



Cotes Road Barrow-upon-Soar Leicestershire

Archaeological Evaluation Report



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**Cotes Road, Barrow-upon-Soar
Leicestershire**

NGR SK 5740 1838

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Summary

In August 2005, Oxford Archaeology (OA) carried out a twenty-three trench archaeological field evaluation on land between Cotes Road and Willow Way, Barrow-Upon-Soar, Leicestershire (NGR SK 5740 1838) on behalf of John Samuels Archaeological Consultants. The investigation was carried out in advance of a proposed housing development scheme by David Wilson Homes Ltd. and Miller Homes Ltd. Early Iron Age ditches indicate possible settlement of this date in the vicinity, although no structural remains were discovered. The remains of medieval 'sod kilns' were revealed beneath the medieval ploughsoil in two trenches. The remains of a complex of five 'Pot kilns' and track-ways depicted on OS maps of the 1880s were identified to the centre of the site. These are post-medieval in date, as were the remains of rectangular 'Pye kilns' found in other trenches. Many of the trenches were cut through previously infilled stone quarries and clay pits. Historically the area was used for limestone and clay quarrying, and historical records indicate an area of industrial activity here from the medieval period to the 19th century.

1 INTRODUCTION

1.1 Location and scope of work

- 1.1.1 Between August 29th and September 12th 2005, Oxford Archaeology (OA) carried out an archaeological evaluation at land between Cotes Road and Willow Way, Barrow-upon-Soar, Leicestershire (NGR SK 5740 1838).
- 1.1.2 The work was commissioned by John Samuels Archaeological Consultants (JSAC) on behalf of David Wilson Homes Ltd. (East Midlands) and Miller Homes Ltd. (East Midlands). The development consists of residential housing and new roads and access to main highways. Open landscaped areas are to be provided for public recreation and leisure facilities (Planning Ref. P/04/0999/2).
- 1.1.3 The development area is located between Cotes Road and Willow Way and lies 1 km north-west of the historic core of Barrow-Upon-Soar (Fig. 1). The site incorporates several fields and is bounded to the north by agricultural pasture, to the west by Cotes Road and to the south by Willow Way. An east-west aligned lane (Strancliffe Lane) divides the north and south parts of the site.

1.2 Geology and topography

- 1.2.1 The surface geology consists of Jurassic and Cretaceous clay and drift; the underlying bedrock is Permo-Triassic grey mudstone and reddish till.
- 1.2.2 The area of trenching comprises six separate fields (Fig. 2). The north part of the site to the north of Strancliffe Lane includes Fields 1, 2, and 4, all currently under pasture at the time of the work. Field 3 was developed in the 20th century.
- 1.2.3 There are several modern houses on the Cotes Road; a former nursery with outbuildings, glasshouses and orchards occupies the remainder of the field. The

ground level gradually slopes from c. 68 m OD at the east end of the site to c. 64 m OD at the west end of the site by Cotes Road (see Fig. 2).

- 1.2.4 The southern part of the site (south of Strancliffe Lane) is separated into two fields. The western field (Field 5) was fallow and lay at 68.5 m OD. Field 6 to the east lay fallow and was gently undulating, sloping down to the south towards Willow Way. The ground level rises from c. 57 m OD at the south end to 68.6 m OD at the north.

1.3 Archaeological and historical background

- 1.3.1 The background is based on two Desk-based Assessments undertaken by JSAC for their clients (JSAC 2000 and 2004), summarised here, with some additional research by OA.

Prehistoric and Roman

- 1.3.2 The earliest human activity in the vicinity of the evaluation is suggested by several cropmarks. A Bronze Age ring ditch has been identified on aerial photographs to the west of Cotes Road (SMR SK 51NE.K). Artefacts recovered from the site between 1991 and 1998 include 37 Roman coins, 13 Roman brooches, 2 Iron Age coins and 2 early Anglo Saxon brooches.
- 1.3.3 A Roman road (the Salt Way) lies 1.5 km south of the proposal site (SMR 51NE/BN) and there may be a Roman small town located along the road on or near the crossing point on the River Soar in the neighbouring Quorndon parish (SMR 51NE.CM).
- 1.3.4 There was thought to be good potential for surviving prehistoric archaeology within the development site and evidence is recorded for prehistoric activity within the area of proposed development. Several circular and linear crop marks identified in fields approximately 6 km to the west and have been attributed to prehistoric enclosures.

Medieval

- 1.3.5 The earliest reference to the place name Barrow is 1086, when it was recorded in Domesday as *Barhou*. The name has derived from either *Bearhu*, meaning 'grove, wood' or from *beorg*, meaning 'hill'.
- 1.3.6 Barrow-Upon-Soar has been linked to the production of lime since the medieval period and is first mentioned in 1396. An account in the 15th century records 55 lime-pits at Barrow and the lime was used in the building of the Kirby Muxloe Castle in 1481. A map based on a survey carried out between 1775 and 1777 by J Prior records four lime-works at Barrow (VCH Leicestershire, Vol. 2). The Ordnance Survey map of 1885 shows 'Lime Quarries and Kilns' in the vicinity. The industry was still strong in the 18th and 19th centuries and Barrow was well known for its lime production, because its products had strong binding properties and commanded a higher price than other neighbouring lime producing centres.
- 1.3.7 There was thought to be good potential for surviving medieval archaeology relating to lime production on or near the site; ridge and furrow is evident in Field 5. Two

geophysical surveys carried out in 2000 and 2003 suggested features of this date were possible on the site (GSB 2000 and 2003).

Post-medieval/Victorian

- 1.3.8 Cartographic evidence from the 1885 Ordnance Survey map suggests that two large limestone quarries were located within Field 6. One quarry was located in the centre/north of the field and is still evident from a depression in the ground. Another larger quarry was some 200 m across. They both provided lime for an industrial complex of eight lime producing ‘pot kilns’ in the north-west corner of the field.
- 1.3.9 A dotted line on the map indicates a linked access between the lime-kilns, the northern quarry on Strancliffe Lane and a further lime extraction quarry to the field north of the Strancliffe Lane. A small clay pit has also been marked on the 1885 OS map at the southern end of Field 6. As a result there was thought to be some potential for areas of archaeology to have survived between the quarries.

2 EVALUATION AIMS

- 2.1.1 The aims of the evaluation were to determine the location, extent, date, character, and state of preservation of any archaeological remains surviving within the development area. Attention was given to remains of all periods, including those relating to the extraction and production of lime in the 19th century.
- 2.1.2 To inform arrangements, so far as is reasonably practicable, for the preservation *in situ* of important archaeological remains within the scheme’s designated open spaces, and to assess to what extent development proposals may damage archaeological deposits and features on the boundaries of the open spaces close to the scheme’s blue line development.
- 2.1.3 To determine the potential for, and the nature of, the features thought to be associated with industrial lime production, a process with which Barrow-Upon-Soar has been related since the early medieval period.
- 2.1.4 To make available the results of the evaluation.

3 EVALUATION METHODOLOGY

3.1 Scope of fieldwork, methods and recording

- 3.1.1 The evaluation trenches were located to investigate features identified on the Ordnance Survey maps and other historical maps or were situated close to areas of known activity to assess the distribution of features previously identified by two geophysical surveys carried out in 2000 and 2003 (GSB Prospection). The evaluation consisted of 23 machine-excavated trenches (Fig. 2). A JCB excavator fitted with a toothless bucket was used to excavate the trenches within Fields 1, 2, 3, 4 and 5. A 360° tracked excavator was used to excavate the thirteen evaluation trenches in Field 6 where tracking was possible. Trenches were opened under archaeological supervision and the machining proceeded down to the first significant archaeological

horizon or to the depth of the natural geology. The trenches were cleaned by hand and the revealed features were sample excavated to determine their extent and nature, and to retrieve finds and environmental samples.

- 3.1.2 All archaeological features were planned and where excavated, their sections drawn at scales of 1:20 or 1:50. All features were photographed using colour slide and black and white print film. Recording followed procedures detailed in the *OA Fieldwork Manual* (ed. D Wilkinson, 1992). The spoil heaps were monitored to allow analysis of the spatial distribution of artefacts and for finds retrieval.

3.2 Finds and environmental

- 3.2.1 Finds were recovered by hand during the course of the excavation and were bagged by context. Finds of special interest were given a unique small find number. Samples were taken from features where dateable materials had been recovered. The prehistoric features were identified as being potentially rich in environmental material and were sampled routinely for small artefacts when they were revealed in the evaluation trenches.
- 3.2.2 Samples were taken from features that contained areas of burning, residue charcoal and fragments of burnt limestone. These features were thought to be associated with the production of lime and were assessed to determine the potential for understanding the industrial process and in assessing the types of fuel used during the lime production. Where lime-kilns were identified, 40 litres of soil was routinely retrieved and sampling was undertaken regardless of the perceived period of construction. A variety of different lime-kiln structures were identified during the evaluation, including 19th century examples.

4 RESULTS: GENERAL

4.1 Soils and ground conditions

- 4.1.1 The soils encountered during the evaluation were mainly friable well-drained silt loams. Areas of backfilled ground usually consisted of re-deposited tenacious silt clays and natural mudstone.
- 4.1.2 The water table was only reached in the base of excavated features within Trench 9. The soil conditions elsewhere across the site were generally good, well drained and no adverse conditions were encountered.

4.2 Distribution of archaeological deposits

- 4.2.1 Deposits and features were noted across the area of investigation; post-medieval activity dominates the site although prehistoric ditches were also identified. By area the following were noted.
- 4.2.2 To the centre of the site, Trenches 4, 7 and 12 contained 19th century structural evidence of kilns for the production of quicklime. Trenches 3, 5 and 6 to the north-

west of the site contained up to 3 m in depth of re-deposited clay, interpreted as being fills of 19th century lime extraction pits. Trenches 8, 9 and 10 revealed medieval ridge and furrow and ditches below this level were of Iron Age date. Trenches 15, 16, 20 and 23 in the eastern field (Field 6) contained well-preserved medieval ridge and furrow, spreads of charcoal containing burnt limestone and areas of burnt natural giving evidence of medieval lime-kilns. Thick clay layers fill former limestone quarries here.

5 RESULTS: TRENCH DESCRIPTIONS

5.1 Fields 1 - 4

Trench 1 - medieval ridge and furrow

- 5.1.1 Trench 1 (not illustrated) was orientated NNE-SSW, measured 46 m in length and 1.8 m in width and was excavated to a depth of 0.6 m. The earliest deposit was natural (103), a light brown clay containing undisturbed laminated limestone patches. This was overlain by a light brown clay silt ploughsoil (102). The ploughsoil represents medieval ridge and furrow and was overlain by topsoil (101). No archaeological features were noted in the trench and there was no evidence for prehistoric enclosures and/or ditches, as suggested by previous geophysical survey work carried out in the general area of this trench (GSB 2003).

Trench 2 - Iron Age ditch and medieval ridge and furrow

- 5.1.2 Trench 2 (Fig. 3) was orientated ENE-WSW and measured 50 m in length and 1.8 m in width. It was excavated to a depth of 0.75 m OD. The earliest deposit was natural (207), a light brown clay containing limestone patches. The natural was cut by a north to south ditch (204, Plate 1). The ditch profile comprised parallel sides with an undulating base and measured 0.32 m deep with a width of 1.8 m. The ditch contained a single fill (203) of brown clay silt with charcoal flecks. Several sherds of early Iron Age pottery and butchered animal bone, including rarely found pike fish bones, were recovered. Ditch 204 was truncated on its western edge by a semi-circular tree hole (206). This had poorly defined irregular edges and contained a single fill of red brown silt clay (205). The fills of both features were overlain by a light brown clay loam ploughsoil (202), the remnants of medieval ridge and furrow. This ploughsoil was overlain by topsoil (201).

Trench 3 - 19th century quarry

- 5.1.3 The trench (not illustrated) was orientated NE-SW and measured 43 m in length and 1.8 m in width and was excavated to an average depth of 0.6 m. The trench was shortened from the original length of 50 m because of the close proximity of a standing glasshouse. The earliest deposit was natural (303), a light grey mudstone and clay that was exposed in a deep sondage at the east end of the trench at a depth of 3 m. The remainder of the trench comprised re-deposited clay and mudstone (302), presumably the fills of a probable 19th century limestone or clay extraction quarry.

The fills were sealed by a former topsoil (301), beneath the present topsoil (300). No archaeological features were noted within the trench.

Trench 4 - single lime-kiln

- 5.1.4 Trench 4 was orientated NE-SW and measured 50 m in length and 1.8 m in width. It was widened to 5.9 m at the east end to investigate features here. The trench was on average 0.5 m deep (Fig. 4). The earliest deposit was a light grey natural mudstone and clay (407) that was observed 2 m below ground in a machine excavated sondage at the west end of the trench (Fig. 4, section 401). Natural was overlain by a series of re-deposited clay layers. The earliest was 415, a brown and grey silt clay, overlain by red brown clay loam (416), similar to layer 411 along the trench (Fig. 4, section 402). Layers 415 and 411 were overlain by a clean clay layer 410, which was subsequently overlain by another re-deposited red brown clay loam deposit 409. Layer 402 overlay deposit 409, a clean layer of light brown clay with no visible inclusions.
- 5.1.5 An elongated pit (construction cut 403; Plates 2 & 3) cut through clay layer 402 at the east end of the trench and necessitated the widening of the trench. The feature is interpreted as the remains of a lime-kiln (structure number 408). Excavation revealed a sub-rectangular structure with 45° sloping sides and a rounded base forming a hollow. Though the lower extent of the structure was poorly defined, it had clearly been subjected to intense temperatures by burning, as the adjacent clay layer (402) was near black in colour. Deposit 406, the upper fill, was a red/brown clay silt and represents the backfill of the lime-kiln after it was last drawn. Deposit 406 overlay 413, the clay forming the burnt edges of the kiln. The fill also overlay a compacted surface of mortar (405), which had a concave profile and is the remains of the lime-kiln base. The mortar overlay fill 404, which was a light brown/red clay silt and probably reflects the scorching of material related to deposit 409. Fill 406 was overlain by a former ploughsoil/topsoil (401) and sealed by the present topsoil (400).

Trench 5 - former quarry

- 5.1.6 Trench 5 (not illustrated) was aligned NE-SW and measured 50 m long, 1.8 m wide and 1.6 m deep. The earliest deposit was a mottled layer of re-deposited light reddish brown clay and grey mudstone and clay (503). Two machine-excavated sondages were excavated at each end of the trench to a depth of 1.3 m to determine the depth of deposition but no natural geology was located at this depth. The trench appears to cut a former deep quarry, one of several noted across the site. A former ploughsoil/topsoil (501) overlay the clay, sealed by modern topsoil (500). No archaeological features were noted within the trench.

Trench 6 - former quarry

- 5.1.7 The trench (not illustrated) was orientated NE-SW and measured 50 m in length and 1.8 m in width and was excavated to a depth of approximately 1.2 m. Natural geology (602) was a light grey mudstone and clay, recorded 0.8 m below ground in a machine-cut sondage at the west end of the trench. A tenacious layer of mixed light reddish brown clay and re-deposited grey mudstone and clay overlay the natural. The

layer (603) was observed throughout the trench. Two machine-cut sondages were excavated at each end of the trench to determine the depth of deposit. The deposition is probably similar to or part of the same sequence seen in Trench 5. A former ploughsoil/topsoil (601) sealed this layer and was sealed by the present topsoil (600). No archaeological features were observed and there was no evidence for the strong anomalies thought to represent industrial activity that are indicated by geophysical survey work in this area of the site (Area 4 - GSB 2003).

Trench 7 - former quarry, post-medieval lime-kiln

- 5.1.8 This trench was orientated NE-SW and measured 50 m in length and 1.8 m in width and was excavated to a depth of between 0.5 m and 1.3 m (Fig. 5). The earliest deposit in the trench was natural (702), a grey mudstone and clay layer, seen 1.35 m below ground level. A layer of re-deposited red/brown clay (710) overlay the natural. Re-deposited natural mudstone and grey clay (709) overlay 710, and both layers probably represent backfill deposits within a former limestone extraction pit, the limits of which were not identified within the trench.
- 5.1.9 Deposit 709 was cut by a sub-rectangular structure (703) with gradual 35° sloping sides at the western end, and 45° sloping sides at the eastern end; the base of the structure was not exposed. The structure formed a hollow and is interpreted as a lime burning or pye-kiln (Plate 4).
- 5.1.10 The primary deposit in the structure, clay fill 712 in the base of the kiln, represents the fired natural geology. Fill 711 above consisted of loose mixed ash, limestone fragments and small lumps and flecks of charcoal and is thought to represent the remnants of the drawn out heated lime (quicklime). Fill 708 overlay fills 712 and 711 and consisted of loose red brown clay and grey mudstone and clay. The deposit was mixed and contained lumps of mudstone, burnt limestone and vitrified broken bricks. The vitrified bricks may have been part of the kiln structure itself, possibly used to support the kiln's earth-built walls. Fill 707 overlay fill 708 and was a friable dark brown clay and grey mudstone and had been subjected to higher temperatures than fill 708 but is presumably the same material. Fills 706 and 705 are also derived from the same material and represent backfilled waste from when the kiln was last drawn. The uppermost kiln fill, 705, was overlain by mid grey/brown clay loam layer 704, which represents a buried topsoil or ploughsoil similar to layer 701 and may be the same deposit. The plough soil was overlain by modern topsoil (700).

5.2 Field 5

Trench 8 - Iron Age ditch; 19th century track-way

- 5.2.1 Trench 8 (Fig. 6) was orientated NE-SW and measured 50 m in length and 2 m in width and was excavated to a depth of 0.75 m. The earliest deposit in the trench was natural (804), a red/brown clay with patches of brown coarse sand. A north to south orientated gully or ditch (806) cut the natural at the east end of the trench.

- 5.2.2 The ditch was concave with a rounded base and contained a single fill of friable mid greyish brown clay silt (807) with charcoal and sherds of early Iron Age pottery. The ditch fill was overlain by a friable, mid orange brown sandy clay (803), a former ploughsoil and part of the medieval ridge and furrow. Layer 802, a layer of friable light brown clay silt representing a post-medieval agricultural horizon overlay the medieval plough soil. Layer 802 was cut at the west end of the trench by a north to south orientated track-way (805), constructed of compacted limestone. The track-way is probably of 19th century date, as it appears on the 1885 OS map of Barrow-Upon-Soar. The track-way was subsequently overlain by topsoil (801).

Trench 9 - Iron Age ditches

- 5.2.3 Trench 9 (Fig. 7) was orientated NW-SE and measured 50 m in length and 2 m wide. The central part of the trench was widened to fully expose and characterise several ditches. The earliest deposit in the trench was natural (904), a soft, mid red brown clay with patches of brown coarse sand.
- 5.2.4 A SW-NE orientated linear ditch (906; Plate 5) in the centre of the trench cut the natural geology. The ditch contained a single fill (905) a light grey/brown clay silt that produced early Iron Age pottery and charcoal, large pieces of limestone and worked animal bone. A NW-SE orientated ditch (909) cut fill 905. The relationship was established prior to the extension of the evaluation trench and ditch 909 was not fully investigated because of excavation constraints (Fig. 7, section 902). The uppermost fills of ditch 909, fills 907 and 908, are similar to fills 910 and 911 within the same ditch 913 (Fig. 7, section 904). Ditch 913 was orientated NW-SE (Plate 6) and had near vertical sides tapering to a rounded base. The primary fills (916, 915 and 914) derived from erosion of the ground surface and were clean with some charcoal flecking. The upper of these fills (914) was overlain by fill 912, a similar grey/brown clay in turn overlain by grey silt clay 911. The upper fill was a yellow/grey silt (910) that contained charcoal. Early Iron Age pottery was recovered from both of the upper fills. The ditch fills were sealed by ridge and furrow ploughsoil (903). This was overlain by ploughsoil (902) and then topsoil (901).
- 5.2.5 Following rain and on the final morning of the investigation, two further ditches (919 and 920) were exposed in the north end of the trench. Full investigation was not possible due to time constraints. The fills (917 and 918) are similar to those seen in other ditches within the trench, therefore, these two ditches have been tentatively assigned a prehistoric/Iron Age date.

Trench 10 - medieval ridge and furrow; undated gully

- 5.2.6 Trench 10 (Fig. 8) was orientated NW-SE and measured 50 m in length and 2 m width and was excavated to a depth of 0.7 m. The natural (1002) consisted of red/brown clay with patches of brown coarse sand. A NE-SW gully (1004) cut the natural. The gully profile was concave with a rounded base and contained a greyish/brown sandy silt fill (1003). The fill was overlain by medieval ploughsoil (1001) then topsoil (1000).

5.3 Field 6

Trench 11 - former quarry

- 5.3.1 Trench 11 (Fig. 9) was orientated west to east. It measured 50 m in length, 2 m in width and was excavated to a maximum depth of 2.6 m. The earliest deposit was a light grey mudstone/clay natural (1103) which was exposed in the western sondage at a depth of 2.6 m. The depth at which this deposit was identified suggests that the trench was located within a former quarry pit. The quarry fill (1102) comprised red/brown clay and mudstone. The extent of the quarry lay outside the trench limits and was sealed by a former topsoil/ploughsoil (1101) and present topsoil (1100).

Trench 12 - 19th century lime-kiln complex and track-way

- 5.3.2 Trench 12 (Fig. 10) was orientated NW-SE and measured 50 m in length and 2 m in width. It was excavated to an average depth of 1.2 m. The trench was widened to investigate lime-kiln structures here. The earliest deposit, the natural subsoil (1204), was a red/brown silt clay which was overlain by 1203, a probably re-deposited natural mudstone. This was overlain by soil layer 1202 (same as 1244 and 1248) that was cut by structures forming a complex of kilns.
- 5.3.3 The best preserved structures consisted of several short lengths of un-burnt red brick and limestone walling exposed in the south-west baulk and forming the western external wall of the complex. Brick structures 1239 and 1246 survived as single courses of red brick of the same dimensions as a more substantial wall (1233). Brick wall 1233 (Plates 7 and 8) was constructed of red bricks measuring 235 mm x 110 mm x 65 mm held in a compact grey lime-based mortar. The wall survived to three courses high and was built of double thickness bricks in English Bond.
- 5.3.4 Three stoking pits associated with the walled structures were identified (1209, 1212 and 1217). Right-angled recesses (Nos. 1253, 1254 and 1255) on the north sides of the stoke pits may represent beam slots. Further similar sized pits were identified within the trench (1223 and 1229) that contained mudstone fills with small pieces of limestone (Plate 8). None of the stoke pits were fully exposed as the safe limits of excavation were reached, but none appear to have internal lining or walling. A compact mortar surface (1240) on the south side of stoke pit 1229 was noted.
- 5.3.5 A NW-SE aligned compact limestone surface (1256; Plate 9) may represent a track-way for cart traffic to the kilns. The surface measured 3.8 m across and was 0.26 m deep. The track-way is similar to that in Trench 14 (Plate 10) and on the same alignment. The track-way is shown on the 1879 Fritche map of Barrow, but does not to extend further south than the lime-kiln complex.

Trench 13 - former quarry

- 5.3.6 Trench 13 (not illustrated) was orientated NW-SE and measured 50 m in length and 2 m in width. A machine sondage at each end of the trench was excavated to a depth of 1.4 m. The deposits encountered within the trench were the similar to those seen in trenches 11, 14, 15, 17, 18, 19 and 21, suggestive of an infilled quarry (1302) sealed

by ploughsoil/former topsoil (1301) and then the current topsoil (1300). No archaeological features were noted within the trench and no natural geology was exposed.

Trench 14 - 19th century track-way

- 5.3.7 Trench 14 (Fig. 11) was orientated SW-NE and measured 53 m in length, 2 m in width and was excavated to a depth of 1.45 m. The trench was extended at the west end to fully expose the limits of a track-way. The earliest deposits within the trench are 1408 and 1405, re-deposited natural clays with mudstone. Layer 1405 was overlain by 1404, a tenacious grey clay silt and mudstone which contained a single sherd of willow pattern pottery. This was, in turn, overlain by 1403 which was partly sealed by a track-way at the west end of the trench. The track-way (1407) comprised compacted limestone and had parallel edges and a minimum depth of 0.16 m. This is probably the same structure seen in Trench 12 (Plate 10). This was covered by ploughsoils 1403, 1402 and 1401. Topsoil (1400) sealed the trench.

Trench 15 - former quarry

- 5.3.8 Trench 15 (not illustrated) was orientated SW-NE and measured 49 m in length and 2 m in width. It was excavated to a depth of 2.2 m in two machine-excavated sondages. The deposits were similar to those in trenches 11, 13, 14, 17, 18, 19 and 21. The re-deposited clay consisted of three separate lenses (1502, 1503 and 1504). The northern sondage revealed re-deposited clay at 1.6 m below ground level and the southern sondage revealed re-deposited material to a depth of 2.2 m. No natural geology was noted within the trench and no archaeological features were seen. The trench appears to have cut a previous quarry.

Trench 16 - medieval lime-kilns

- 5.3.9 Trench 16 (Fig. 12) was orientated NW-SE and measured 50 m in length, 2 m in width and was excavated to a depth of 0.75 m. Natural mudstone (1603) was cut at the south end of the trench by two charcoal filled spreads or features (1606 and 1607) interpreted as the remains of lime-kilns or 'sod-kilns' after investigation. Charcoal spread 1607 was fully investigated and was within a feature that had gradual sloping sides and a slightly undulating base. It measured 3.8 m in diameter and was 0.2 m deep (Plate 11), but contained no artefacts. Feature 1607 was overlain by ploughsoil 1601, possibly medieval given its stratigraphic position, and which would indicate that kiln 1607 was of medieval date. A probable quarry edge was identified at the north end of the trench. The quarry had well defined sides cut into natural and was backfilled with grey clays 1602, 1603 and 1604. Ploughsoil (1601) overlay the upper quarry fill (1602) and the trench was sealed by modern silt loam topsoil (1600).

Trenches 17, 18, 19 (not illustrated)- former quarries

- 5.3.10 Trench 17 was orientated NE-SW and measured 50 m long, 2 m wide and 0.8 m deep. It was cut through a former quarry filled with clay at least 1.3 m deep. No archaeological features were noted within the trench and the natural geology was not exposed.

- 5.3.11 Trench 18 was orientated NE-SW and measured 50 m in length, 2 m in width and was excavated to a depth of 1.4 to 1.8 m through re-deposited clay (1802) suggestive of quarry fill. The current ground surface around Trenches 17 and 18 is raised, probably representing the piling up of waste materials. No archaeological features were noted within the trench.
- 5.3.12 Trench 19 was orientated NW-SE, measured 50 m in length and was 2 m wide. Re-deposited clay deposits again imply that the trench is on the site of a former quarry. A machined sondage revealed natural mudstone and clay (1904) 2.8 m below current ground surface. No archaeological features were noted.

Trench 20 - medieval lime-kiln; medieval plough furrows

- 5.3.13 Trench 20 (Fig. 13) was orientated E-W. It measured 50 m in length, 2 m in width and was excavated to an average depth of 0.5 m. The trench was widened to investigate two possible linear features at the western end of the trench. These proved to be geological in nature. Natural mudstone (2009) was burnt in two places below the medieval ploughsoil, but these did not represent features or kilns.
- 5.3.14 A more certain structure (kiln 2008) had gradual sloping sides and a slightly undulating base. It measured 4.3 m in diameter and had a maximum depth of 0.44 m (Plate 12). The lowest fill (2006) included lenses of silt with burnt limestone and charcoal. This was overlain by a deposit of charcoal with occasional pieces of burnt limestone. Fill 2007 was overlain by 2005 which consisted of loose crushed limestone with charcoal. The uppermost fill of the lime-kiln (2004) contained lenses of charcoal and mudstone. The east end of the kiln contained a greater concentration of ash and may represent the area of drawn out burnt lime associated with the produced quicklime (these deposits were sampled for environmental purposes). The eastern limit of the kiln was truncated by plough furrow 2003. This implies a date for the drawing of the lime-kiln sometime in the earlier medieval period. Six medieval furrows were noted in this trench forming ploughsoil 2001, which was sealed by topsoil (2000).

Trench 21 - in-filled quarry

- 5.3.15 Trench 21 (not illustrated) was orientated NW-SE. It measured 50 m in length, 2 m in width and was excavated to an average depth of 0.5 m. The deposits encountered within the trench were the similar to trenches 11, 13, 14, 15, 17 18 and 19 with re-deposited clays seen in sondages to a depth of 2.8 m below the current ground surface, where natural was identified. The trench therefore appears to have cut through a back-filled quarry. As in nearby Trenches 17 and 18, the ground surface has been raised by stockpiling materials, presumably waste stone from quarrying. No features were identified despite the suggestions of possible industrial activity indicated by previous geo-physical surveys.

Trench 22 - 19th century clay/stone pit

- 5.3.16 Trench 22 (Fig. 14) was orientated NE-SW and measured 54 m in length and 2m in width. It was excavated to an average depth of 0.75 m. The trench was extended to

characterise a potential clay pit at the south-west end of the trench. Natural mudstone (2205) was overlain by ploughsoil 2200, probably medieval in date but with no characteristic furrows seen in this trench. The ploughsoil was cut at the south-west end of the trench by a 19th century clay or lime extraction pit, infilled with clay (2203 and 2202). The feature is depicted as a clay pit on the 1885 OS Map (Fig. 16). The upper fill of the pit (2202) was overlain by topsoil (2201).

Trench 23 - ploughsoil and single undated gully

- 5.3.17 Trench 23 (Fig. 15) was orientated E-W. It measured 50 m in length, 2 m in width and was excavated to an average depth of 0.65 m. The earliest deposit encountered within the trench was the natural geology (2306). This consisted of a soft, light grey mudstone and clay with patches of large limestone rubble throughout the length of the trench. The natural was cut at the east end of the trench by a slightly curved north to south gully (2303). It was 0.77 m wide and 0.33 m deep with a single undated clay silt fill (2202). Furrow 2305 formed part of medieval ploughsoil layer 2301 which was sealed by topsoil (2300).

6 FINDS

The Pottery by Emily Edwards, OA

- 6.1.1 A total of 50 (368 g) Iron Age sherds were recovered. These were manufactured from clays tempered with sand and igneous rock fragments. The igneous fabrics are similar to those noted at Elms Farm Humberstone (Marsden 2000, 171-2) and may originate from the Mountsorrel granite. Middle Iron Age pottery manufactured from these fabrics has been noted throughout Leicestershire and some parts of Nottinghamshire, up to 35 km away from the source.
- 6.1.2 The lack of scored decoration on these sherds indicates that the pottery is early, rather than middle, Iron Age. The assemblage comprised plain body sherds, which were counted and weighed by context, fabric being briefly noted. Generally speaking, in excess of 20 sherds (or several diagnostic sherds) are required from a single prehistoric feature to allow some precision of dating which takes residuality into account.
- 6.1.3 This must be taken into account with the spot dating especially where there are less than five sherds. The pottery from this evaluation should be considered alongside other groups of artefacts recovered from the site. These sherds cannot be given a specific date and further excavations might provide more diagnostic pottery, thus enabling an exploration of the significance of this site.

Table 6.1: Pottery occurrence by context

Context	Date	Sherd Count	Weight (g)	Fabric
203	EIA	8	28	Sandy (one charred residue)
807	EIA	9	41	Sand and ferruginous pellets, Sand and quartz

905	EIA	6	86	Sand, ferruginous pellets and igneous rock fragments
905	EIA	2	82	Sand, ferruginous pellets and igneous rock fragments
910	EIA	7	37	Sand, quartzite and ferruginous pellets,
910	EIA	2	1	Indeterminate
911	EIA	14	75	Sand, ferruginous pellets and igneous rock fragments
1404	PMED	1	3	Victorian blue and white china
TOTALS		49	353	

Flint by Rebecca Devaney, OA

- 6.1.4 One piece of struck flint was recovered from context 807. It has a clear cone of percussion between the striking platform and the ventral surface and incipient cones of percussion towards the dorsal edge of the striking platform. The irregularity of the piece suggests that it may have been naturally as opposed to humanly struck; however, this is not entirely clear.

Animal Bone by Fay Worley, OA

- 6.1.5 A full record of the assemblage, documented in a *Microsoft Access* database, can be found with the site archive. Sources are detailed in Appendix 2, together with quantification tables and discussion of individual contexts (A.2. etc). Sixty fragments (847g) of animal bone were recovered including fragments identified as red deer, cattle, horse, sheep/goat, pig and canid (probably dog), with further fragments identified only as large or medium sized mammal (see Tables A.2.1 and A.2.2). The condition of the animal bone assemblage was generally very good to fair with the majority of the bones in very good or good condition (see Table A.2.3). Nearly half the assemblage, including fragments from all contexts had suffered post-depositional fresh breaks (see Table A.2.4). The overall good condition of the fragments allowed the identification of animal gnawing (all carnivore) and butchery marks (see Table A.2.4). The presence of carnivore gnawing indicates that the bones were accessible to dogs/cats/foxes and may have been moved from their original place of disposal. No fragments were burnt and no evidence of pathology was identified.
- 6.1.6 Overall the assemblage includes domestic (cattle, horse, sheep/goat, pig and probable dog) and wild species (red deer). Butchery evidence suggests that horse and dog carcasses were divided and utilised, possibly for meat for animals or the human population. Evidence from context 905 indicates the use of animals for raw materials in addition to meat, with artefacts created from medium mammal long bone and red deer antler tine. Very little can be concluded from an assemblage of this size, however, the material is in very good condition which raises the probability that any

further animal bone excavated from this site has the potential to provide good evidence for animal utilisation and husbandry strategy and should therefore be subject to analysis. The assemblage should be considered with the interpretation of any further animal bone recovered from the site. The worked medium mammal long bone from 905 should be analysed and identified by a worked bone specialist.

7 PALAEO-ENVIRONMENTAL

Palaeo-environmental remains by Seren Griffiths

- 7.1.1 Four samples were processed from a range of feature types and periods, including the probable rake out of a 19th century lime-kiln and the fills of two prehistoric ditches. Sample volumes were of 20 and 40 litres. The samples were processed by floatation using a modified Siraf-type machine, the flot being collected onto a 250-micron mesh. The samples were air-dried and the flots scanned under a binocular microscope at Oxford Archaeology. Seren Griffiths undertook the initial assessment at Oxford Archaeology. Samples were taken to assess the preservation of charred plant remains and for the recovery of small bones and artefacts. The flots were of variable size and all contained elements of modern root/plant matter.
- 7.1.2 *Results:* Sample 8 (context 414) produced a large flot of about 900ml; wood charcoal was common in the sample along with clinker. The charcoal and the clinker were generally highly comminuted and consistent with high temperature burning. There were few other ecofacts present other than *Cecilioides acicula* a burrowing mollusc species, not likely to be indicative of contemporary environment. Sample 10 (context 203) also produced a large flot, c 1000ml; 90% of this by volume was modern root matter. The sample contained frequent items of charcoal >2mm with the potential for identification. Poorly preserved grain, probably representing *Triticum* spp. (wheat) species, were also frequent in the sample. Weed seeds including small legumes were present. Small bones were also present in the flot, including a sheep/goat unciform carpal, mouse/vole incisor, and elements of fish scales, bone and teeth. The fish tooth was identified as probably from *Esox lucius* L. (pike - R Nicholson, OA, *pers comm*). Sample 14 (context 910) contained limited elements of comminuted charcoal, one small legume and *Cecilioides acicula*. Sample 13 (context 2007) contained comminuted items of charcoal. The majority of this substantial flot was made up of highly comminuted clinker material and coal.
- 7.1.3 *Conclusion:* The flots from samples 14 (context 910) and 10 (context 203) demonstrate the importance of sampling a range of features from any site. While both these deposits were identified as Iron Age ditch fills, the ecofacts contained within them are radically different. The flot from sample 14 (context 910) contained one weed seed with items of charcoal. In contrast, sample 10 (context 203) contained probable *Triticum* spp (wheat) species, frequent quantities of charcoal and chaff and non-burrowing snail remains. However, the sample also included fish bone, scales, and a tooth, which was identified as probably from pike. Pike is a freshwater carnivorous fish, however, a ditch is an unlikely habitat for this fish, and it is more likely that the remains represent food debris. Although pike were a recognised food

fish in Roman times, fish remains are generally rare in English inland pre-historic deposits. The variability observed within these flots of similar date demonstrates the importance of taking samples from between and within a range of deposits. Further work at the site should therefore ensure targeted wet-sieving of deposits which appear to have a similar combination of ditch morphology, fill, and artefacts, as well as appropriate sampling of other ecofactual evidence in line with current best methods and practise. The flot from the kiln fill 2006 was insufficient to provide detailed information on the economy or nature of this industry other than that a clinker material was present in this deposit. However further work at the site should include a targeted sampling strategy to map spatial and temporal variations in fuel use across the site and within features.

8 DISCUSSION AND INTERPRETATION

8.1 Reliability of field investigation

- 8.1.1 The results of the evaluation provide a reliable record of the archaeological remains across the investigation area. There were initial concerns over the nature of the re-deposited clay materials prevalent across the site and, for example, clay layer 402 in Trench 4 was initially thought to be the natural clay geology. However, deep machine sondages were excavated to establish the true nature of these deposits.

8.2 Overall interpretation and discussion

Fields 1 and 2 (Trenches 1 and 2)

- 8.2.1 No archaeological features were noted within Trench 1 and there was no evidence for the prehistoric enclosures and/or ditches suggested by previous geophysical survey work carried out in the vicinity (Area 4, GSB 2003). The location of the survey was approximately 20 m to the north-west of Trench 1 and it would seem by the absence of features that the prehistoric activity does not extend this far eastwards as anticipated. There would seem to be good potential for the survival of prehistoric features within the vicinity of Trench 2. The ditch (204) here contained early Iron Age pottery and the environmental sample from the ditch fill produced unusual and well-preserved floral and faunal remains. There is also evidence for medieval ridge and furrow.

Fields 3 and 4 (Fig 2 -Trenches 3, 4, 5, 6 and 7)

- 8.2.2 The structures within Fields 3 and 4 are the remains of 18th/19th century typical rectangular and sunken lime-burning kilns (termed 'Pye Kilns' in Derbyshire; Leach 1995). In Trench 4, the structure overlay an infilled quarry, giving further weight to a later date for the structure. The west-facing ends of the structures contained charcoal, burnt limestone and ash and these deposits are thought to represent the drawn out burnt lime (or quicklime). The orientation of a kiln was important for creating a draught during the burning process and the kilns were usually orientated to face downhill to maximise the draught. No dating materials were recovered from the

structures, but this type of kiln was commonly in use until the early 19th century (Raistrick 1986, 70).

- 8.2.3 No archaeological features were noted within Trenches 3 and 6 and there was no evidence for the strong anomalies thought to represent industrial activity as suggested by previous geophysical survey work carried out nearby (Area 4, GSB 2003). The area of the survey incorporates Trench 6 but no kiln structures or related features were discovered.

Field 5 (Trenches 8, 9 and 10)

- 8.2.4 Several early Iron Age ditches were found within these trenches. The ditches contain good dating evidence: several sherds of plain-bodied Iron Age pottery were recovered. The ditches were rich in well preserved floral and faunal remains and there is good potential for further environmental analysis. The ditches presumably relate to part of an Iron Age settlement although no structural remains or buildings of this date were identified. There were a greater number of features within Trench 9 in comparison to Trenches 8 and 10 and this could suggest a focus for any activity. The survival of the prehistoric ditches may in part be attributed to the medieval/post-medieval land use within Field 5, where there has been less intensive industrial and quarrying activity. The level and thickness of the ploughsoil in the field appears to have preserved the prehistoric features.

Field 6 (Trenches 11, 13, 15, 17, 18, 19, 21)

- 8.2.5 There was no evidence for prehistoric or medieval deposits or features within these trenches and post-medieval limestone quarries/pits have removed potential evidence, including any natural subsoil. The ground surface to the centre of the field has been artificially raised during the 19th century by mounds of clay around Trenches 11, 13, 14, 15, 17, 18, 19 and 21, presumably from quarrying.

Field 6 (Trenches 12, 14, 16, 20, 22, 23)

- 8.2.6 The structural remains in Trench 12 represent a 19th-century industrial complex of five circular stone-built 'Pot kilns'. This complex is depicted on the Fritche's 1879 map of Barrow-upon-Soar and on the OS map of 1885. A north-east/south-west aligned track-way is shown on both maps to the west of the main structures and on the east side of the complex an east-west track-way appears (Fig. 16).
- 8.2.7 Strong magnetic anomalies suggestive of industrial activity in the area of Trenches 16 and 20 were identified in previous geophysical work (Area 1C; GSB 2000) were broadly confirmed. Trenches 16 and 20 contained the remains of medieval kilns sealed beneath the medieval ploughsoil and undamaged by quarrying. No dateable materials were recovered from the structures, but the stratigraphic relationships indicate that they predated the medieval ridge and furrow horizon. Types of lime-kiln from the medieval period onwards were known as 'Sod-kilns'. These were circular or sub-circular in shape and often no more than heaps or mounds of limestone and fuel piled above a shallow hollow and covered with sods of earth prior to burning. The remaining trenches contained little further evidence other than previous quarrying.

APPENDICES

APPENDIX 1 ARCHAEOLOGICAL CONTEXT INVENTORY

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>No./wt</i>	<i>Date</i>
Trench 1								
	101	Deposit	Trench	0.26 m	Modern Top Soil			19 th /20 th century
	102	Deposit	Trench	0.30 m	Plough soil			Post-Med
	103	Deposit	Trench	0.20 m	Natural brown clay			
Trench 2								
	201	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	202	Deposit	Trench	0.16 m	Plough soil			Post-Med
	203	Fill	1.96 m	0.34 m	Fill of [204]			Iron Age
	204	Cut	1.96 m	0.34 m	Ditch			Iron Age
	205	Fill	1.40 m	0.26 m	Fill of [206]			Iron Age
	206	Cut	1.40 m	0.26 m	Tree Throw Pit			Iron Age
	207	Deposit	Trench	250 mm	Natural brown Clay			
Trench 3								
	300	Deposit	Trench	0.20 m	Modern Top Soil			19 th /20 th century
	301	Deposit	Trench	0.20 m	Plough soil			19 th century
	302	Deposit	Trench	2.60 m	Re-deposited Natural			19 th century
	303	Deposit	Trench		Natural Mudstone and Clay			
Trench 4								
	400	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	401	Deposit	Trench	0.18 m	Plough soil			19 th century
	402	Deposit	Trench	2.40 m	Re-deposited Clay			19 th century
	403	Struct	7.40 m	1.70 m	Lime-kiln/ Pye kiln			20 th century
	404	Deposit	7.40 m	0.85 m	Fill of [408]			19 th century
	405	Surface	6.11 m	0.35 m	Mortar Surface			19 th century
	406	Fill	6.45 m	0.75 m	Fill of [408]			19 th century
	407	Deposit	Trench	0.22 m	Natural Mudstone and Clay			

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>No./wt</i>	<i>Date</i>
	408	Cut	7.40 m	1.70 m	Construct cut of Lime-kiln			19 th century
	409	Deposit	3.80 m	1.18 m	Re-deposited Clay			19 th century
	410	Deposit	Trench	1.40 m	Re-deposited Clay			19 th century
	411	Deposit	Trench	1.0 m	Re-deposited Clay			19 th century
	412	Deposit	2.20 m	0.15 m	Re-deposited Clay			19 th century
	413	Deposit	7.14m	0.56 m	Fill of [408]			19 th century
	414	Deposit	1.47m	0.83 m	Lime-kiln Rake-out			19 th century
	415	Deposit	3.0 m	1.20 m	Re-deposited Clay			19 th century
	416	Deposit	3.0 m	0.22 m	Re-deposited Clay			19 th century
Trench 5								
	500	Deposit	Trench	0.20 m	Modern Top Soil			19 th /20 th century
	501	Deposit	Trench	0.10 m	Plough soil			19 th century
	502	Deposit	Trench	0.80 m	Re-deposited Clay			19 th century
	503	Deposit	Trench	0.40 m	Re-deposited Natural Mudstone and Clay			19 th century
Trench 6								
	600	Deposit	Trench	0.22 m	Modern Top Soil			19 th /20 th century
	601	Deposit	Trench	0.18 m	Plough soil			19 th century
	602	Deposit	Trench	0.80 m	Re-deposited Natural Mudstone and Clay			19 th century
	603	Deposit	Trench	0.58 m	Re-deposited Clay			19 th century
Trench 7								
	700	Deposit	Trench	0.20 m	Modern Top Soil			19 th /20 th century
	701	Deposit	Trench	0.05 m	Plough soil			19 th century
	702	Deposit	Trench	0.45 m	Natural Mudstone and Clay			
	703	Cut	7.10 m	1.10 m	Lime-kiln/ Pye kiln			19 th century
	704	Fill	6.80 m	0.20 m	Fill of [703]			19 th century

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Find</i>	<i>No./wt</i>	<i>Date</i>
	705	Fill	5.30 m	0.40 m	Fill of [703]			19 th century
	706	Fill	4.40 m	0.40 m	Fill of [703]			19 th century
	707	Fill	4.80m	0.45 m	Fill of [703]			19 th century
	708	Fill	2.08m	300 mm	Fill of [703]			19 th century
	709	Deposit	4.0 m	0.22 m	Re-deposited Natural Mudstone and Clay			19 th century
	710	Deposit	3.0 m	0.30 m	Re-deposited Clay			19 th century
	711	Fill	3.0m	0.25 m	Fill of [703]			19 th century
	712	Deposit	2.0m	0.10 m	Burnt Natural Mudstone and Clay			
Trench 8								
	801	Deposit	Trench	0.25 m	Modern Top Soil			19 th /20 th century
	802	Deposit	Trench	0.20 m	Plough soil			Post Medieval
	803	Deposit	Trench	0.35 m	Medieval plough soil			Medieval
	804	Deposit	Trench	0.20 mm	Natural red Clay and sand			19 th century
	805	Deposit	5.0 m	0.22 m	Farm Track			19 th /20 th century
	806	Cut	0.50 m	1.0 m	Gully			Iron Age
	807	Fill	0.50 m	1.0 m	Fill of [806]			Iron Age
Trench 9								
	901	Deposit	Trench	0.30 m	Mod. Top Soil			19 th /20 th century
	902	Deposit	Trench	0.38 m	Plough soil			Post Medieval
	903	Deposit	Trench	0.40 m	Med. ploughsoil			Medieval
	904	Fill	0.55 m	0.18 m	Natural red Clay and sand			
	905	Fill	0.55 m	0.45 m	Fill of [906]			Iron Age
	906	Cut	0.55 m	0.45 m	Ditch			Iron Age
	907	Deposit	0.44 m	0.53 m	Fill of [909]			Iron Age
	908	Deposit	0.34 m	0.49 m	Fill of [909]			Iron Age
	909	Cut	0.46 m	0.60 m	Ditch			Iron Age
	910	Fill	1.51 m	0.39 m	Fill of [913]			Iron Age
	911	Fill	0.60m	0.39 m	Fill of [913]			Iron Age
	912	Fill	0.30 m	0.32 m	Fill of [913]			Iron Age

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>No./wt</i>	<i>Date</i>
	913	Cut	1.5 m	0.88 m	Ditch			Iron Age
	914	Fill	0.80 m	0.29 m	Fill of [913]			Iron Age
	915	Fill	0.58 m	0.30 m	Fill of [913]			Iron Age
	916	Fill	0.49 m	0.38 m	Fill of [913]			Iron Age
	917	Fill	1.75 m		Fill of [919]			Iron Age?
	918	Fill	0.50 m		Fill of [920]			Iron Age?
	919	Cut	1.75 m		Ditch			Iron Age?
	920	Cut	0.50 m		Ditch			Iron Age?
Trench 10								
	1000	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	1001	Deposit	Trench	0.38 m	Medieval plough soil			Medieval
	1002	Deposit	Trench	0.30 m	Natural red Clay and sand			
	1003	Fill	0.70 m	0.12 m	Fill of [1004]			Iron Age
	1004	Cut	0.70 m	0.12 m	Ditch			Iron Age
Trench 11								
	1100	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	1101	Deposit	Trench	0.08 m	Plough soil			19 th century
	1102	Deposit	Trench	2.20 m	Re-deposited Clay			19 th century
	1103	Deposit	Trench	0.30 m	Natural Mudstone and Clay			
Trench 12								
	1200	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	1201	Deposit	Trench	0.50 m	Buried Soil			19 th century
	1202	Deposit	Trench	0.30 m	Re-dep. Clay			19 th century
	1203	Deposit	Trench	0.30 m	Re-dep. Natural Mudstone			19 th century
	1204	Deposit	Trench	0.45 m	Red brown Clay Layer			19 th century
	1205	Fill	3.40 m	0.50 m	Mudstone/Lime stone Fill of [1209]			19 th century
	1206	Fill	1.0 m	0.40 m	Mudstone/Lime stone Fill of [1209]			19 th century
	1207	Fill	0.80 m	0.22 m	Mudstone/Lime stone Fill of [1209]			19 th century

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>No./ wt</i>	<i>Date</i>
	1208	Fill	4.20 m	0.86 m	Mudstone/Lime stone Fill of [1209]			19 th century
	1209	Cut	4.20 m	1.06 m	Limestone burning Pit			19 th century
	1210	Fill	1.0 m	0.12 m	Mudstone/Lime stone Fill [1217]			19 th century
	1211	Fill	2.80 m	0.50 m	Mudstone/Lime stone Fill of [1217]			19 th century
	1212	Cut	3.0 m	1.20 m	Limestone burning Pit			19 th century
	1213	Fill	2.30 m	0.70 m	Mudstone/Lime stone Fill of [1217]			19 th century
	1214	Fill	1.60 m	1.0 m	Mudstone/Lime stone Fill of [1217]			19 th century
	1215	Fill	0.60 m	0.00 m	Mudstone/Lime stone Fill of [1217]			19 th century
	1216	Fill	2.46 m	0.50 m	Mudstone/Lime stone Fill of [1217]			19 th century
	1217	Cut	3.40 m	1.15 m	Limestone burning Pit			19 th century
	1218	Fill	2.65 m	0.60 m	Mudstone/Lime stone Fill of [1223]			19 th century
	1219	Cut	0.40 m	0.16 m	Mudstone/Lime stone Fill of [1223]			19 th century
	1220	Fill	3.60 m	1.0 m	Mudstone/Lime stone Fill of [1223]			19 th century
	1221	Fill	1.50 m	0.26 m	Mudstone/Lime stone Fill of [1223]			19 th century
	1222	Fill	0.80 m	0.36 m	Mudstone/Lime stone Fill of [1223]			19 th century
	1223	Cut	3.60 m	1.0 m	Limestone burning Pit			19 th century
	1224	Fill	1.10 m	0.26 m	Mudstone/Lime stone Fill of [1229]			19 th century
	1225	Fill	1.0 m	0.34 m	Mudstone/Lime stone Fill of [1229]			19 th century
	1226	Fill	2.35 m	0.80 m	Mudstone/Lime stone Fill of [1229]			19 th century

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>No./wt</i>	<i>Date</i>
	1227	Fill	1.20 m	0.32 m	Mudstone/Limestone Fill of [1229]			19 th century
	1228	Fill	0.75 m	0.50 m	Mudstone/Limestone Fill of [1229]			19 th century
	1229	Cut	2.35 m	0.80 m	Limestone burning Pit			19 th century
	1230	Deposit	3.90 m	0.35 m	Demolition layer			19 th /20 th century
	1231	Deposit	0.70 m	0.20 m	Demolition layer			19 th /20 th century
	1232	Struct			Lime-kiln/Pot Kiln			19 th century
	1233	Wall	2.10 m	0.23 m	Western wall of Pot Kiln 1232			19 th century
	1234	Deposit	1.40 m	0.15 m	Mortar Layer			19 th century
	1235	Fill	0.22 m	0.23 m	Fill of Construct Trench [1236]			19 th century
	1236	Cut	0.25 m	0.25 m	Construct Cut for wall 1233			19 th century
	1237	Deposit	0.30 m	0.25 m	Demolition layer			19 th century
	1238	Deposit	0.80 m	0.22 m	Demolition layer			19 th century
	1239	Wall	1.72 m	0.23 m	Western wall of Pot Kiln 1245			19 th century
	1240	Surface	1.60 m	0.24 m	Mortar surface			19 th century
	1241	Cut	1.72 m	0.23 m	Construct Trench for wall 1239			19 th century
	1242	Deposit	1.15 m	0.40 m	Limestone rubble foundation for 1239			19 th century
	1243	Cut	0.37 m	0.35 m	Construct Trench for 1242			19 th century
	1244	Deposit	3.30 m	0.45 m	Buried Soil			19 th century
	1245	Struct	3.30 m	0.45 m	Lime-kiln/ Pot Kiln			19 th century
	1246	Wall	0.90 m	0.08 m	Western wall of Pot Kiln 1249			19 th century
	1247	Deposit	1.40 m	0.30 m	Demolition layer			19 th century
	1248	Deposit	3.65 m	0.37 m	Buried Soil			19 th century
	1249	Struct	3.65 m	0.37 m	Lime-kiln/ Pot Kiln			19 th century
	1250	Void			Same as 1247			
	1251	Deposit	0.60 m	0.26 m	Demolition			19 th century

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>No./wt</i>	<i>Date</i>
					layer			
	1252	Struct	5.20 m	0.22 m	Rubble foundation			19 th century
	1253	Struct	0.25 m	0.31 m	Beam Slot?			19 th century
	1254	Struct	0.25 m	0.25 m	Beam Slot?			19 th century
	1255	Struct	0.37 m	0.35 m	Beam Slot?			19 th century
	1256	Struct	3.80 m	0.26 m	Limestone Track-way			19 th century
Trench 13								
	1300	Deposit	Trench	0.28 m	Modern Top Soil			19 th /20 th century
	1301	Deposit	Trench	0.18 m	Plough soil			19 th century
	1302	Deposit	Trench	1.10 m	Re-deposited Clay			19 th century
Trench 14								
	1400	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	1401	Deposit	Trench	0.08 m	Plough soil			19 th century
	1402	Deposit	Trench	1.10 m	Re-deposited Clay			19 th century
	1403	Deposit	Trench	0.42 m	Re-deposited Clay and Top Soil			19 th century
	1404	Deposit	Trench	0.26m	Re-deposited Mudstone and Clay			19 th century
	1405	Deposit	Trench	0.29m	Re-deposited Clay			19 th century
	1406	Deposit	Trench	0.08m	Re-deposited Clay			19 th century
	1407	Struct	2.10 m	0.16 m	Track-way			19 th century
	1408	Deposit	Trench	0.12 m	Re-deposited Mudstone and Clay			19 th century
Trench 15								
	1500	Deposit	Trench	0.24 m	Modern Top Soil			19 th /20 th century
	1501	Deposit	Trench	0.08 m	Plough soil			19 th century
	1502	Deposit	Trench	0.40 m	Re-deposited Clay			19 th century
	1503	Deposit	Trench	0.70 m	Re-deposited Clay			19 th century
	1504	Deposit	Trench	0.80 m	Re-deposited Clay			19 th century
Trench 16								

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Find</i>	<i>No./wt</i>	<i>Date</i>
	1600	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	1601	Deposit	Trench	0.26 m	Plough soil			Medieval?
	1602	Fill	4.80 m	0.90 m	Fill of [1605]			19 th century
	1603	Fill	4.60 m	0.60 m	Fill of [1605]			19 th century
	1604	Fill	2.20 m	0.80 m	Fill of [1605]			19 th century
	1605	Cut	8.20 m	0.90 m	Lime extraction Pit/Delve			19 th century
	1606	Struct	1.80 m	0.10 m	Sod Kiln?			Medieval?
	1607	Struct	3.80 m	0.20 m	Sod Kiln			Medieval?
	1608	Deposit	Trench	0.23 m	Natural Mudstone and Clay			
Trench 17								
	1700	Deposit	Trench	0.28 m	Modern Top Soil			19 th /20 th century
	1701	Deposit	Trench	0.12 m	Plough soil			19 th century
	1702	Deposit	Trench	1.30 m	Re-deposited Clay			19 th century
Trench 18								
	1800	Deposit	Trench	0.28 m	Modern Top Soil			19 th /20 th century
	1801	Deposit	Trench	0.10 m	Plough Soil			19 th century
	1802	Deposit	Trench	1.40 m	Re-deposited Clay			19 th century
Trench 19								
	1900	Deposit	Trench	0.28 m	Modern Top Soil			19 th /20 th century
	1901	Deposit	Trench	0.10 m	Plough soil			19 th century
	1902	Deposit	Trench	0.36 m	Re-deposited Clay			19 th century
	1903	Deposit	Trench	2.14 m	Re-deposited Clay			19 th century
	1904	Deposit	Trench	0.25 m	Natural Mudstone and Clay			
Trench 20								
	2000	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	2001	Deposit	Trench	0.26 m	Plough soil			Post

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Find</i>	<i>No./wt</i>	<i>Date</i>
								Medieval?
	2002	Deposit	1.90m	0.32 m	Fill of [2003]			Medieval
	2003	Cut	1.90 m	0.32 m	Furrow			Medieval
	2004	Fill	3.02 m	0.18 m	Fill of [2008]			Medieval
	2005	Fill	1.96 m	0.12 m	Fill of [2008]			Medieval
	2006	Fill	2.44 m	0.14 m	Fill of [2008]			Medieval
	2007	Fill	1.98 m	0.16 m	Fill of [2008]			Medieval
	2008	Cut	4.30 m	0.28 m	Sod Kiln			Medieval
	2009	Deposit	Trench	0.24 m	Natural Mudstone and Clay			
Trench 21								
	2100	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	2101	Deposit	Trench	0.10 m	Plough soil			19 th century
	2102	Deposit	Trench	2.80 m	Re-deposited Clay			19 th century
	2103	Deposit	Trench	0.30 m	Natural Mudstone and Clay			
Trench 22								
	2201	Deposit	Trench	0.34 m	Modern Top Soil			19 th /20 th century
	2200	Deposit	Trench	0.16 m	Plough soil			Post Medieval/ Medieval?
	2202	Fill	4.90 m	0.30 m	Fill of [2205]			19 th century
	2203	Fill	4.80 m	0.54 m	Fill of [2205]			19 th century
	2204	Cut	5.50 m	0.80 m	Clay extraction Pit			19 th century
	2205	Deposit	Trench	0.54 m	Natural Mudstone and Clay			
Trench 23								
	2300	Deposit	Trench	0.30 m	Modern Top Soil			19 th /20 th century
	2301	Deposit	Trench	0.36 m	Plough soil			Medieval
	2302	Fill	0.77 m	0.23 m	Fill of [2304]			Medieval
	2303	Cut	0.77 m	0.23 m	Gully			Medieval
	2304	Fill	1.81 m	0.27 m	Fill of [2305]			Medieval
	2305	Cut	1.81 m	0.27 m	Ridge and Furrow			Medieval

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>No./ wt</i>	<i>Date</i>
	2306	Deposit	Trench	0.20 m	Natural Mudstone and Clay			

APPENDIX 2 ANIMAL BONE REPORT

Faunal material was identified by comparison with textual sources (Hillson 1986; 1992; Lavocat 1966; Schmid 1972) and the OA faunal reference collection. Specimens were identified as specifically as possible to element and taxon with siding information included where appropriate. Classes of large mammal (horse, cattle and red deer sized) and medium mammal (sheep/goat, pig, roe deer, large dog sized) were utilised where identification to more specific taxon was not possible. Indicators of age-at-death such as bone fusion and tooth eruption (following Silver 1969), mandibular tooth attrition (following Grant 1982) and general observations on size and bone porosity were noted.

Evidence for post-mortem variation (butchery marks, gnawing and burning) was noted and described when present. Fragmentation was recorded using bone zones suggested by Serjeantson (1996). Fragment condition was recorded using a six point graded scale based on Lyman (1996, 355). The weight of each specimen was recorded; the weight of any specimens less than 1 g was recorded as "0 g". Fragment counts in this report refer to refitted fragment counts. Metric data was recorded for all skeletally mature and suitably complete elements following von den Driesch (1976).

Ditch fills 203 contained cattle, sheep/goat, and canid (probably dog), medium and large mammal bones. Cattle were represented by a single metatarsal mid diaphysis fragment, which had been gnawed by a carnivore, probably dog. In the absence of any further large mammal species in this context the large mammal bone can be assumed to be cattle. Identified large mammal fragments included two long bone diaphysis fragments and a rib blade fragment. Nine fragments of sheep/goat bone were identified comprising fragments from the left and right sides of a pelvis, three metatarsal fragments (two from the right hand side element) a metacarpal fragment and three mandibular fragments including a permanent premolar and the first or second molar. The diaphysis of one metatarsal fragment had been chopped diagonally, presumably during carcass division. The sheep/goat bones originate from a minimum of one individual. Age at death data indicates that the sheep/goat was over 20-28 months old at death (See Table A.2.5).

Two canid (probably dog) bones were identified and a right calcaneum and a left ulna. Both were measured (see Table A.2.6). They may have originated from the same individual aged at over 13-16 months old at death (see Table A.2.5). The canid ulna had been butchered with two fine knife cuts across the lateral diaphysis level with the articular facet. These butchery marks were probably inflicted during disarticulation of the forelimb. The animal may have been utilised to feed either other animals or the human population. Medium mammal cranial and long bone fragments recovered from this context may be either sheep/goat or canid.

Ditch fill 905 contained horse, cattle, red deer, large mammal, sheep/goat and medium mammal elements. Horse elements comprised a left pelvis, which had been gnawed by a carnivore and butchered with chop removing the ischium caudal to the foramen obturatum. This butchery probably represents division of the carcass. Cattle metacarpal and metatarsal were identified. The metacarpal could be measured (see Table A.2.6) and from this data the withers height of the animal could be calculated to be 1.11 m (Table A.2.7). A large mammal long bone fragment, broken when fresh, may be horse or cattle.

A mandible and radius were identified as sheep/goat; two medium mammal long bone fragments may also be sheep/goat. A carnivore had gnawed one long bone fragment and the radius. A medium mammal long bone fragment and red deer antler tine tip showed signs of bone working. The antler had been smoothed and exhibited a slight polish suggesting that it had been used as an artefact or curated. The medium mammal long bone mid diaphysis

fragment had been chopped at one end with the broken surface rounded. Two small holes had been drilled into the diaphysis close to the cut end and approximately 90° apart.

Contexts 910 and 911 are fills of the same ditch. They included cattle, possible horse, pig, and large and medium mammal elements. Cattle included a fragment of tibia diaphysis, which had been broken when fresh, possibly during marrow extraction. A right humerus fragment, probably horse, had similarly been broken when fresh. Large mammal fragments, which may be cattle or horse, comprise a long bone and radius fragment. Identified pig elements comprise a sub-adult mandible (see Table A.2.5) and left scapula ages at over one year old at death (see Table A.2.5). The scapula was measures; measurements can be found in Table A.2.8. Twenty fragments of bone could only be identified as medium mammal and may also be pig.

Table A.2.1: Quantification of hand collected faunal assemblage and taxa present

Species	Data	Context				Total
		203	905	910	911	
Cattle	Number of fragments	1	2	1		4
	Weight (g)	37	208	47		292
Horse	Number of fragments		1	1		2
	Weight (g)		323	23		346
Red deer	Number of fragments		1			1
	Weight (g)		11			11
Large mammal	Number of fragments	3	1		2	6
	Weight (g)	13	29		21	63
Sheep/goat	Number of fragments	9	2			11
	Weight (g)	44	5			49
Pig	Number of fragments			2		2
	Weight (g)			33		33
Canid	Number of fragments	2				2
	Weight (g)	19				19
Medium mammal	Number of fragments	9	3	11	9	32
	Weight (g)	21	4	8	1	34
Total number of fragments		24	10	15	11	60
Total weight (g)		134	580	111	22	847

Table A.2.2: Minimum numbers of individuals (MNI) of taxa within contexts

Taxon	Context				Total MNI
	203	905	910	911	
Cattle	1	1	1		3
Horse		1	1		2
Red deer		1			1
Large mammal				1	1
Sheep/goat	1	1			2
Pig			1		1
Canid	1				1
Medium mammal				1	1

Table A.2.3: Condition of animal bone as percentage of fragments in context

Context	Total number of fragments	Condition		
		1 *(very good)	2 (good)	3 (fair)
203	23	58%	42%	0%
905	10	30%	70%	0%
910	15	7%	93%	0%
911	11	9%	9%	82%
Grand Total	60	32%	53%	15%

Table A.2.4: Post-mortem modification

Context	Number of fragments	Number with fresh breaks	Number gnawed	Number butchered
203	24	13 (54%)	1 (4%)	2 (8%)
905	10	4 (40%)	3 (30%)	2 (20%)
910	15	1 (7%)	1 (7%)	1 (7%)
911	11	7 (64%)	-	1 (9%)
Total	60	25 (42%)	5 (8%)	6 (10%)

Table A.2.5: Evidence for age-at-death

Context	Taxon	Element	Evidence	Age-at-death
203	Canid	Ulna	Fused proximal epiphysis	> 9 - 10 months
203	Canid	Calcaneum	Fused proximal epiphysis	> 13 - 16 months
203	Sheep/goat	Metatarsal	Fused distal epiphysis	> 20 - 28 months
203	Sheep/goat	Mandibular permanent premolar	Tooth eruption	> 21 - 24 months
905	Cattle	Metacarpal	Fused distal epiphysis	> 24 - 30 months
910	Pig	Mandible	Tooth attrition	= Sub-adult
910	Pig	Scapula	Fused bicipital tuberosity	> 12 months

Table A.2.6: Metric data

Context	Taxon	Element	Measurements (in mm) following von den Driesch (1976)
203	Canid	Ulna	SDO=22.1
203	Canid	Calcaneum	GL = 47.2, GB= 13.7
203	Sheep/goat	Metatarsal	Bd = 21.7
905	Cattle	Metacarpal	GL = 182, Bp = 50.4, Bd = 51.7
910	Pig	Scapula	GLP= 30.3, BG= 22.3, SLC= 20.1

Table A.2.7: Withers height calculation following Foch (1966)

Context	Taxon	Element	GL (mm)	Conversion factor	Withers height (m)
905	Cattle	Metacarpal	182	x 6.12	1.11

APPENDIX 3 BIBLIOGRAPHY AND REFERENCES

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Map Sources

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FW Fritche 1879. Map of Barrow (LRO ref: 3D42/M17)
Ordnance Survey 6": 1 mile 1885. Sheet XVIII.SW
Ordnance Survey 6": 1 mile 1904. Sheet XVIII.SW
Ordnance Survey 6": 1 mile 1950. Sheet XVIII.SW

APPENDIX 4

SUMMARY OF SITE DETAILS

Site name: Cotes Road, Barrow-Upon-Soar, Leicestershire

Site code: BACR 2005

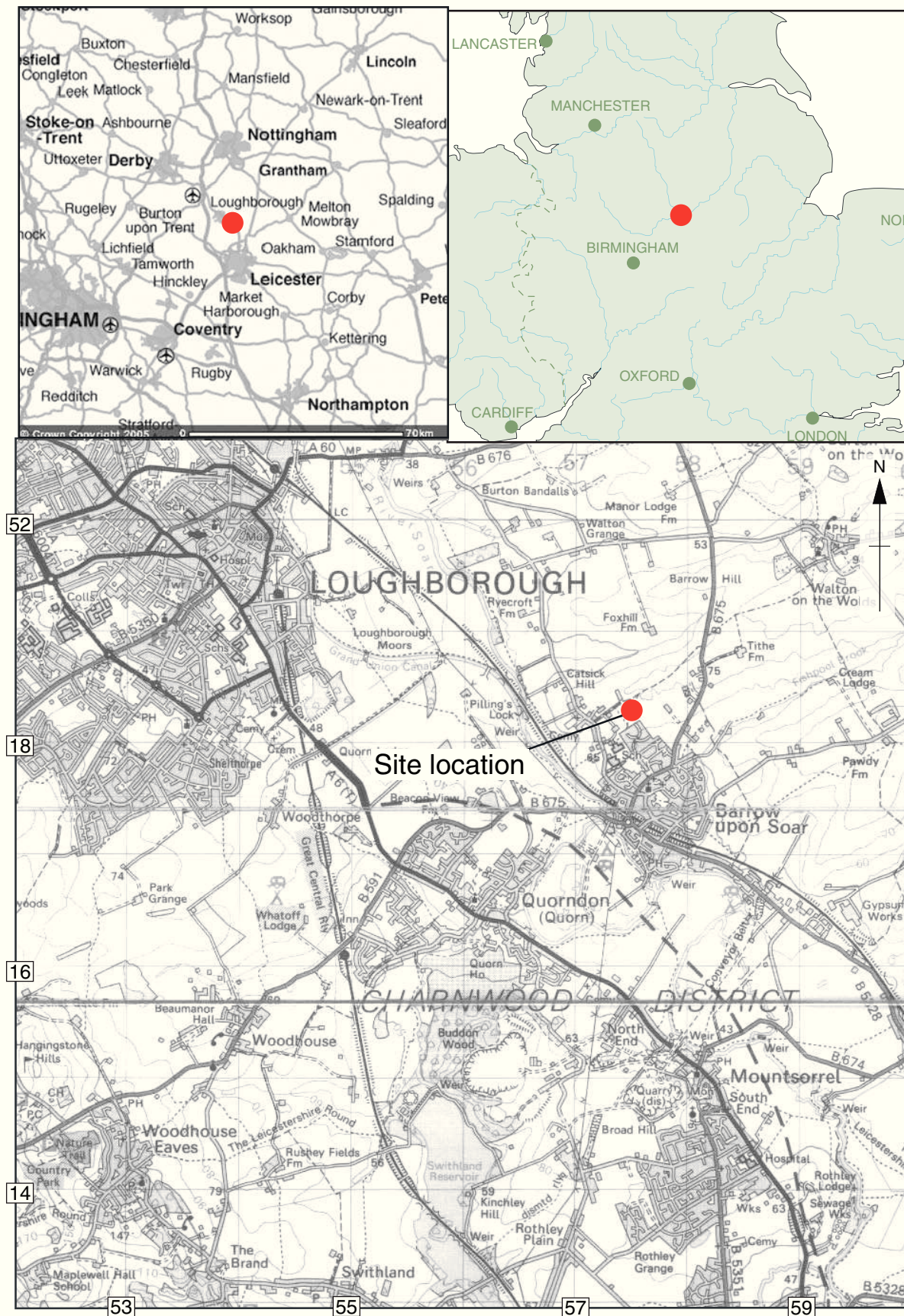
NGR: SK 5740 1838

Type of evaluation: Twenty-three trench rural evaluation

Date and duration of project: August 2005 - September 2005

Summary of results: A number of early Iron Age ditches, medieval lime kilns and post-medieval lime and Pot kilns were identified in a series of fields with notable medieval ridge and furrow and evidence of post-medieval clay and limestone quarrying.

Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Leicester City Museum Service in due course.



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Figure 1: Site location



Figure 2: Trench locations

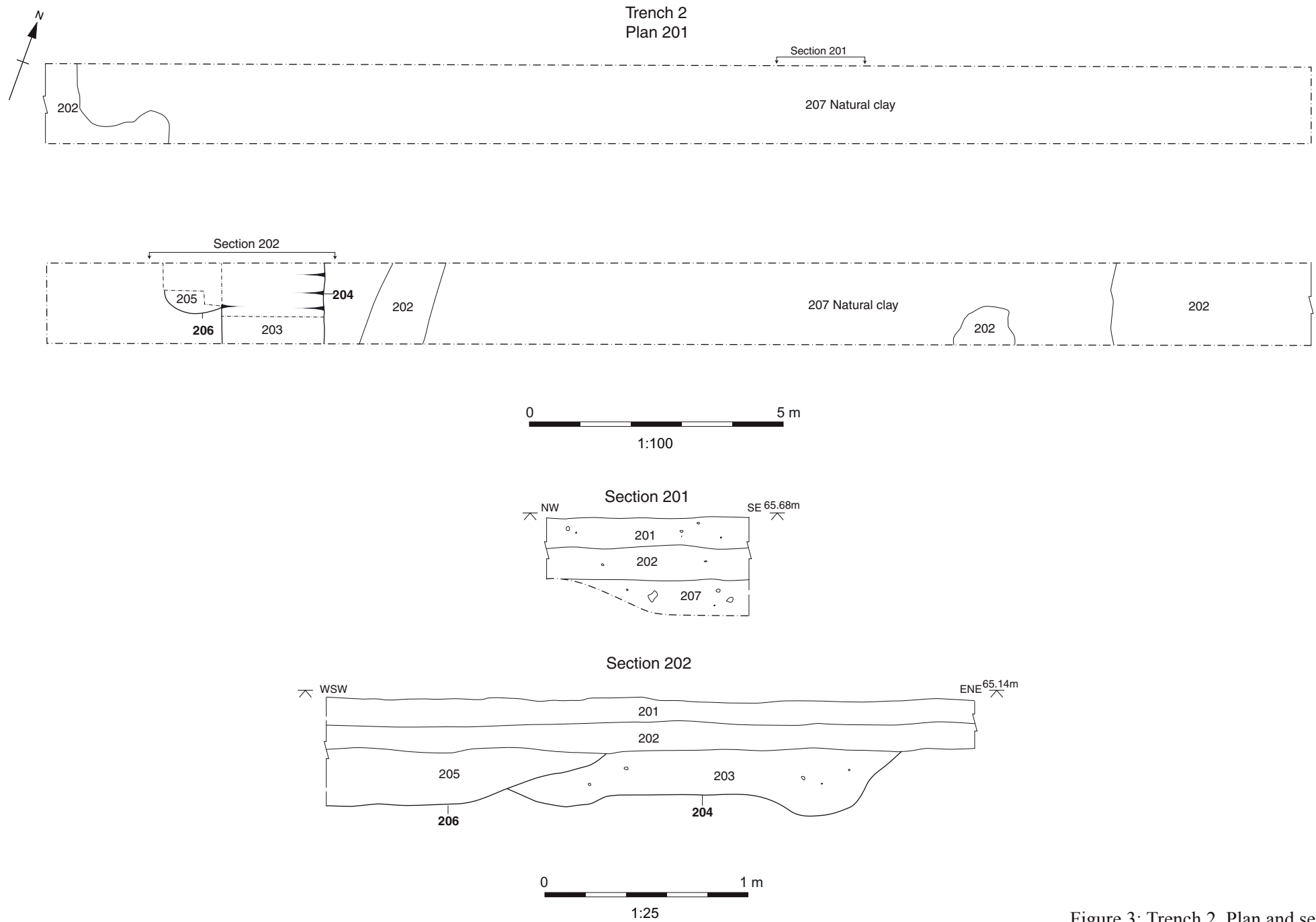
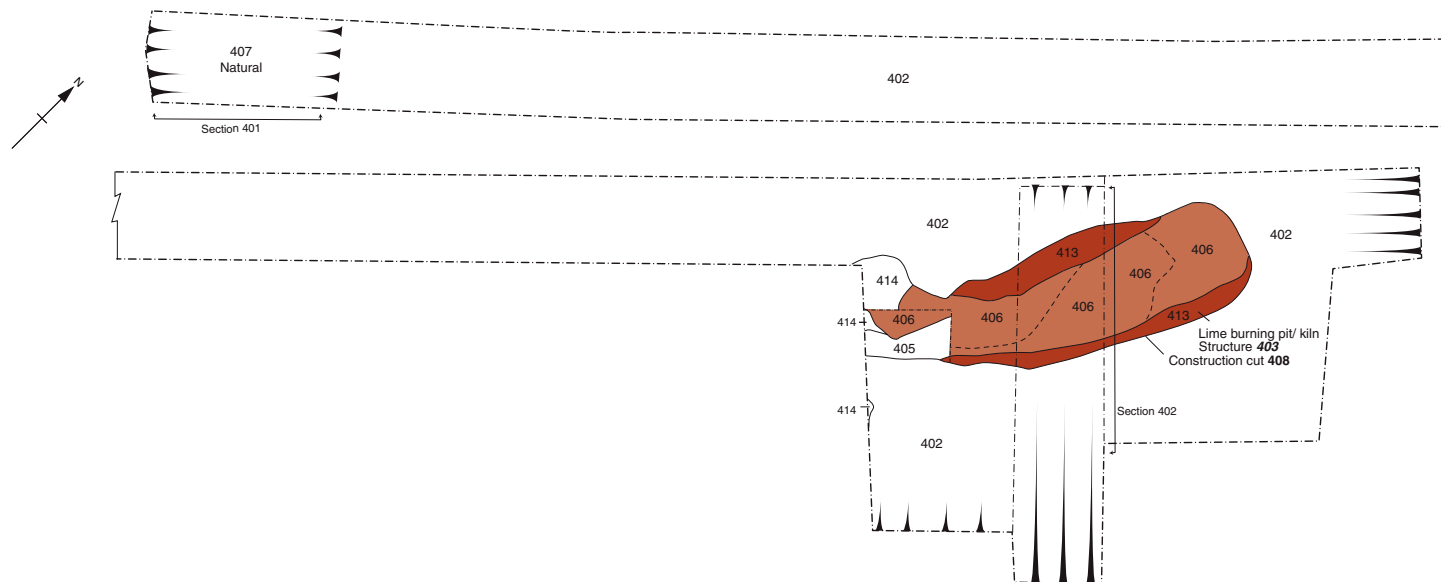
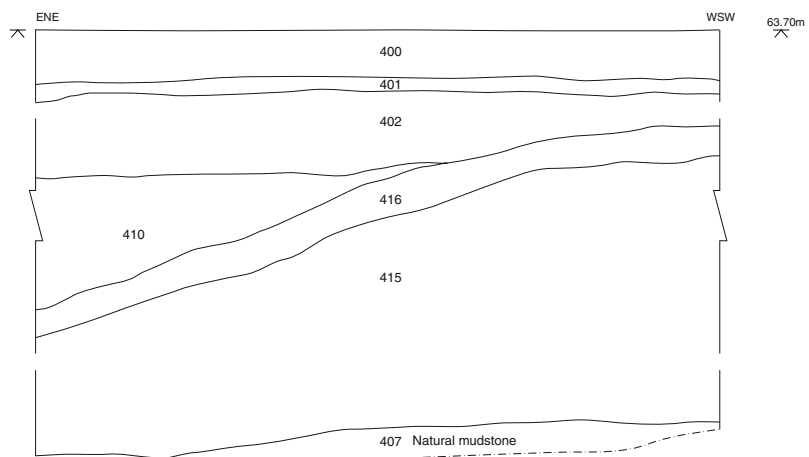


Figure 3: Trench 2, Plan and sections

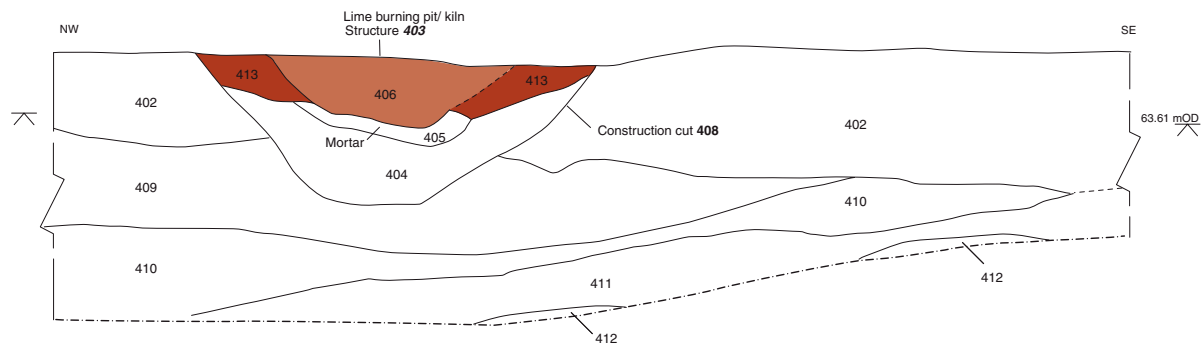
Trench 4 Plan 401



Section 401



Section 402



Area of burning

Figure 4: Trench 4, plan and sections

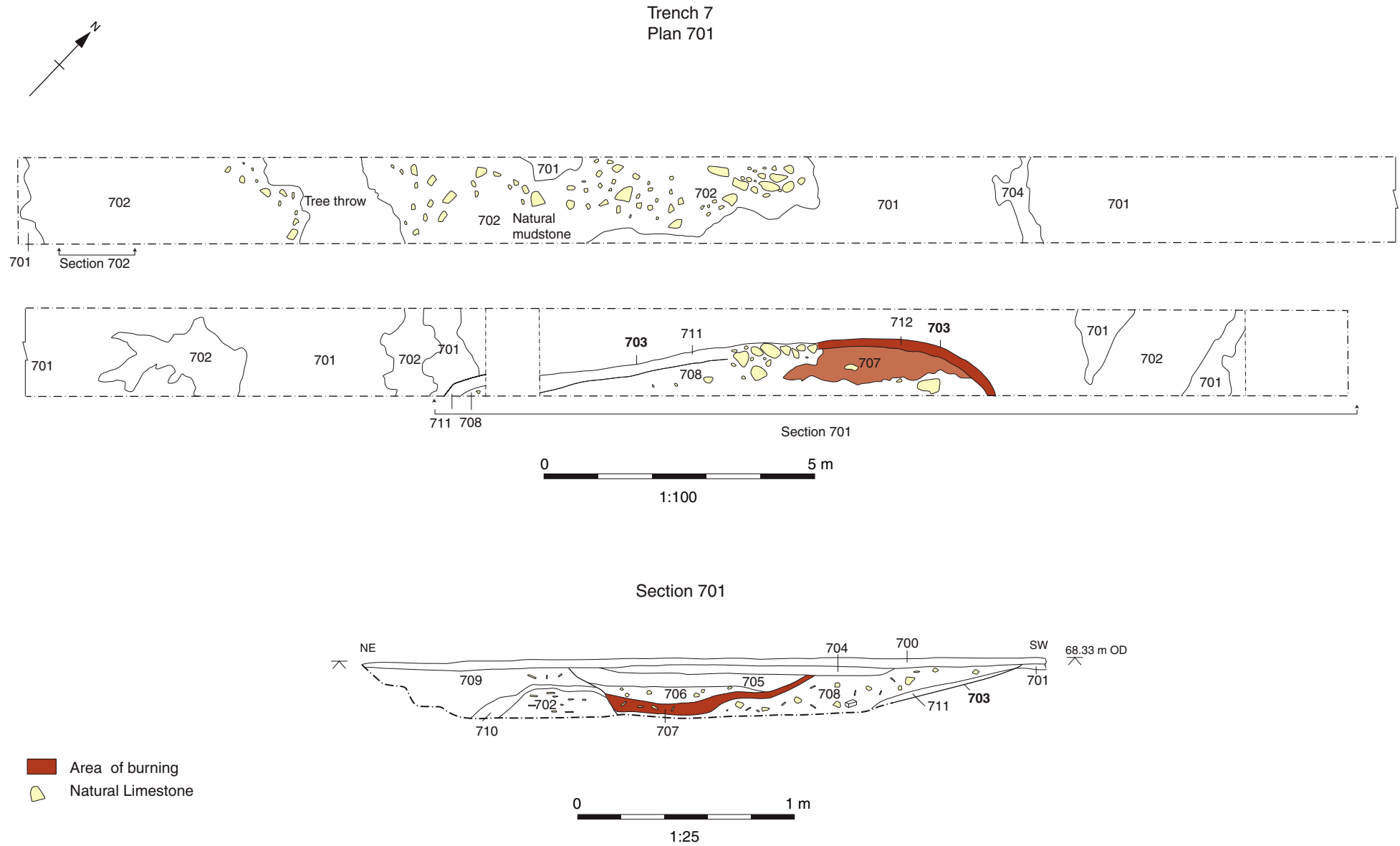


Figure 5: Trench 7, plan and section

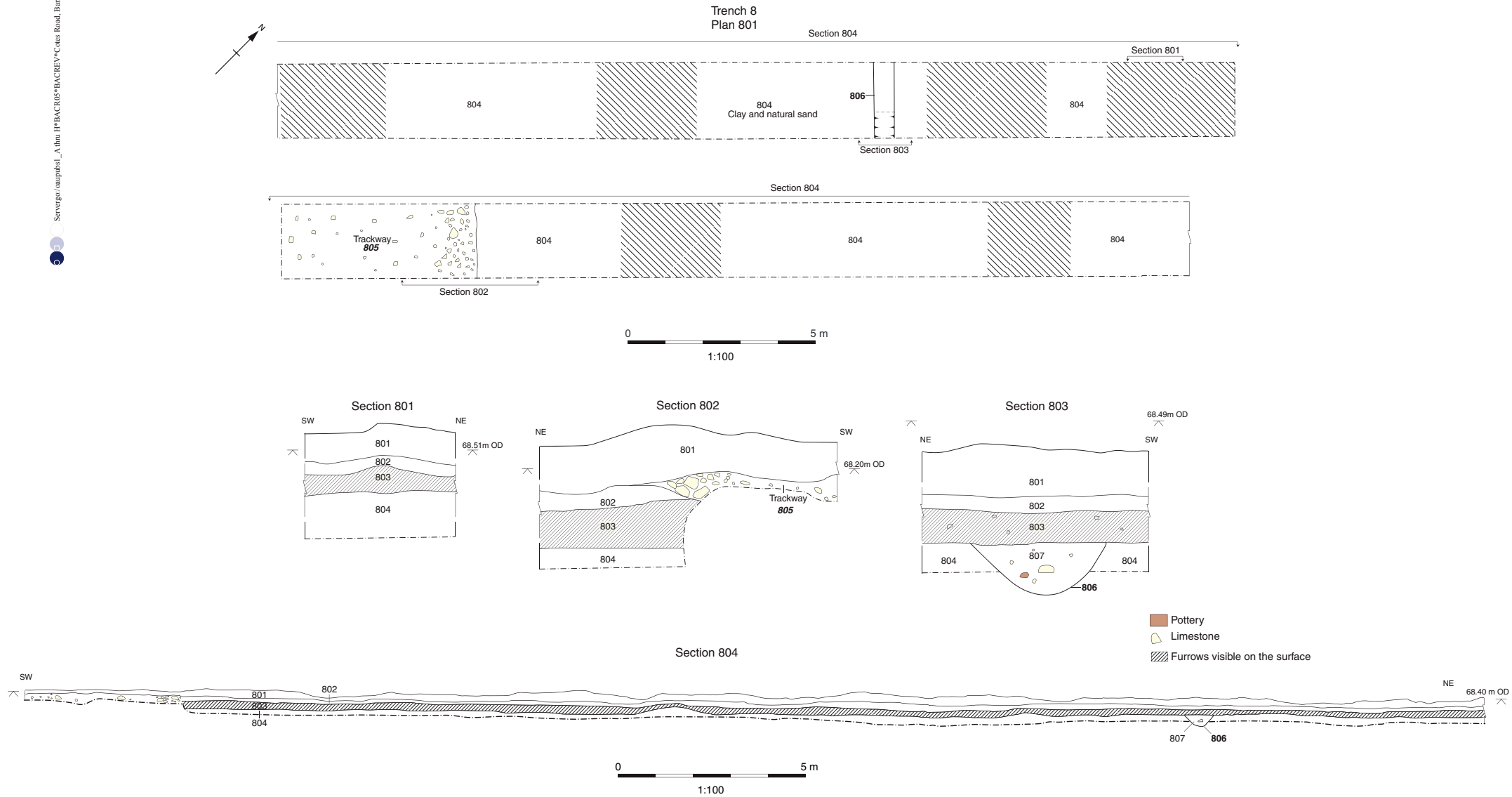


Figure 6 : Trench 8, plan and sections

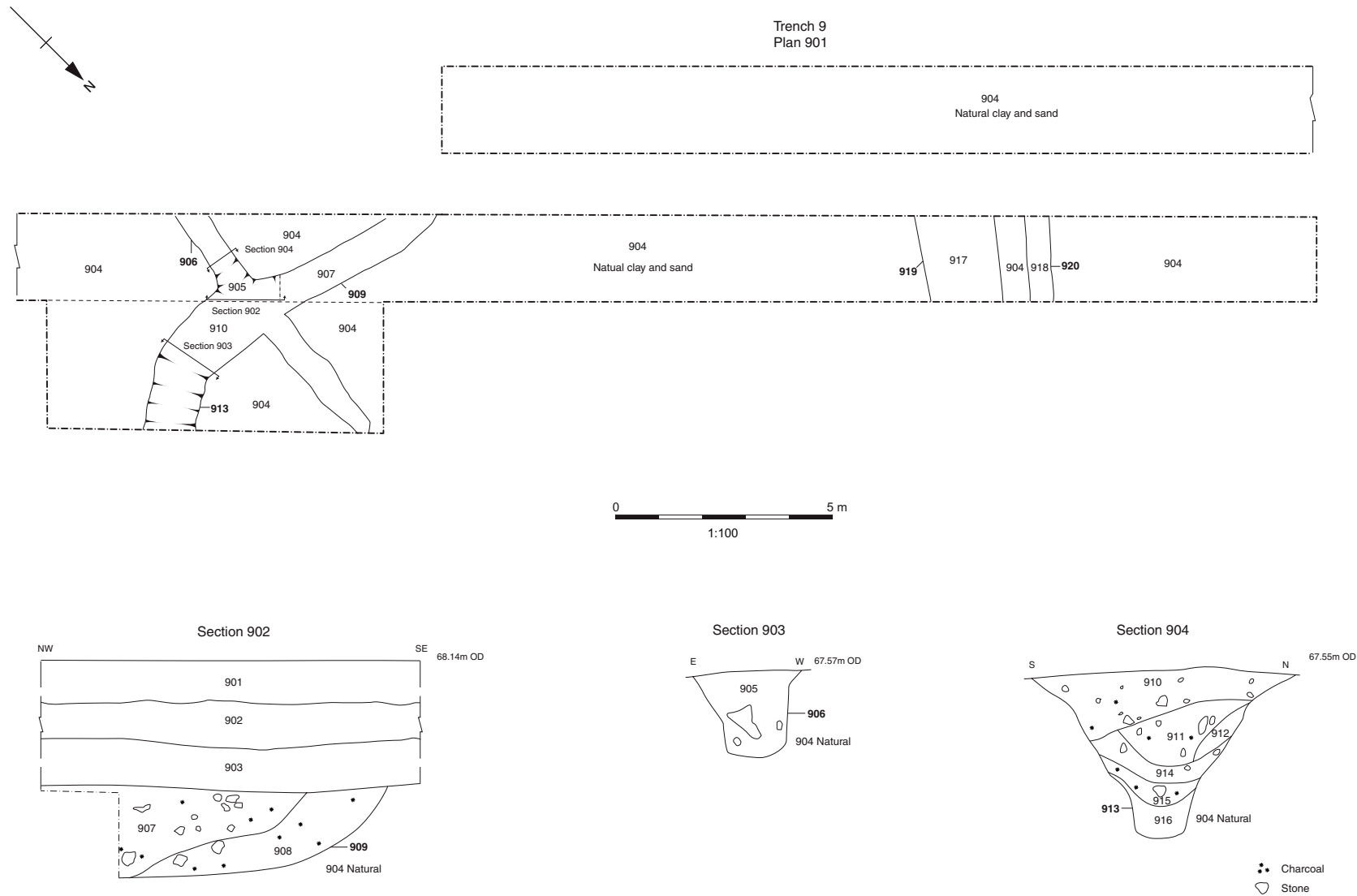
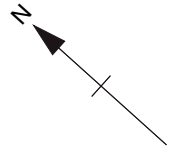


Figure 7: Trench 9, plan and sections



Trench 10
Plan 1001

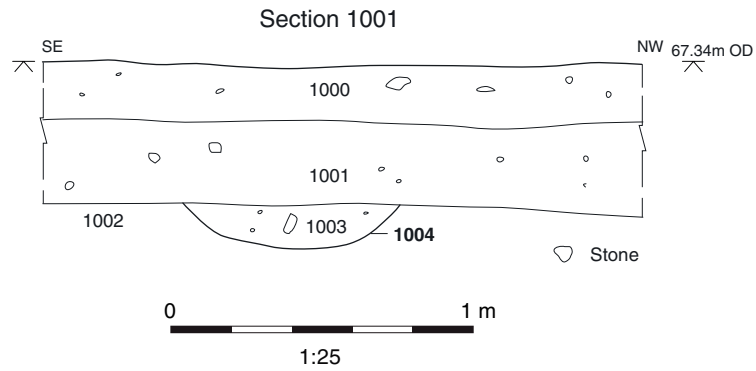
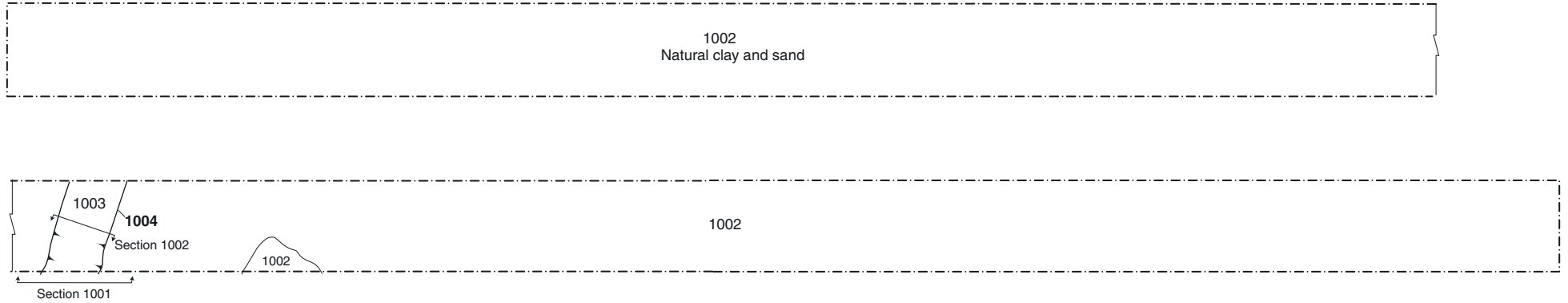


Figure 8: Trench 10, plan and section



Figure 9: Trench 11, plan and section

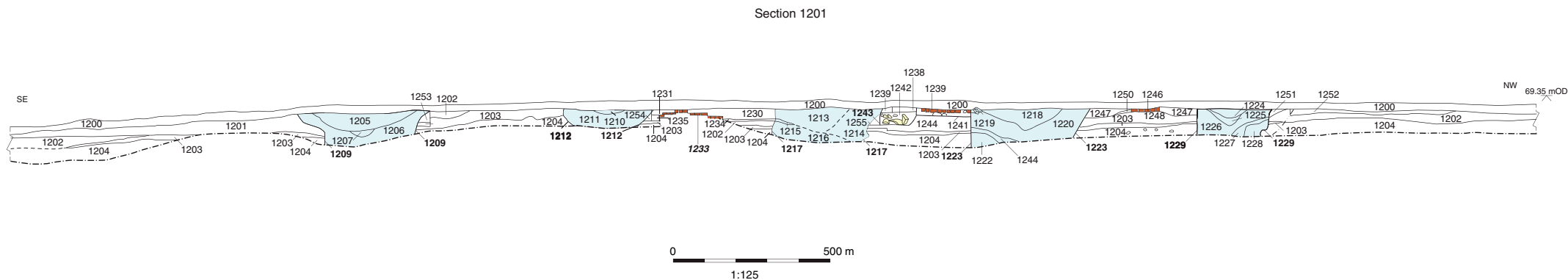
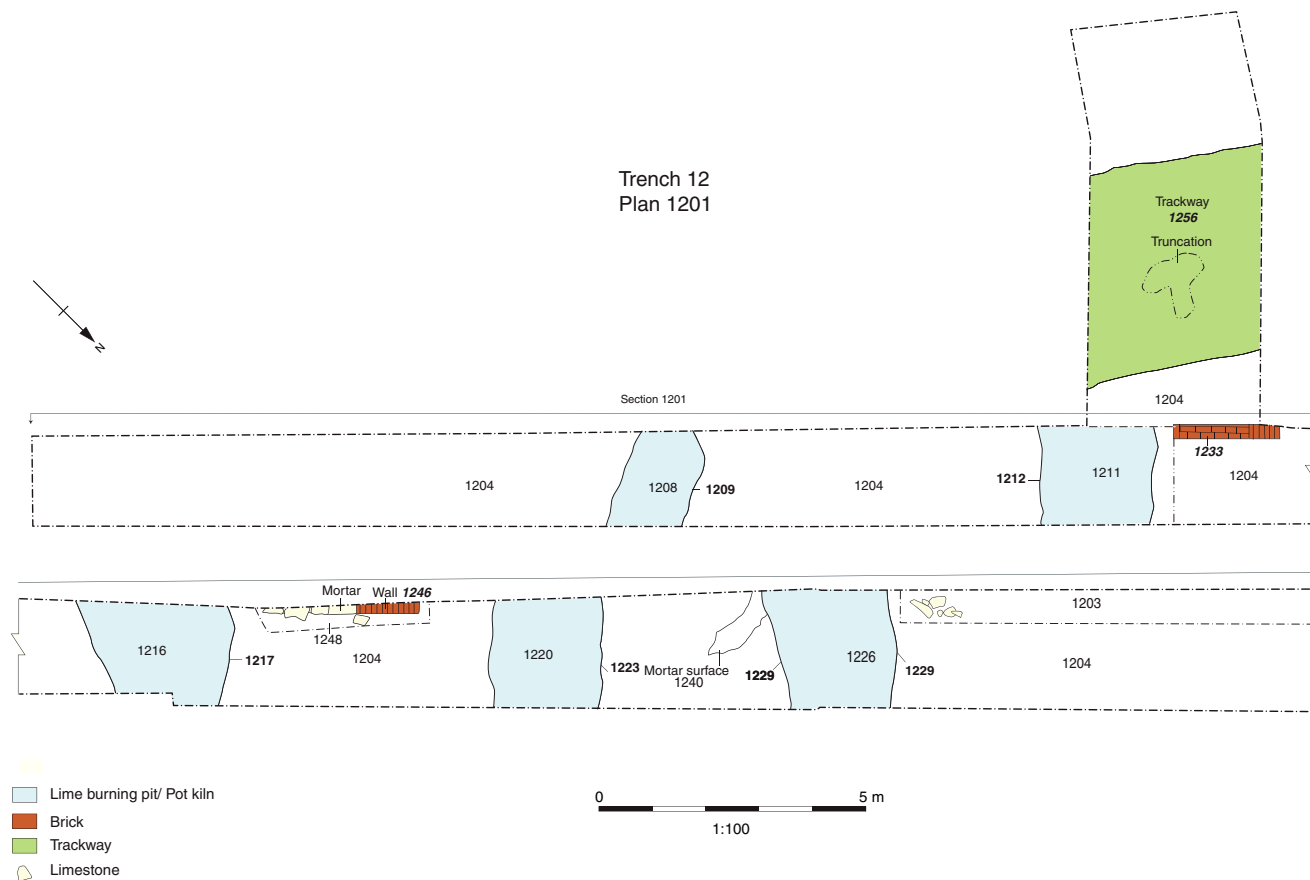


Figure 10: Trench 12, plan and section

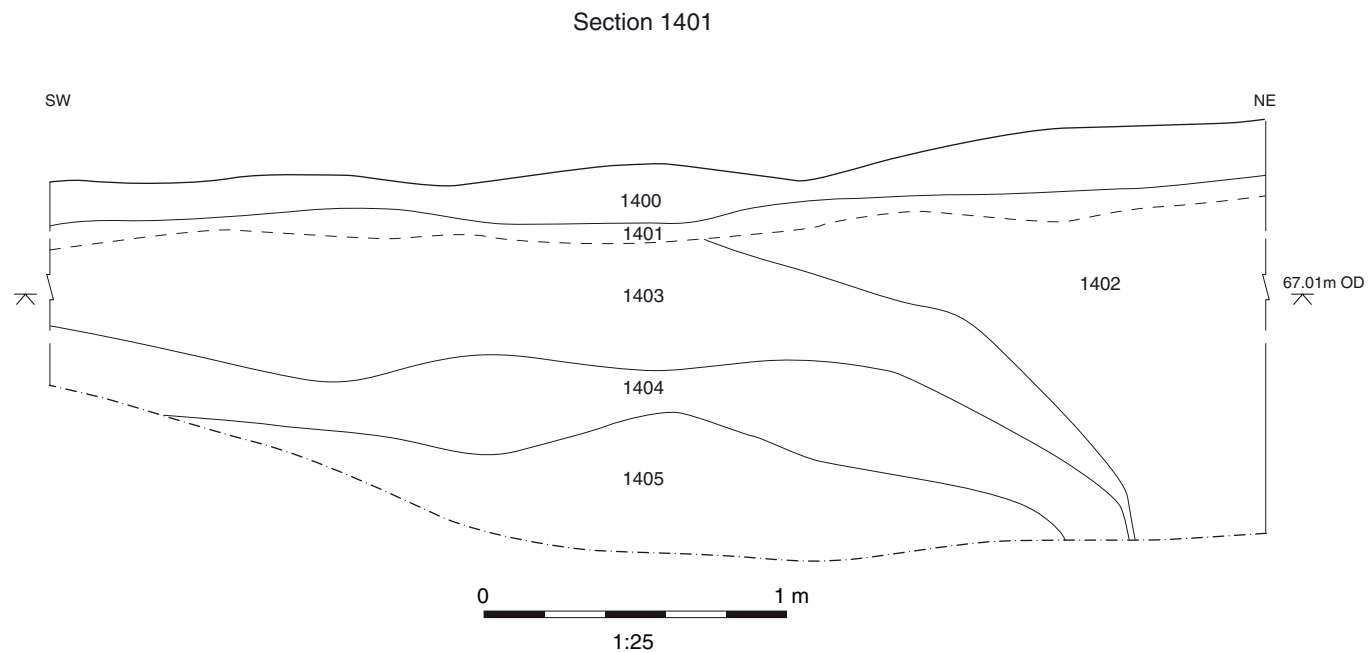
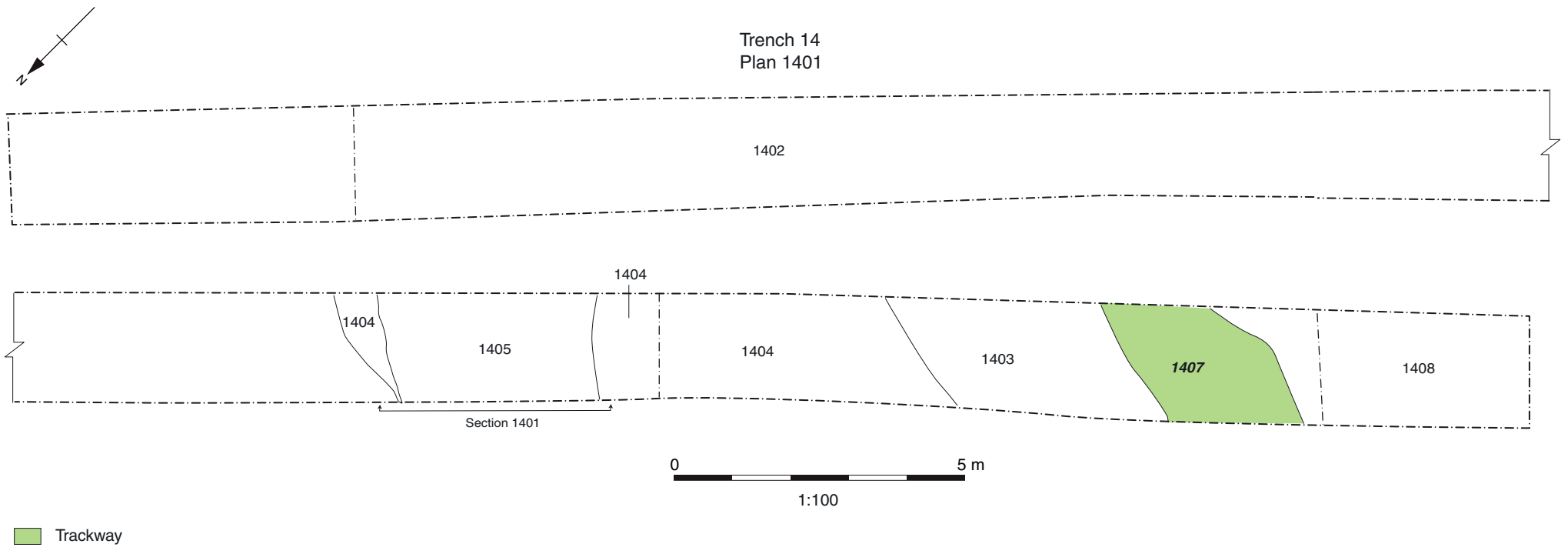


Figure 11: Trench 14, plan and section

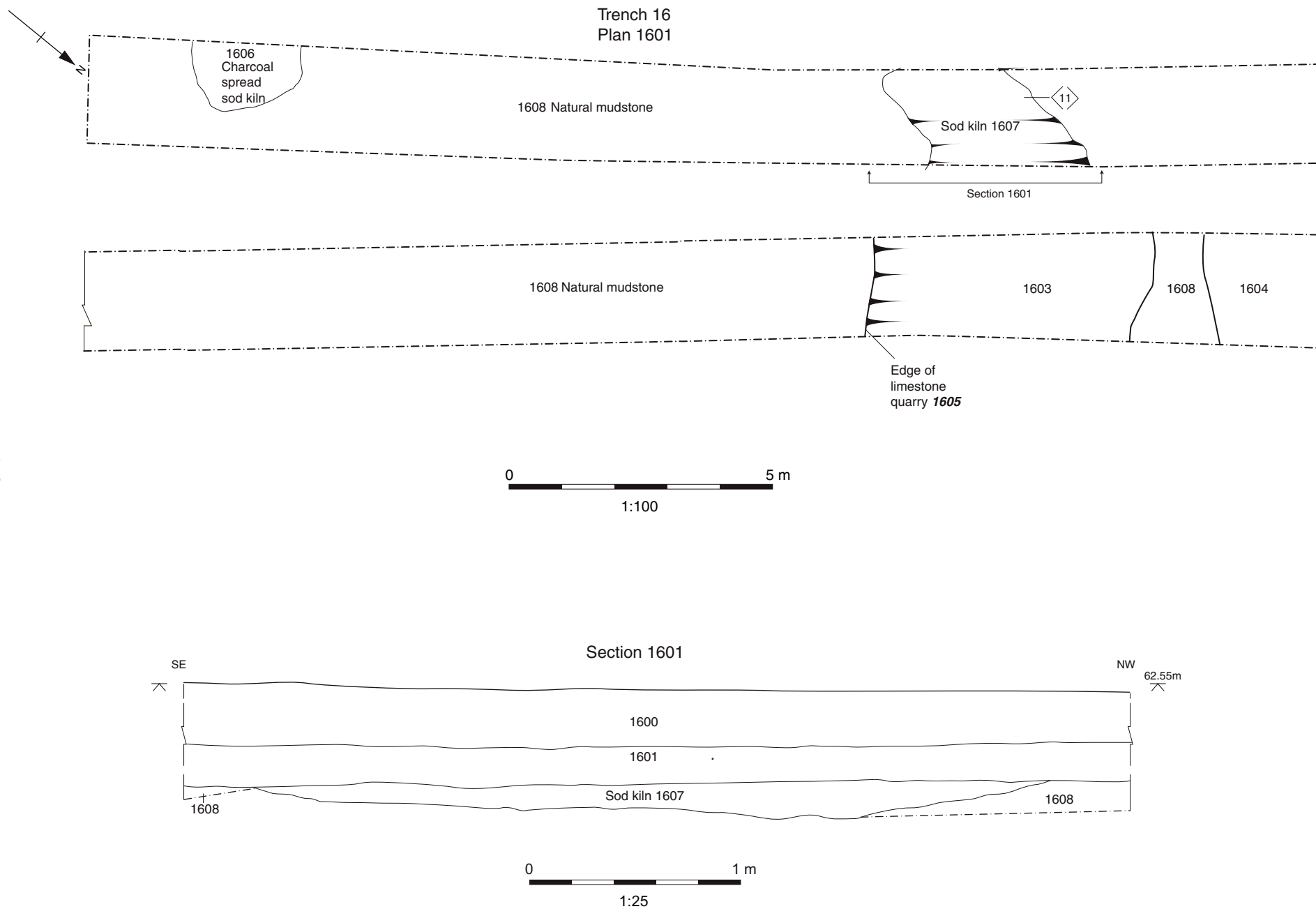


Figure 12: Trench 16, plan and section

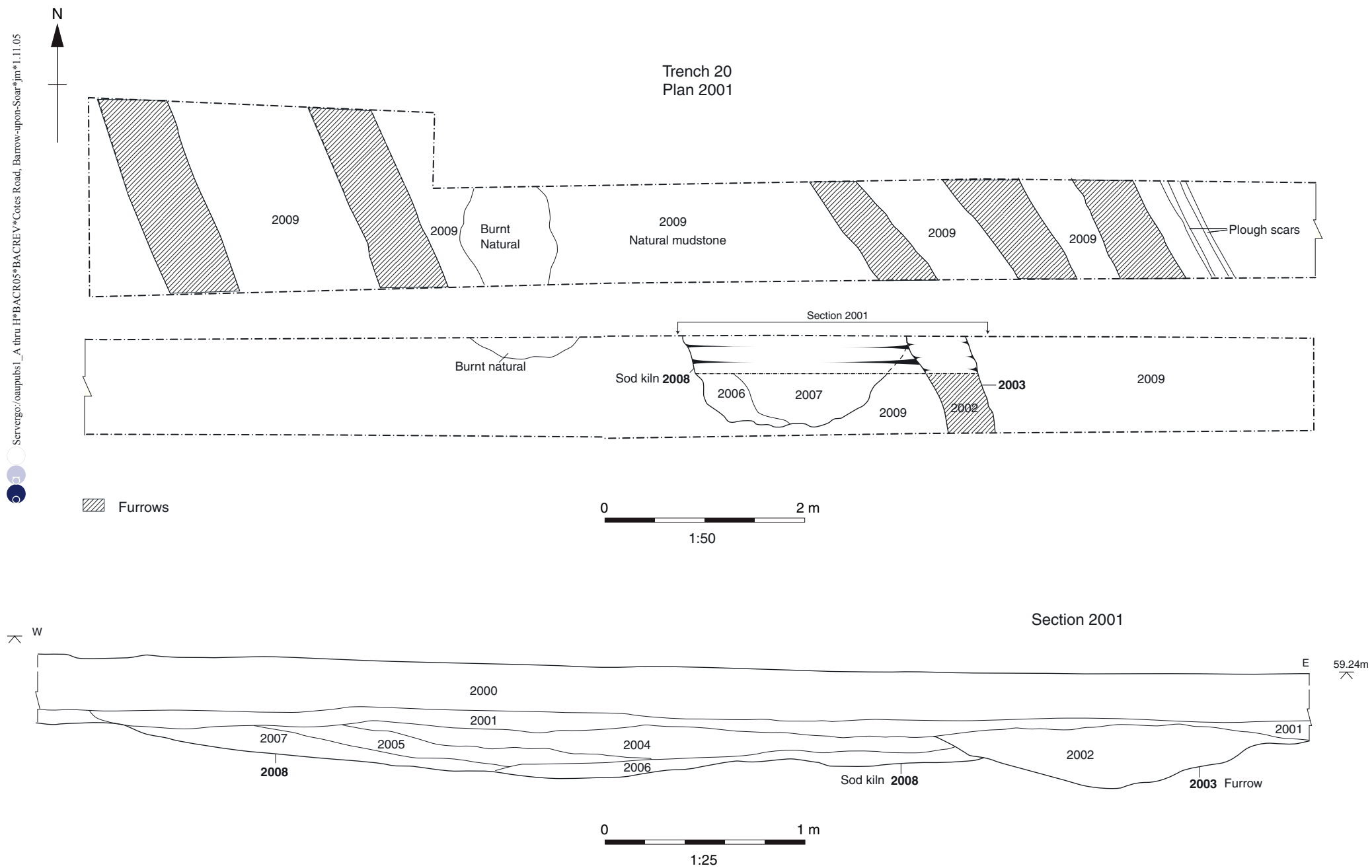


Figure 13: Trench 20, plan and section

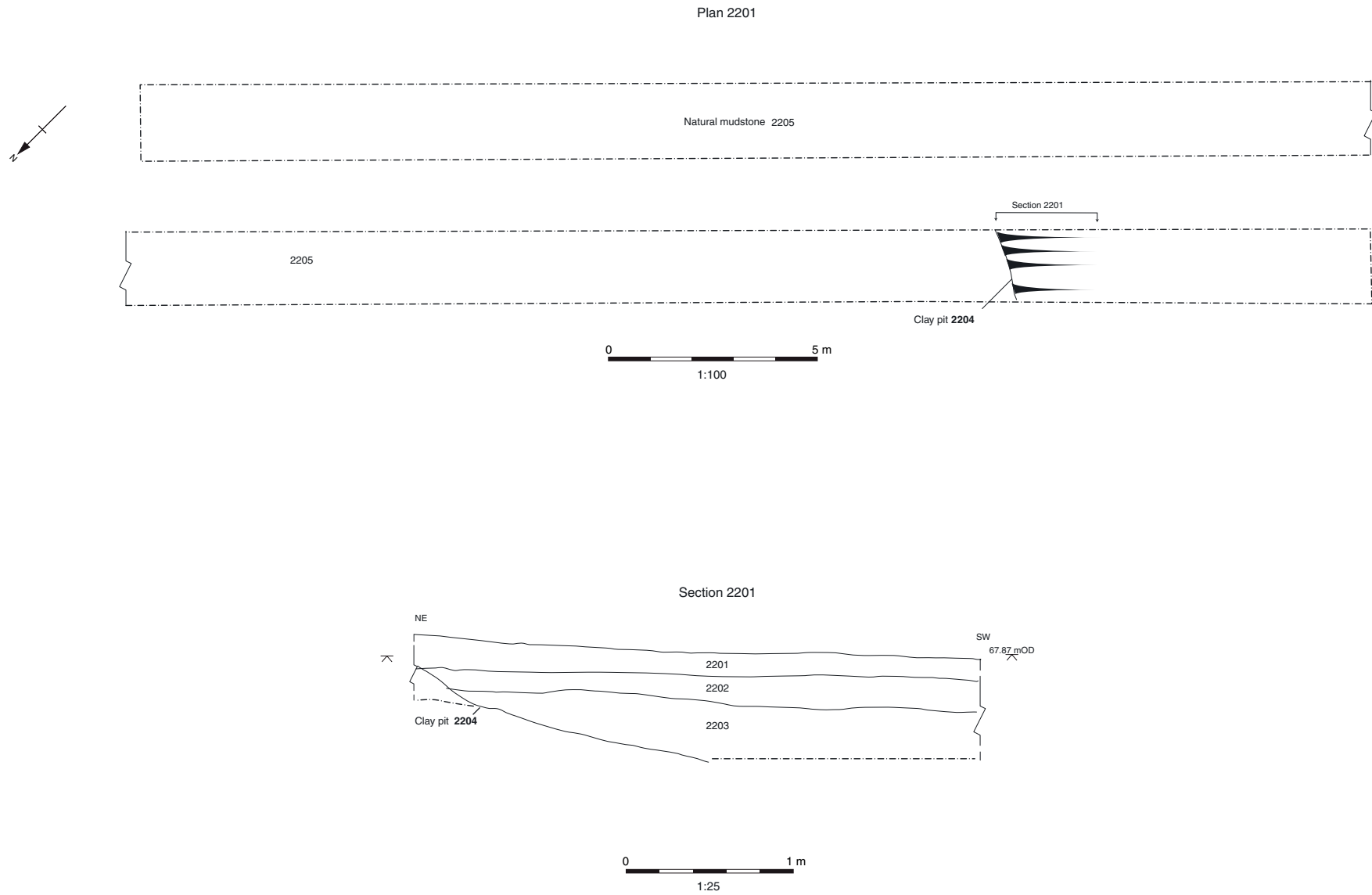


Figure 14: Trench 22, plan and section

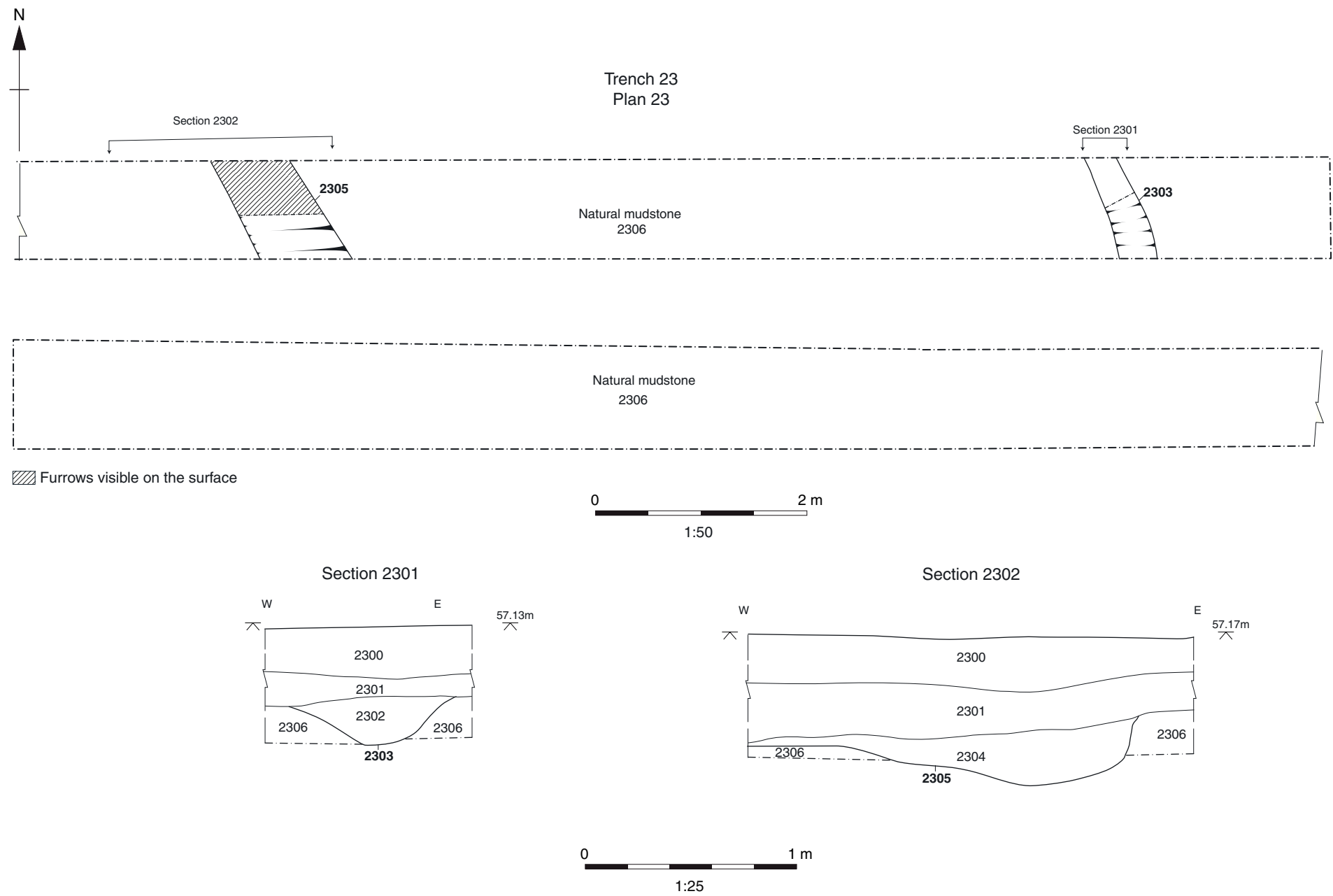


Figure 15: Trench 23, plan and section

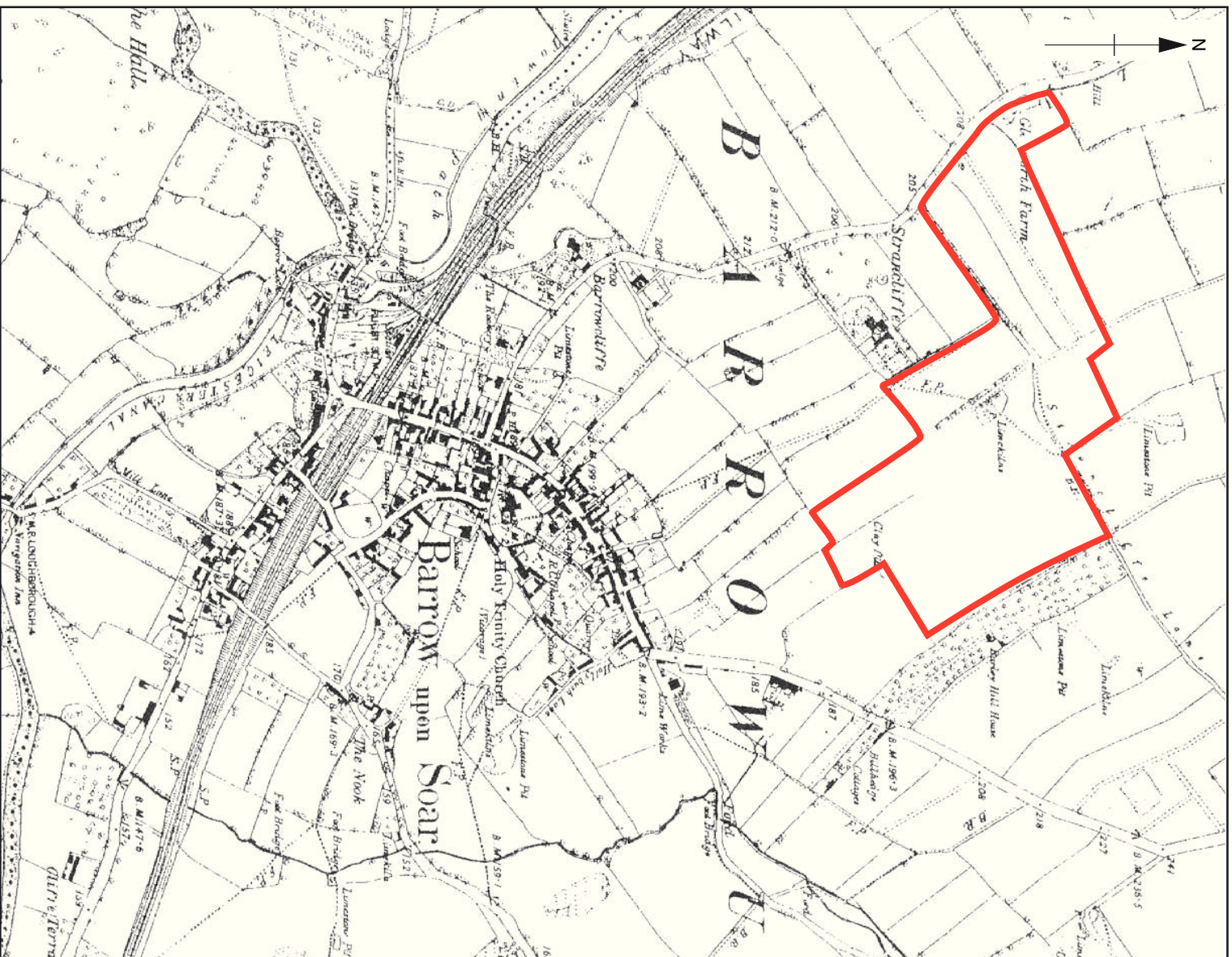


Figure 16: 1885 Ordnance Survey Map



Plate 1: Ditch 204, section 202



Plate 2: Lime-kiln/ Pye kiln 403



Plate 3: Lime-kiln/ Pye kiln 403, section 402



Plate 4: Lime-kiln/ Pye kiln 703, section 701



Plate 5: Trench 9, ditches 906 and 909



Plate 6: Trench 9, ditch 913, section 903



Plate 7: Limekiln/ pot kiln 1232, section 1201



Plate 8: Limekiln/ pot kiln 1223, section 1201



Plate 9: Track-way 1256, Trench 12



Plate 10: Track-way 1407, Trench 14



Plate 11: Medieval lime-kiln/ sod kiln 1607, section 1601



Plate 12: Medieval lime-kiln/ sod kiln 2008, section 2001