radiocarbon Age BP	4968 ± 31

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.

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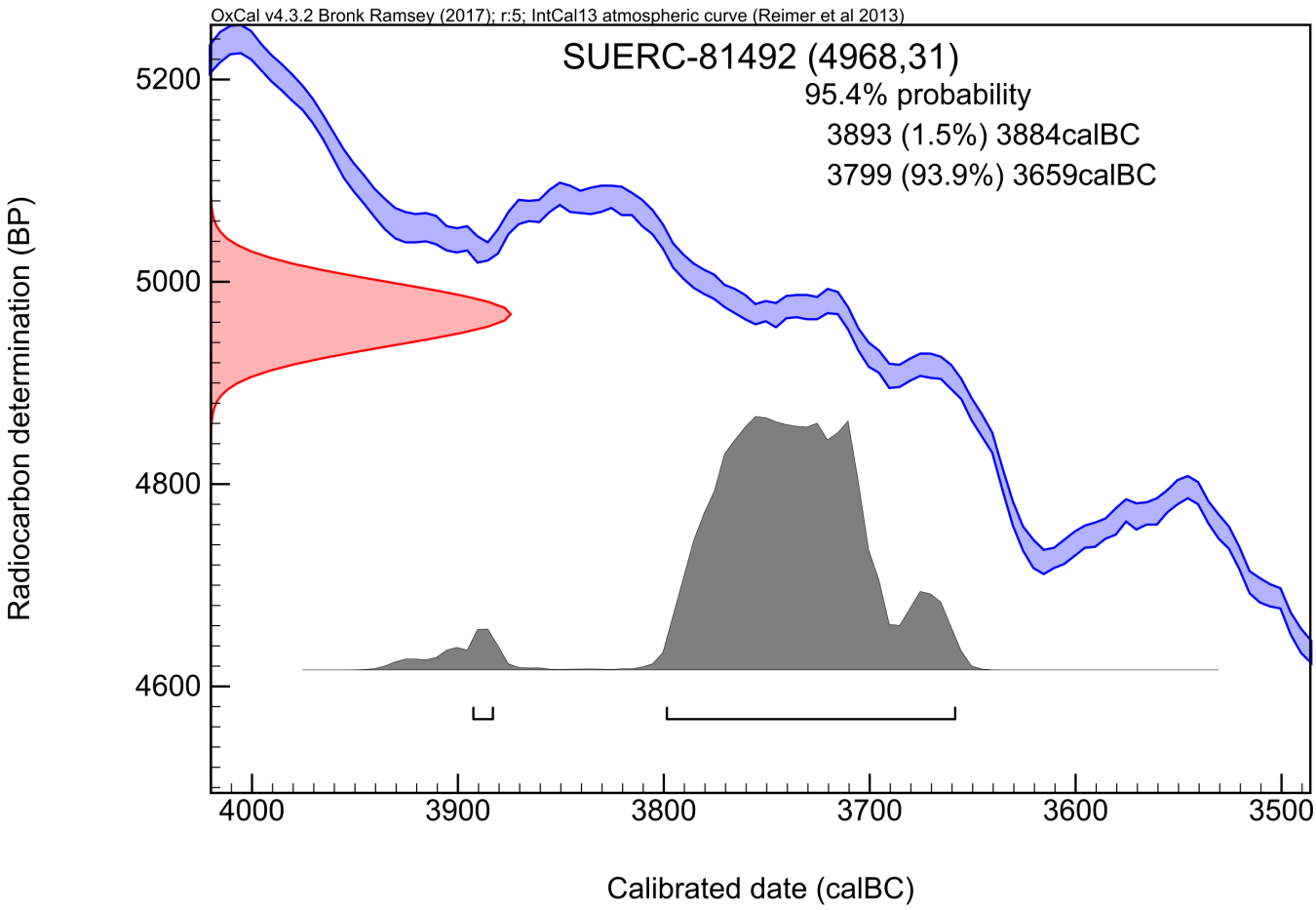
Conventional age and calibration age ranges calculated by : E. Dunbar

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*

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RADIOCARBON DATING CERTIFICATE

31 August 2018

Laboratory Code	SUERC-81491 (GU48576R)
Submitter	Luke Parker Archaeological Research Services Ltd Angel House Portland Square Bakewell Derbyshire DE45 1HB
Site Reference	LAN'18
Context Reference	(4243) Lower fill of waste pit from pit cluster 1
Sample Reference	LAN'18.2
Material	Charred cereal : Triticum dicoccum
$\delta^{13}C$ relative to VPDB	-25.0 ‰ assumed
Radiocarbon Age BP	4991 ± 31

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.

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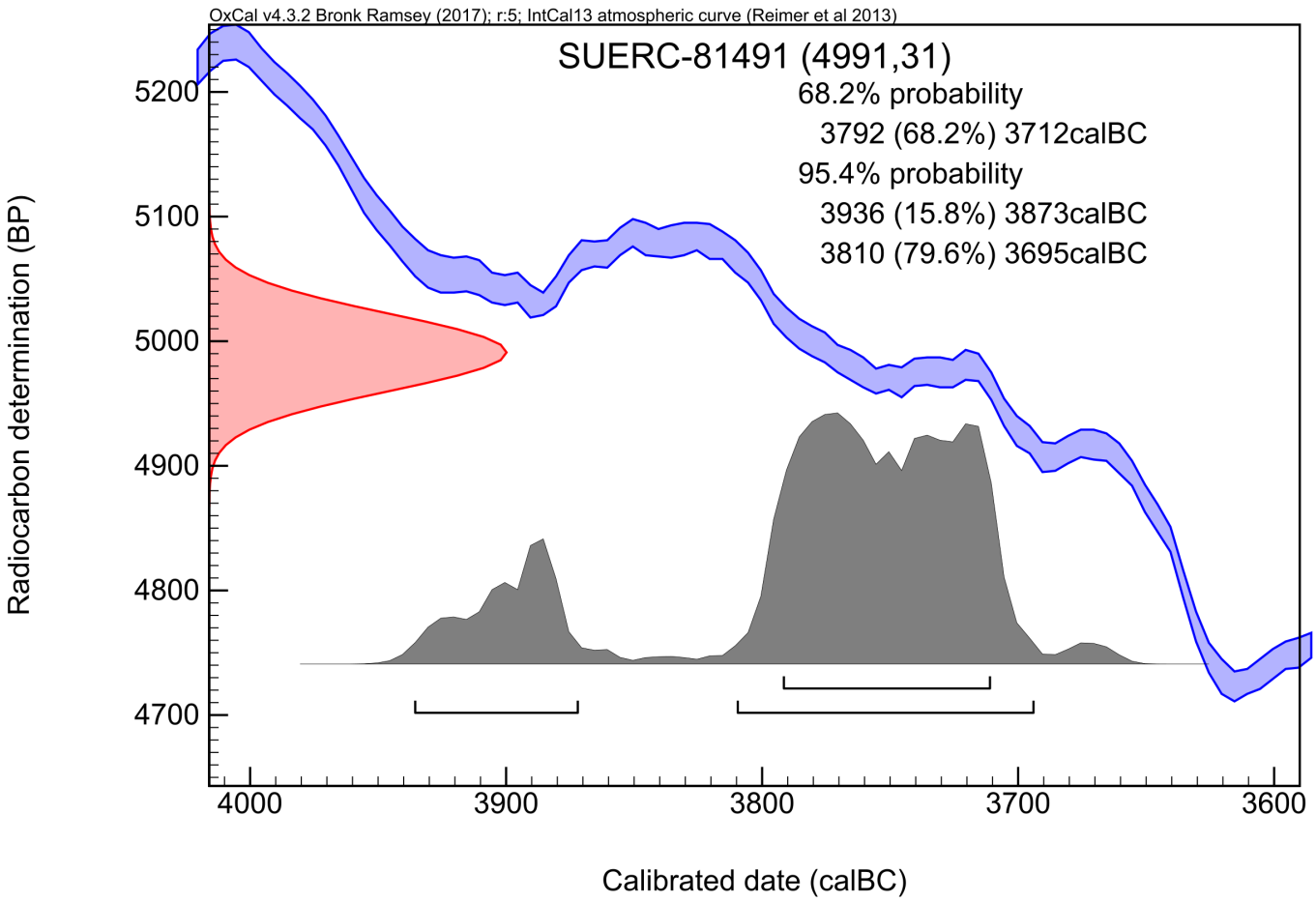

The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

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

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† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE

31 August 2018

Laboratory Code	SUERC-81492 (GU48579R)
Submitter	Luke Parker Archaeological Research Services Ltd Angel House Portland Square Bakewell Derbyshire DE45 1HB
Site Reference	LAN'18
Context Reference	(4256) Upper fill of waste pit inside PBB 33
Sample Reference	LAN'18.5
Material	Charred cereal : Triticum dicoccum
$\delta^{13}C$ relative to VPDB	-25.6 ‰
Radiocarbon Age BP	4968 ± 31

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.

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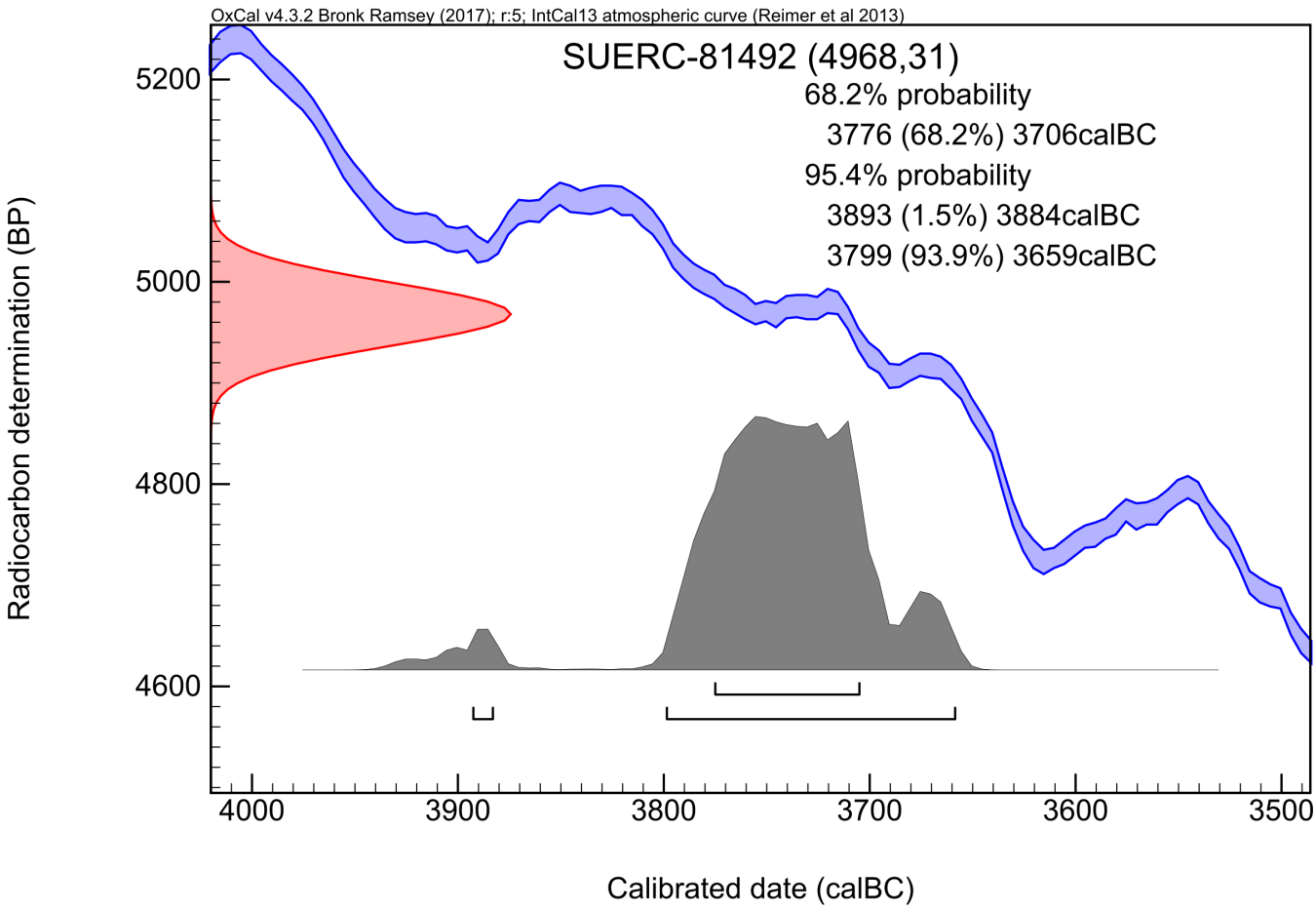

The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

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

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

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† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE

11 September 2018

Laboratory Code	SUERC-81626 (GU48727)
Submitter	Luke Parker Archaeological Research Services Ltd Angel House Portland Square Bakewell Derbyshire DE45 1HB
Site Reference	LAN'18
Context Reference	(4272) Lower fill of pit from pit cluster 2
Sample Reference	LAN'18.1
Material	Charred cereal : Triticum dicoccum
$\delta^{13}C$ relative to VPDB	-25.3 ‰
Radiocarbon Age BP	4949 ± 28

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.

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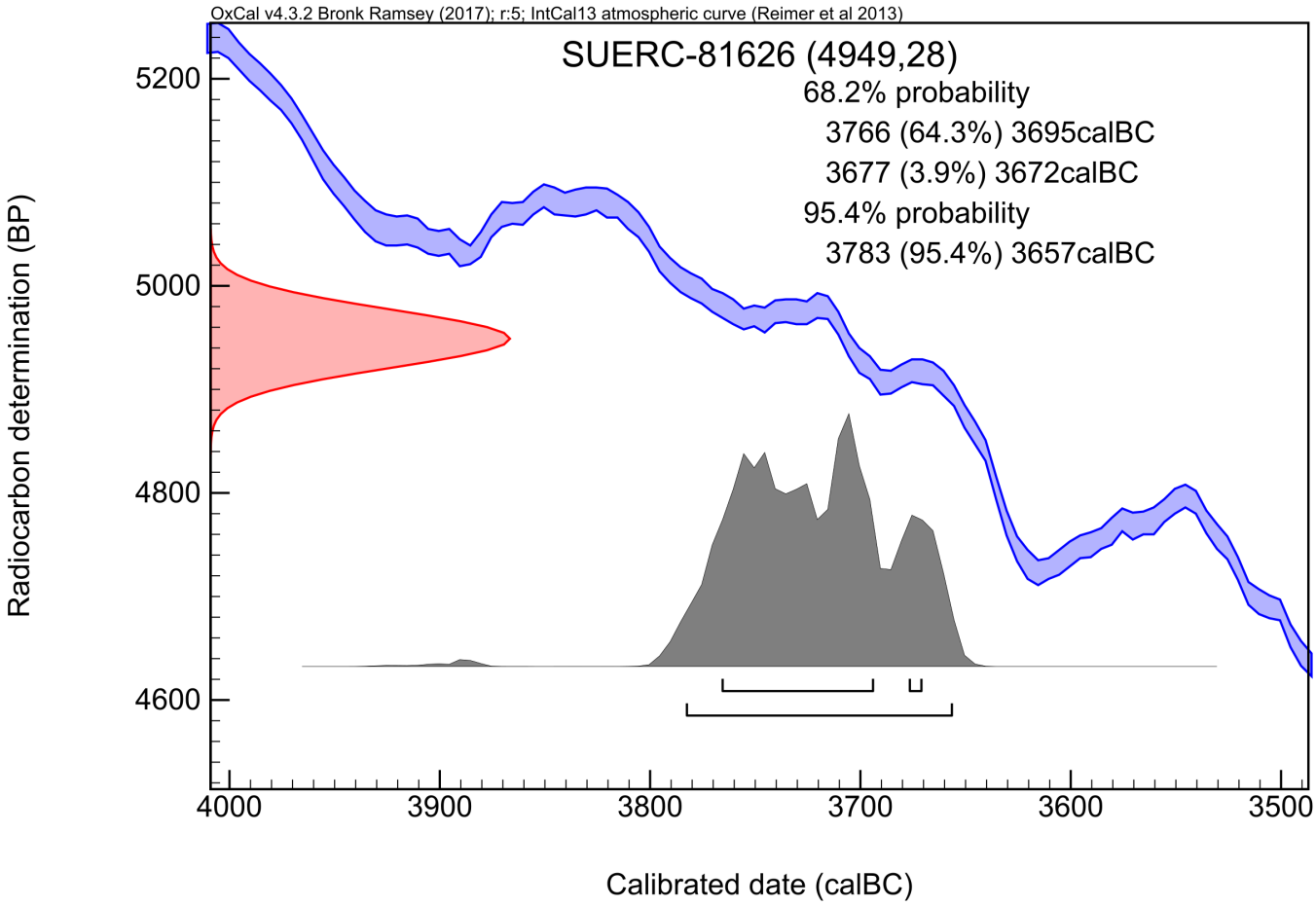
Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by :



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*

APPENDIX VII – OASIS FORM

OASIS DATA COLLECTION FORM: England

Printable version

OASIS ID: archaeol5-319989

Project details

Project name	Archaeological Excavations at Cheviot Quarry, Northumberland Phase 10, 2018
Short description of the project	Archaeological excavations carried out in advance of gravel extraction at Cheviot Quarry in Northumberland, which identified prehistoric and post-medieval features, as well as Neolithic vessels, and potential structures
Project dates	Start: 09-05-2018 End: 08-06-2018
Previous/future work	Yes / Yes
Any associated project reference codes	LAN18 - Sitecode
Type of project	Recording project
Site status	None
Current Land use	Industry and Commerce 5 - Mineral extraction
Monument type	LONGHOUSE Neolithic
Monument type	PIT CLUSTER Neolithic
Monument type	BOUNDARY DITCH Post Medieval
Significant Finds	POTTERY Neolithic
Significant Finds	POTTERY Post Medieval
Significant Finds	LITHICS Neolithic
Investigation type	"Open-area excavation"
Prompt	Planning condition

Project location

Country	England
Site location	NORTHUMBERLAND BERWICK UPON TWEED WOOLER Cheviot Quarry
Postcode	NE71 6TD
Study area	1.63 Hectares
Site coordinates	NT 95399 31135 55.573851885204 -2.07297819921 55 34 25 N 002 04 22 W Point
Height OD / Depth	Min: 46.03m Max: 49.7m

Project creators

Name of Organisation	Archaeological Research Services Ltd
Project brief	Archaeological Research Services Ltd

originator	
Project design originator	Archaeological Research Services Ltd
Project director/manager	Clive Waddington
Project supervisor	Rupert Lotherington
Type of sponsor/funding body	developer
Name of sponsor/funding body	Tarmac Ltd

Project archives

Physical Archive recipient	Great North Museum
Physical Contents	"Animal Bones","Ceramics","Environmental","Worked stone/lithics"
Digital Archive recipient	Northumberland HER
Digital Contents	"none"
Digital Media available	"GIS","Images raster / digital photography","Survey","Text"
Paper Archive recipient	Great North Museum
Paper Contents	"none"
Paper Media available	"Context sheet","Drawing","Photograph","Plan","Report","Section","Survey "

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Archaeological Excavations at Cheviot Quarry, Northumberland Phase 10, 2018
Author(s)/Editor(s)	Lotherington, R.
Other bibliographic details	2018/99
Date	2018
Issuer or publisher	Archaeological Research Services Ltd
Place of issue or publication	Tyneside
Description	Results of the tenth phase of excavations carried out by Archaeological Research Services Ltd, carried out at Cheviot Quarry (previously referred to as Lanton Quarry). Neolithic structures and midden pits identified as well as post-medieval and modern agricultural features identified such as boundary ditches and animal burials

Entered by	Rupert Lotherington (rupert@archaeologicalresearchservices.com)
Entered on	15 June 2018

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