Calverton (Burnt Stump) Quarry, Arnold, Nottinghamshire Phase 3: Strip, Map and Record

For: Tarmac

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Summary

- Trent & Peak Archaeology (T&PA) was commissioned by Tarmac to undertake an archaeological strip, map and record excavation ahead of sand and gravel extraction at the site of Calverton (Burntstump) Quarry, Arnold, Nottinghamshire (NGR SK 58579 49435) (Figure 1).

- The quarry is located within the parish of Daybrook, approximately 2km south-west of the village of Calverton. It lies north of the junction between Oxton Road (B638) and Ollerton Road (A614). Access roads have been constructed along the perimeter of the site.

- The archaeological potential of the quarry was initially defined through a process of evaluation comprising a desk-based assessment (Atkinson & Josephs, 1999), supported by geophysical survey (Masters & Hindmarsh 1998) and field evaluation consisting of field walking and trial trenching (Southgate & Garton 1999; Garton et al 1999).

- The excavation revealed a number of truncated linear ditches of probable Iron Age date. Some of the ditches corresponded well with crop marks and formed part of a larger field system which extended to the north and south of the excavation area.

- Evidence for small scale post-medieval sand and gravel quarrying was also encountered in the form of irregular pits which had been backfilled with a combination of upcast material and domestic waste.

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- Kris Poole (Animal bone)
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1 Introduction

1.1.1 Trent & Peak Archaeology (T&PA) was commissioned by Tarmac to undertake an archaeological strip, map and record excavation ahead of sand and gravel extraction at the site of Calverton (Burntstump) Quarry, Arnold, Nottinghamshire (NGR SK 58579 49435) (Figure 1).

1.1.2 The archaeological potential of the quarry was initially defined through a process of evaluation comprising a desk-based assessment (Atkinson & Josephs, 1999), supported by geophysical survey (Masters & Hindmarsh 1998) and field evaluation consisting of field walking and trial trenching (Southgate & Garton 1999; Garton et al 1999).

1.1.3 Phase 1 excavations to the north-east of the site were subsequently conducted by T&PA (then Trent and Peak Archaeological Unit or T&PAU) in 2000. Phase 2 excavations were conducted by Archaeological Project Services (APS) in 2001 (Garton & Malone 2002) and by TPAU in 2004 (Garton & Guilbert 2005) and 2005. The archaeological mitigation works established evidence of a ditched field system, occupation evidence in the form of a range of pits and post-holes, many undated, but some associated with prehistoric and Romano-British pottery. 'Charcoal-laden' pits with burnt bases, interpreted as possible charcoal clamps, proved a distinctive feature of the site, and returned radiocarbon dates of the 10th-11th century.

1.1.4 Permission for a major southern extensions of the quarry was granted in 2001 (planning application number 7/2000/1522). Following a hiatus in extraction, Phase 3 commenced in July 2018. The first stage of excavations, discussed in this report, covered an area measuring 1.31 hectares.

1.1.5 The proposed extraction would be destructive of archaeological deposits within the development area. Therefore, the expansion of the quarry in Phase 3 required further archaeological mitigation.

1.1.6 For ease of reference within this report the c.1.31ha area subject to Strip, Map and Record will be referred to as 'the site'.

2 Project Background

2.1.1 Provisional permission was granted for the development upon the satisfactory completion of a program of archaeological mitigation. This constitutes Pre-Commencement Condition 14., which states:

> *No development (other than archaeological works) shall take place on any Phase until after the implementation of a programme of archaeological works in accordance with a written scheme of investigation, which has been submitted to and approved in writing by the Local Planning Authority. Within 3 months of the completion of the approved archaeological works a report containing details of the final archaeological recording work from the appointed archaeological contractor shall be submitted to the Local Planning Authority for approval. The development shall not be occupied until the report has been approved by the Local Planning Authority in writing.*
>
> *Reason: To ensure the archaeology on the site is fully assessed.*

2.1.2 A Written Scheme of Investigation (WSI) detailing a scheme of archaeological mitigation in the north-eastern corner of the proposed development area was subsequently submitted by T&PA and approved by the Local Authority. This document was produced with regards to both the

planning permission document, guidance provided by the Local Authority, and the results of the previous stages of archaeological evaluation. The WSI stated that the fieldwork be carried out in accordance with appropriate professional standards, as defined in the Chartered Institute for Archaeologists' (CIfA) *Standard & Guidance for archaeological excavation* (2014b).

2.1.3 The methodology employed by T&PA in the mitigation works conforms to the standard requirements of planning authorities where consent applications are made for development. These follow guidelines presented in the *National Planning Policy Framework* (DCLG 2012) which replaces conservation planning document *Planning Policy Statement 5: Planning for the Historic Environment* (PPS 5 2010).

3 Site Location and Background

3.1.1 The Phase 3 extraction site, which is approximately 1.31 hectares in size, extends south from the existing Calverton (Burnt Stump) Quarry and centres on SK 58579 49435.

3.1.2 The quarry is located within the parish of Daybrook and lies approximately 2km south-west of the village of Calverton. It lies north of the junction between Oxton Road (B638) and Ollerton Road (A614). Access roads have been constructed along the perimeter of the site.

4 Topography and Geology

4.1.1 The bedrock geology consists of Chester Formation Sandstone. (http://mapapps.bgs.ac.uk/geologyofbritain/home.html). The subsoils are mixed sands and gravels mapped as Sherwood Pebble Beds (Garton et al. 1999, 49).

4.1.2 The overlying soils of the site are recorded as freely draining, slightly acid sandy soils (www.landis.org.uk/soilscapes).

4.1.3 The quarry site lies on a flattish plateau at approximately 90-110m AOD with the ground rising gradually to the north and west. Several deep and well defined hollows lie alongside its eastern and northern edge. The Phase 3 excavation area is located at 105-107m AOD, rising gradually from the south-east to the north-west.

5 Historical and Archaeological Background

5.1.1 In 1998 a geophysical survey of the site was conducted by Northamptonshire Archaeology (Masters & Hindmarsh 1998). Seven sample areas were subject to a combination of resistivity and magnetometer survey. However, the magnetic susceptibility of the Keuper Marls and sandstone of this area is generally weak, making the site less than ideal for geophysical

survey (Atkinson & Josephs 1998). Consequently, only two anomalies of potential archaeological origin were identified, and these coincided with already known cropmarks.

5.1.2 In September to November 1998 Trent & Peak Archaeological Unit (T&PAU) conducted a field evaluation of three stages (Southgate & Garton 1999; Garton et al. 1999). The first stage involved the plotting of cropmarks visible from aerial photography. This was followed by the excavation of three trenches across the crop marks (Trenches 01-03) and seven across apparently blank areas (Trenches 04-10). Trenches 04-10 were so-called 'rapid excavation' trenches, designed to establish the presence or absence of features, which in most cases were not excavated. Finally, the entire area extending to the junction between Ollerton Road and Oxton Road was fieldwalked.

5.1.3 The evaluation trenches established field systems and features suggestive of settlement activity extending across the plateau, including areas which appeared as colluvial-filled hollows on aerial photography, and expanding on those recorded cropmarks on the SMR. In three of the trenches (6, 7 & 8), features were associated with Romano-British Derbyshire Ware. A prehistoric quartz-tempered sherd was recovered from Trench 10, in which a high density of postholes, pits and gullies were observed.

5.1.4 None of the trenches were excavated within the proposed Phase 3 extraction area. Trenches 01 and 03 were located 40m north and 30m south of the next phase respectively. The presence of cut features corresponding with the cropmark plot was identified in both trenches, with the latter also containing a series of intercutting postholes or slots. No datable artefacts were recovered. Trenches 04-06 were located <20m east of the proposed extraction area and revealed several cut features including pits and post-holes, but these were not investigated further.

5.1.5 Fieldwalking recovered a complete millstone to which a tentative Romano-British date was attributed (Wright & Brown 1999). Other than two sherds of Derbyshire Ware, little other material of archaeological significance was recovered; however, the authors suggest that both the de-stoning of the fields for potato crops, and limited truncation of sub-surface archaeological features by ploughing may have contributed to this result (Garton et al. 1999, 51).

5.1.6 Subsequent to these evaluations, an Environmental Statement was prepared for the quarry site in 1999. This summarised the evaluation and SMR (Sites and Monuments Record) evidence of probable field systems and enclosures, as well as a long boundary feature to the north-east curving towards the quarry site (Atkinson & Josephs 1998). The assessment also established that the land was included under the estate of a Henry Cavendish in 1791, and was part of the estate known as Ramsdale and Watchwood held by Thomas Houldworth in the 19th century. The pattern of field division at the time was observed to be similar to the present day.

5.1.7 Phase 1 excavations were conducted by T&PAU in 2000 at the north-eastern end of the site. Phase 2 excavations were conducted by Archaeological Project Services (APS) at the north end of the site in 2001 (Figure 2), with further areas excavated by T&PAU in 2002-5. The majority of these excavations took place in the field formerly known as Thief Dale (Garton 2002, 159).

5.1.8 The Phase 1 excavations identified natural linear periglacial features corresponding to elements of the cropmark plot. Elements of a rectilinear field system were also identified, later cut by a trackway associated with post-medieval pottery. Discrete features containing Romano-British pottery, pits containing sandstone blocks (in one case lining a possible hearth/oven) and charcoal-laden burnt pits were also identified. The latter category was suggested to be potential bases of charcoal clamps (Garton 2002). An environmental assessment of samples from this phase was conducted by Andrea Snelling, Rowena Gale and D.J. Rackham (2001).

5.1.9 Phase 2 excavations in 2001 established further evidence of the presumed Romano-British field system, which apparently did not continue into the topographical hollow at the north-western limit of the site. It also identified two 'working hollows' and an adjacent hearth in the

southern corner of the field associated with a higher density of Romano-British pottery than recovered elsewhere, with isolated postholes perhaps suggesting an associated structure (Malone 2005). Further 'charcoal-filled pits' were identified which were interpreted as post-dating the field system. In addition, the continuation of the post-medieval trackway identified in Phase 1 was recorded. Environmental assessment of samples from these pits suggested that the pits were likely the result of charcoal production carried out away from the main settlement area. Analysis suggested that timber was collected during the winter months and stripped clean prior to carbonisation (Martin & Rackam 2005).

5.1.10 In 2002-3 topsoil stripping for the bunds and access routes around the quarry was monitored by means of an archaeological watching brief. In 2002, at the eastern edge of the site, five pits with in-situ burning were observed and Romano-British pottery recovered from colluvial deposits. Also in 2002, at the north-western end of the site, the anticipated cropmark features were not identified, although two linear features on a different alignment were identified as well as a further two pits with evidence of in-situ burning (T&PAU 2003).

5.1.11 In 2004, further Phase 2 excavations at the north-western corner of the site were undertaken by T&PAU. These identified numerous further examples of the 'charcoal-laden pits', but again no datable artefacts were retrieved (Garton & Guilbert 2005). Oak roundwood samples submitted from two pits (SK 585 497) were however dated to 960 ± 40 and 995 ± 35, giving a date range of AD 920–1030. A single pit of distinct character was attributed to the prehistoric period on the basis of sherds of handmade pottery and fire-cracked pebbles, including one that had seemingly been previously used as a hammerstone.

5.1.12 At this time, examination of the linear cropmark features in the haul-road section caused the authors to question whether a substantial element of the apparent field system was not formed by natural periglacial features, arguing that the former interpretation of the site as a southern outlier of the brickwork-plan field-systems well known in northern Nottinghamshire, may now be considered dubious (ibid, 153).

5.1.13 In 2005 the final area of Phase 2 to the south was extracted (Area E), with archaeological mitigation again conducted by T&PAU.

6 Relevant Legislation and Guidance

Planning Context

6.1.1 The archaeological programme outlined herein is underpinned by the national legislation and local policies described below. The programme has been designed in consultation with the Local Planning Authorities at Nottinghamshire County Council and Tarmac.

6.1.2 This document has been produced in accordance with the guidelines laid out in the Management of Research Projects in the Historic Environment: The MoRPHE Project Managers Guide (Historic England 2015a) and the CIfA Standard and Guidance for an Archaeological Field Evaluation (CIfA 2014a) and Code of Conduct (CIfA 2014b).

National Planning Policy Framework (NPPF)

6.1.3 Developments of this nature, and their impact upon the historic environment, are addressed by the 2012 National Planning Policy Framework (NPPF), published by the Department for Communities and Local Government (DCLG), and the NPPF Planning Practice Guide Conserving and Enhancing the Historic Environment (DCLG 2014).

Section 12 of NPPF, paragraph 128, states that:

> *Planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of*

detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and where necessary a field evaluation.

In addition, paragraph 141 note 30 states:

Copies of evidence should be deposited with the relevant Historic Environment Record, and any archives with a local museum or other public depository.

Nottinghamshire Minerals Local Plan

6.1.4 The stipulations of this document are also intended to conform to local planning policy designed to protect Nottinghamshire's historic environment.

6.1.5 The Nottinghamshire Minerals Local Plan (Nottinghamshire County Council 2005) Policy M3.24 Archaeology states that:

Planning permission will not be granted for minerals development which would destroy or degrade nationally important archaeological remains and their settings, whether scheduled or not. Planning permission will only be granted for development which would affect archaeological remains of less than national importance where it can be demonstrated that the importance of the development outweighs the regional or local significance of the remains and where appropriate provision is made for the excavation and recording of the remains.

6.1.6 A new Minerals Local Plan is currently under consultation.

Gedling Borough Aligned Core Strategy- Local Plan

6.1.7 The development site is also covered by the local planning policy for Gedling which is included under the Greater Nottingham Aligned Core Strategy- Local Plan (Gedling Borough Council, Nottingham City Council & Broxtowe Borough Council 2014).

Policy 11 'The Historic Environment' states that

When considering applications which impact on the historic environment or heritage assets and their settings, the Councils will look to ensure they are conserved in accordance with their value and that the ability of the development to enhance that value is explored and taken where possible. When considering sites of potential archaeological importance, including those as identified on the Historic Environment Record for the area, the Local Authority will, where appropriate, request a prospective developer to arrange for an archaeological assessment or field evaluation before any decision on a planning application is taken. This will apply to sites currently identified and to any new sites subsequently identified.

7 Site Specific Objectives and Methodology

Objectives

7.1.1 Where practical within the constraints of the archaeological mitigation and development, this will include an assessment of the overall extent, date and state of preservation of archaeological remains

7.1.2 The general objective of the fieldwork can be summarised as:

- To identify the presence of any archaeological remains to be affected by any intrusive aspects of the development and to achieve an appropriate level of *preservation by record* in accordance with *NPPF paragraph 128*.

7.1.3 Where practical within the constraints of the archaeological mitigation and development, this will include an assessment of the overall extent, date and state of preservation of archaeological remains.

Methodology

7.1.4 The program of archaeological mitigation comprised the supervised excavation of topsoil and subsoil within an area measuring c.1.3ha, followed by strategic excavation and recording of archaeological remains present (see sample excavation strategy 7.2.5).

7.1.5 All work was undertaken by suitably qualified and experienced archaeologists in accordance with accepted archaeological practice and the *Code of Conduct* produced by the Chartered Institute for Archaeologists (CIfA 2014a). The work was also carried out in adherence to the relevant WSI produced by T&PA.

7.1.6 Topsoil and Subsoil was excavated in spits no greater than 100mm using a 360^{o} tracked excavator fitted with a toothless ditching bucket. Spoil was checked for artefacts including the use of a metal detector before being stored a safe distance from the excavation edge.

7.1.7 The excavation area and any archaeological features were located by GPS, Leica CS15/GS15 RTK Differential GNSS where possible within the constraints of the site.

7.1.8 All exposed surfaces were inspected and any archaeological deposits were hand cleaned and recorded where appropriate. Features were further characterised through excavation where necessary to obtain datable material and understand the levels of preservation. Excavation was sufficient to determine form, and where possible function, date and stratigraphic relationship.

7.1.9 All contexts were given an individual context number. Plans and sections of all features were drawn on drafting film in pencil at a scale of 1:20/1:50, and showed at least context numbers, all colour and textural changes and principal slopes represented as hachures. Digital colour photographs of each context were taken using a DSLR at 7 megapixel minimum resolution. Written records were maintained as laid down in the T&PA recording manual.

7.1.10 Where appropriate features were identified, soil samples were retrieved in order to undertake palaeo-environmental sampling. The sampling of features followed procedures set out within the English Heritage Centre of Archaeology Guidelines, *Environmental Archaeology* (2011). Samples were processed within the T&PA Environmental Lab, under the supervision of T&PA Environmental Officer Kristina Krawiec.

8 Regional Research Objectives

8.1 Following the completion of Phases 1 and 2 the following strategies were identified by T&PAU as priorities for Phase 3:

8.1.1 Recording the distribution of pits with burnt bases and charcoal-rich fills.

8.1.2 Mapping the plan of any rectilinear field system, with particular attention to gaps or junctions

8.1.3 Excavating the intersections of intercutting features to establish a stratigraphic sequence

The following research objectives were also identified:

Settlement

- *Is the settlement within the development site?*
- *Does it have a focus?*
- *When was it established and abandoned?*
- *What activities took place there*

Field systems

- *When did it originate?*
- *How was it modified over time?*
- *How did it relate to the settlement pattern?*
-

Palaeosols

- *Do palaeosols survive*
- *Are archaeological deposits buried below colluvium*
- *Do the sequences preserve palaeoenvironmental remains?*

8.1.4 In addition, it was suggested that a further refinement of the distinction between periglacial features and elements of the presumed Romano-British field system was required. In the first instance, this sought to further clarify mapped features, as already suggested, and excavate features with the aim to retrieve datable artefacts. In the absence of datable artefacts, bulk sampling for environmental remains may yield datable material, particularly if charcoal is observed during excavation. If these strategies do not prove fruitful, alternative dating methods such as OSL (optically stimulated luminescence) dating of sediment should be considered, providing the sediment is suitable (i.e. containing a significant sand component). Alternative dating methods should also be considered for undated features associated with settlement, such as pits and postholes, of which many of those previously excavated have remained undated.

8.1.5 Environmental recommendations made by Martin & Rackham (2005) include further analysis of species, identification, type and age of wood from the charcoal laden burnt pits, in order to establish the function of the pits, the character of the wood being exploited and any evidence for woodland management.

8.1.6 The Phase 3 excavations also have the potential to address regional research objectives. The East Midlands Historic Environment Research Framework (EMHERF) Interactive Digital Resource http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/ hosts a digitised version of Knight, D., Vyner, B. and Allen, C.'s (2012) East Midlands Heritage and Updated Research Agenda and Strategy for the Historic Environment of the East Midlands. The following Agenda Topics are considered to be relevant to the proposed excavations:

Romano-British (AD 43 – *c.*410)
5.4 Rural Settlement patterns and landscapes
4. How did field and boundary systems relate to earlier systems of land allotment, and how did these boundary networks develop over time?
Early Medieval (*c.* AD 410 - 1066)
6.7 The agricultural economy and rural landscape
5. To what extend did woodland regenerate in the post-Roman period and how were woodlands used and managed?

Table 1: Relevant Research Questions Highlighted in the Regional Framework

9 Results

Overview

9.1.1 Excavation revealed a moderate density of archaeological activity within the stripped 1.3ha area, all broadly corresponding to two apparent phases of land use (Figure 2, 3). All features appeared to be heavily truncated by recent agricultural activity.

9.1.2 The geological substratum was revealed at approximately 0.45m BGL and was formed in large part of yellow – orange sandy gravels (1001, 1004, 1098). Mixed or marbled sandy deposits or periglacial scars were identified across the site, and within deposits (1161, 1162) which were investigated to determine the presence or absence of anthropogenic activity. The substratum was overlaid by a c.0.42-45m thick deposit of cultivated friable light brownish grey topsoil for maize crop, the same across the site.

9.1.3 The following features have been described in stratigraphical, chronological sequence. All interventions have been assigned an individual context number (see Appendix A). Features were assigned to group numbers where they were found to represent the same feature. Where possible, features are discussed below according to these group numbers (figure 3).

Iron Age

Ditch [1060] (Figure 3, 6, 11 DR#07 & Figure 12 DR#08; Plates 2 - 4)

9.1.4 The earliest archaeological feature identified within the site boundary was ditch [1060]. Measuring c.21m in length, the feature extended out of the northern baulk following an approximate north-east by south-west alignment. Excavation revealed a generally consistent V-shaped profile with slightly irregular sides and a concave base, measuring between 0.6m –

1.5m in width, 0.20m-0.60m deep with a general increase in depth towards the north-east. The ditch did not appear to have been maintained and was filled with a homogenous friable brown – grey silt sand deposit.

9.1.5 Datable ceramic material, in the form of one body sherd of handmade pottery (AAJ), was retrieved from the fill of the ditch, dating to the Iron Age period.

9.1.6 The paucity of charcoal or charred grains retrieved from environmental samples would suggest that the ditch was located away from any settlement foci.

Post-Medieval

Possible quarry pits [1044] and [1048] (Figure 3, 5, & 9 DR#02; Plates 5 and 6)

9.1.7 Two probable intercutting pits [0144], [0148]. Both features were oval in shape, with a consistent wide U- shaped profile, measuring between 1.7m and 2.1m in diameter and between 0.40 and 0.86m deep (Fig 3). They were filled with a loose, sandy silt and were overlain by a dump/spread of brownish grey silt sand (0142). Post-medieval domestic waste material, in the form of pottery and clay pipe sherds, was recovered from the fill of pit [0144] and spread (0142).

Possible quarry pit [1005] (Figure 3, 6, & 10 DR#03; Plate 7)

9.1.8 An elongated, sub-oval pit aligned north-east to south-west (Fig 3), measuring at least 11m in length, 4m in width and 0.83m deep. Investigation revealed a wide U-shaped profile which had a primary fill of homogenous dark brown silty sand (1007). This was sealed by a dump of loose brown sand (1006) which produced fragments of ceramic building material, clay pipe stems and animal bone fragments.

Possible quarry pit [1073] (Figure 3, 6 & 10 DR#04 & 11 DR#05; Plates 8 - 9)

9.1.9 An elongated, sub-oval pit aligned north-east to south-west measuring 14m in length, 5m in width and 0.30m-0.86m deep. Investigation revealed a profile varying from gradually sloping sides and a broad flat base to steeply sloping sides and a narrow concave base. Basal fills indicate that some localised erosion and slumping of the feature edges had occurred. These were sealed by fills (1015, 1066), comprised of dark brown silty sand to a which in turn was overlain by lenses of light brown silty sand (1013, 1014, 1067, 1068).

Modern

Animal Burial [1157] (Figure 4)

9.1.10 A shallow, sub-oval pit with a rounded base, it contained the skeletal remains of a young female sheep. The condition of the bone, despite the acidic nature of the soils in the area, would suggest that the burial dates no later than the 19th century. The completeness of the burial suggests that the animal had died from a disease which precluded consumption, and had been buried close to the area of death (Poole, section 11).

Undated

Ditch [1033] (Figures 3 and 11 DR#06; Plate 10)

9.1.11 A sinuous ditch aligned north north-west by south south-east, which extended out of the southern baulk. The exposed portion of the ditch measured approximately c.21m in length and 0.7m in width. Investigation revealed a shallow, v-shaped profile, measuring 0.29m deep,

which was consistent across the length of the ditch. The ditch contained a single fill of firm orange brown sand and silt which yielded no datable material.

Ditch [1036] (Figures 3 and 11 DR#06; Plate 10)

9.1.12 Ditch [1033] was recut along its length by [1036], displaying a far shallower wide-U shaped profile with a similar consistent depth of 0.3m. The ditch contained a similar naturally silted fill of mid orangish brown silt sand, and terminated in approximately the same location after bifurcating near the north-eastern terminus (Figure 3). The two ditches are likely to be broadly contemporary features though both are undated.

Pit [1018] (Figure 3)

9.1.13 A shallow, oval pit was identified truncating the terminus of [1033], measuring approximately 0.51m x 0.28m x 0.11m. Investigation revealed a flattish-concave base which had been infilled by a deposit of light brownish grey silt sand.

Pit [1022] (Figure 3; Plate 11)

9.1.14 A sub-oval pit was identified truncating the northern edge of ditch [1033], adjacent to the north-eastern terminus, measuring c.1m x 0.63m x 0.34m. Pit [1022] revealed an irregularly sloping profile, initially infilled by a naturally silted deposit of light yellow grey fine silt sand. This was overlain by a deposit of backfilled firm grey silt that contained an abundance of small charcoal flecks.

Ditches [1065] and [1097] (Figure 3, & 12 DR#09; Plate 12)

9.1.15 Two parallel ditches, spaced 1m-2m apart and aligned north-west to south-east. Both appeared to have been heavily truncated by later ploughing, becoming fragmentary at their north-western ends. Both measured 0.47m – 0.5m in width and 0.12m – 0.18m in depth, which increased to the north. Both had been left to infill naturally with a firm mid yellow brown silty sand which was consistent across the site.

Burnt pit/ Tree throw [1111] (Figure 4; Plate 13)

9.1.16 A sub-oval feature with a shallow, asymmetrical profile measuring 0.7m long, 0.45m wide and 0.2m deep. It was filled by a deposit of charcoal rich, loose, dark greyish-black silty sand. Evidence of *in-situ* burning and subsequent palaeoenvironmental analysis suggests the feature may have resulted from woodland clearance.

Burnt Spreads (1116) and (11047) (Figure 4; Plates 14 and 15)

9.1.17 Shallow, spreads of burnt dark grey/black silt sand. The lack of *in-situ* burning suggests that the spreads represent recent dumps of burnt material. No charcoal was present, though a number of fire cracked pebbles were identified.

Pits [1118] and [1132] (Figure 4, 8 & 12 DR#10; Plate 16)

9.1.18 Two elongated pits which both measured 1.2m long by 2.8m wide and were excavated to a depth between c. 0.34m - 0.56m. The features shared a comparable steep, v-shaped profile and were infilled by the same charcoal rich mid yellow brown sandy silt. Uncharred goosefoot seeds identified during palaeoenvironmental analysis within the fill of [1118] suggest that the feature may have been left open to infill naturally.

10 The Finds *by Alison Wilson, with contributions by Dr. David Knight*

The Pottery

10.1.1 A total of 4 fragments of pottery weighing 27g were recovered during the excavation. These ranged in period from the late Iron Age to the 19th century. The pottery was examined both visually and using a x10 hand lens, then quantified by two measures; number of sherds and weight. The resulting archive is stored in one archive box which is at present kept at the Trent & Peak Archaeology stores, Chilwell, Nottingham.

Material	Description	Quantity	Weight
Prehistoric pottery	Body sherd	1	9g
Post-medieval pottery	Body sherds	3	18g
Clay tobacco pipe	Stem fragments, 2mm bore diameter	2	6g
Shell	Complete oyster	1	11g
Metal	Iron fragments	4	247g
Brick/tile	Fragments	4	167g
Bone	Animal bone	34+	69+g

Prehistoric

10.1.2 A single body sherd of hand-made pottery, probably Iron Age in date, was recovered from (1061), the fill of ditch [1060].

Post-medieval

10.1.3 A small collection of post-medieval pottery totalling 3 sherds was recovered from the fill of 3 pits. Sub-circular pit [1002] contained a fragment of 18th – 20th century White Bodied Earthenware. Spread (1042) contained a body fragment of Mocha/Yellow Ware which was developed in Staffordshire in the late 18th – early 20th centuries and pit [1044] contained a coarse earthenware body sherd of orange brown fabric with brown to black glaze from a flared dish or pancheon.

Discussion

10.1.4 The small pottery assemblage recovered comprised of pottery of a post-medieval date, with a single sherd of probable Iron Age pottery.

10.1.5 All of the post-medieval pottery is likely to derive from domestic household discards (tableware and utilitarian products) during the 18th and 19th centuries. Production is likely to be at several places, including North Staffordshire (whiteware) and Ticknall (Mocha Ware), although the origins of the coarse earthenware could include various local sources including Ticknall.

10.1.6 It is difficult to interpret such a small assemblage; however, the presence of Iron Age pottery would warrant further investigation.

Ceramic Building Material

10.1.7 3 fragments of tile and a single fragment of brick were recovered during the archaeological investigation. The brick was found in the fill of ditch [1005], while the fragments of tile were found in the fill of pits [1073] and [1042]. They are of post-medieval date.

Metal

10.1.8 A total of 4 iron metal finds were recovered. This assemblage consisted of 3 nails found in the topsoil (1000) and the fill of spread (1042), along with a piece of farm machinery recovered from pit [1073]. All are of post-medieval origin.

Clay Tobacco Pipe

10.1.9 The partial stems of 2 clay tobacco pipes were recovered from the fill of pit [1005] and spread (1042).

10.1.10 In the absence of any identifying features such as makers' stamps or decoration, the stems have been dated using bore hole diameter (early clay pipes have a bore diameter of 3mm, decreasing over time until stems by the middle of the 18th century had a bore of less than 2mm). Both fragments recovered had a bore hole diameter 2mm and were of an 18th – 19th century date.

Miscellaneous finds

10.1.11 A single complete oyster shell was recovered from the cut of terminus [1062] and fragments of coal from ditch [1005].

11 The Faunal Remains *by Dr Kris Poole*

11.1.1 A small bone assemblage of bone was recovered from the site, all from post-medieval contexts, except for the complete sheep skeleton, which was not found with any dating evidence, but given its size, is likely to be of pot-medieval or modern date. The assemblage is described by context below. Given the very small size of the assemblage, it cannot contribute towards understanding of the site.

Pit [1002]/(1003)

11.1.2 Three large-mammal sized long bone fragment were recovered from this context, all in fair condition. One fragment had been sawn through, perhaps for bone working, or for division of a carcass.

Pit [1005]/(1006)

11.1.3 Five bone fragments were recovered from this context, three of sheep and two large mammal-sized long bone fragments. The bone was in good to fair condition. The sheep bones were a left distal tibia from an individual less than 20 months old at death, a fragment of a right-sided pelvis and a metacarpal from an individual less than 20 months old at death.

Spread (1043)

11.1.4 This context contained three sheep teeth (an upper third molar, a lower first molar and a lower third molar, all from the left-hand side) and a sheep second phalanx, as well as two medium-mammal sized bone fragments (one of which had broken into several extra fragments along fresh breaks), and seven large-mammal sized long bone fragments.

Pit [1073]/(1068)

11.1.5 Three medium-sized mammal long bone fragments were retrieved from this context. The bone was in fair condition and no butchery marks were observed.

Animal Burial [1157]/(1158)

11.1.6 This context contained a near-complete skeleton of a sheep, with only the skull and mandibles missing. All of the long bone epiphyses had fused. Indicating that this individual was at least 42 months old at death. The morphology of the pelvis suggested that it was a female sheep. The bone was in good condition and no butchery marks were apparent on the bones. These factors, coupled with the completeness of the skeleton and the large size of the bones suggests that this is a deliberate burial of relatively modern date. It most likely represents a diseased animal that was disposed of near where it died.

12 The Environmental Samples *by Mariangela Vitolo*

Introduction

12.1.1 Fifteen bulk soil samples were taken from the fills of various features to recover environmental material such as charred plant macrofossils, wood charcoal, fauna and Mollusca as well as to assist finds recovery. The following report summarises the contents of the samples and discusses the information provided by the charred plant remains and charcoal on diet, agrarian economy, vegetation environment and fuel selection and use.

Methodology

12.1.2 The samples were processed by flotation by Trent and Peak Archaeology. Meshes of 500 and 250 µm were used for the retention of the residues and flots respectively and the resulting flots and charcoal fragments were received by Archaeology South East. The whole flots (or subsamples for the larger ones) were then scanned under a stereozoom microscope at 7-45x magnifications and their contents recorded (Table 1). Preliminary identifications of macrobotanical remains were made with reference to modern comparative material and published reference atlases (Cappers et al. 2006, Jacomet 2006, NIAB 2004). Nomenclature used follows Stace (1997).

12.1.3 Charcoal fragments were fractured along three planes (transverse, radial and tangential) according to standardised procedures (Gale & Cutler 2000). Specimens were viewed under a stereozoom microscope for initial grouping, and an incident light microscope at magnifications up to 400x to facilitate identification of the woody taxa present. Taxonomic identifications were assigned by comparing suites of anatomical characteristics visible with those documented in reference atlases (Hather 2000, Schoch et al. 2004, Schweingruber 1990). Genera, family or group names have been given where anatomical differences between taxa are not significant enough to permit more detailed identification. Nomenclature used follows Stace (1997), and taxonomic identifications of charcoal are recorded in Table 2.

Results

12.1.4 Flot matrix composition was variable but, with a few exceptions, uncharred material constituted more than 50% of the whole flot. This uncharred material consisted in rootlets as well as seeds of various taxa and in most cases it is likely to be indicative of disturbance, having infiltrated the deposits through root action. However in a couple of cases, namely for two ditch fills, some of the uncharred seeds might have been survived as a result of the deposits being well-sealed and/or intermittently waterlogged. A large number of sturdy seeds that might have survived under the right conditions occur for example in ditch fills [1065] and [1097]. Identified taxa included cherries (Prunus sp.), knotweeds (Polygonum sp.), goosefoot (Chenopodium sp.) and elder (Sambucus nigra). Charred plant macrofossils occurred sporadically. In total, two caryopses of wheat (Triticum sp.) were recovered from the site. Remains of wild plants included seeds of cherries, black bindweed (Fallopia convolvulus) and ivy leaved speedwell (Veronica hederifolia) as well as a grass family culm node.

12.1.5 Charcoal suitable for identification was extracted from four pits. Most of the charcoal had floated and sediment encrustations were hardly noted, suggesting that the water table was

relatively stable. Apart from vitrification noted on the fragments from pit [1144], the preservation was generally good. Oak (Quercus sp.) was identified from all four features, whilst hazel (Corylus avellana), holly (Ilex aquifolium) and gorse/broom (Leguminosae) occurred less commonly. Round fragments of several taxa were noted.

Discussion

12.1.6 The bulk soil samples from Burnt Stump Quarry have yielded ecofacts in variable quantities. Charred plant macrofossils were scarce, but given the good preservation of the charcoal, this is unlikely to be due to local soils conditions and it could be due to circumstances of deposition or related to the use of the single features. The wheat caryopses represent a background signature, probably deriving from activities of crop processing or food preparation carried out on site. Uncharred seeds were present and although they mostly represent contaminants, some might have preserved due to favourable depositional conditions. All the recorded uncharred taxa produce seeds that are fairly sturdy and woody and that would be more likely to survive if anoxic conditions were not permanent. These taxa are not the remnants of food, but are likely to have derived from the local vegetation growing in the vicinity of the features, although the cherry and elder trees could have been exploited for food.

12.1.7 Charcoal preservation was excellent. The assemblage yielded a limited array of woody taxa, likely sign of a strict fuel selection. Oak is an excellent fuel and can also be used as timber (Taylor 1981) and hazel also burns well. Both trees could have grown together in a mixed deciduous woodland. Gorse and broom grow on heathland and gorse especially is a valuable source of fuel (Rotherham 2007). Holly also occurs in woodland, but also as a shrub in hedgerows. The presence of round wood fragments indicates the exploitation for fuel of twigs or small branches collected from the woodland floor.

12.1.8 There is good potential for the preservation of ecofacts in the local deposits. The excellent preservation noted on the charcoal assemblage indicates that the local soils are suited for the preservation of charred material. In addition, some of the deep features, in particular ditches, might present some well-sealed fills with the possibility of permanent or intermittent anoxic preservation. Any future work at the site should continue to include sampling, targeting primary deposits and paying particular attention to the possible presence of waterlogged deposits.

13 Discussion and Conclusion

13.1.1 The excavation revealed a moderate level of archaeological remains focused in the south west part of the site. The absence of subsoil and only a thin covering of topsoil meant that all of the features had been subject to truncation through ploughing. It is likely that any postholes, pits or ephemeral features had been completely truncated and lost. Two phases of activity were identified dating to the Iron Age and post-medieval periods.

Iron Age

13.1.2 The earliest dateable feature on the site was ditch [1060], although it's designation as an Iron Age feature is based on a single sherd of pottery. Its alignment corresponded well with a cropmark identified from aerial photography which continued to the north-east, beyond the current excavation area, for a further 100m. A parallel crop mark ditch, which was not identified on the site, may have been completely removed by ploughing.

13.1.3 Two truncated and fragmentary parallel ditches [1065] and [1097] were not visible as cropmarks which is perhaps unsurprising given their very shallow nature. Although undated, their alignment could suggest a north-west return of ditch [1060] which may also have had an accompanying parallel ditch as suggested by the cropmark plot.

13.1.4 Intercutting ditches [1036] and [1033] corresponded well with a similarly aligned cropmark ditch continuing south-east, beyond the excavation area (Fig 13). Although no dating evidence

was retrieved from the ditches a previous evaluation trench investigated the cropmark approximately 130m to the south of the excavation area and revealed two similar intercutting ditches. Pottery, broadly prehistoric in date, was retrieved from the earlier ditch (T&PAU 1999). A third linear cropmark, parallel to the intercutting ditches was not present in the excavation area. Investigation of the feature during an earlier evaluation suggested it was likely to be naturally formed water runoff channel (*ibid).*

13.1.5 Similar ephemeral erosion features could account for two further north-west to south-east linear cropmarks which appeared on the plot but were not identified in the excavation area. A third linear cropmark corresponded well with a similarly aligned geological feature identified to the east of ditch [1097] (Fig 13)

Post Medieval

13.1.6 Localised post-medieval gravel or sand quarrying at the site is suggested by the presence of a number of large, irregularly shaped pits identified towards the west of the excavated area. The pits were not visible as cropmarks and appear to predate the 1st Edition Ordnance Survey map of c.1889, which does not record them. However such small scale operations were likely to have been short lived and rapidly backfilled so their absence from historic mapping cannot be relied upon for dating evidence.

13.1.7 Localised quarrying was widespread throughout the rural landscape of the east-midlands, many of which are identified outside of concentrated settlement foci (Cooper 2006). They typically functioned as small, parish quarries which provided extracted material for local markets and tradesmen. Similarly to examples noted across the East Midlands (Best et al 1978), the pits identified within the site were subsequently backfilled with a mix of dug out and domestic waste material.

Conclusions

13.1.8 The investigation has revealed a number of truncated ditches of probable Iron Age date which appear to be part of the wider field system identified to the north and south of the excavation area. The relatively cohesive nature of the field system as suggested by the cropmarks may be misleading as a number of the long north-east to south-west aligned linears may represent erosion features rather than ditches.

13.1.9 The paucity of artefactual evidence reflects the site's location outside of the more focused area of activity to the north-west. Plant macrofossils and charcoal were similarly scare but well preserved, suggesting oak and hazel were selected as fuel and wheat crop processing was undertaken close to the site.

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Online Resources

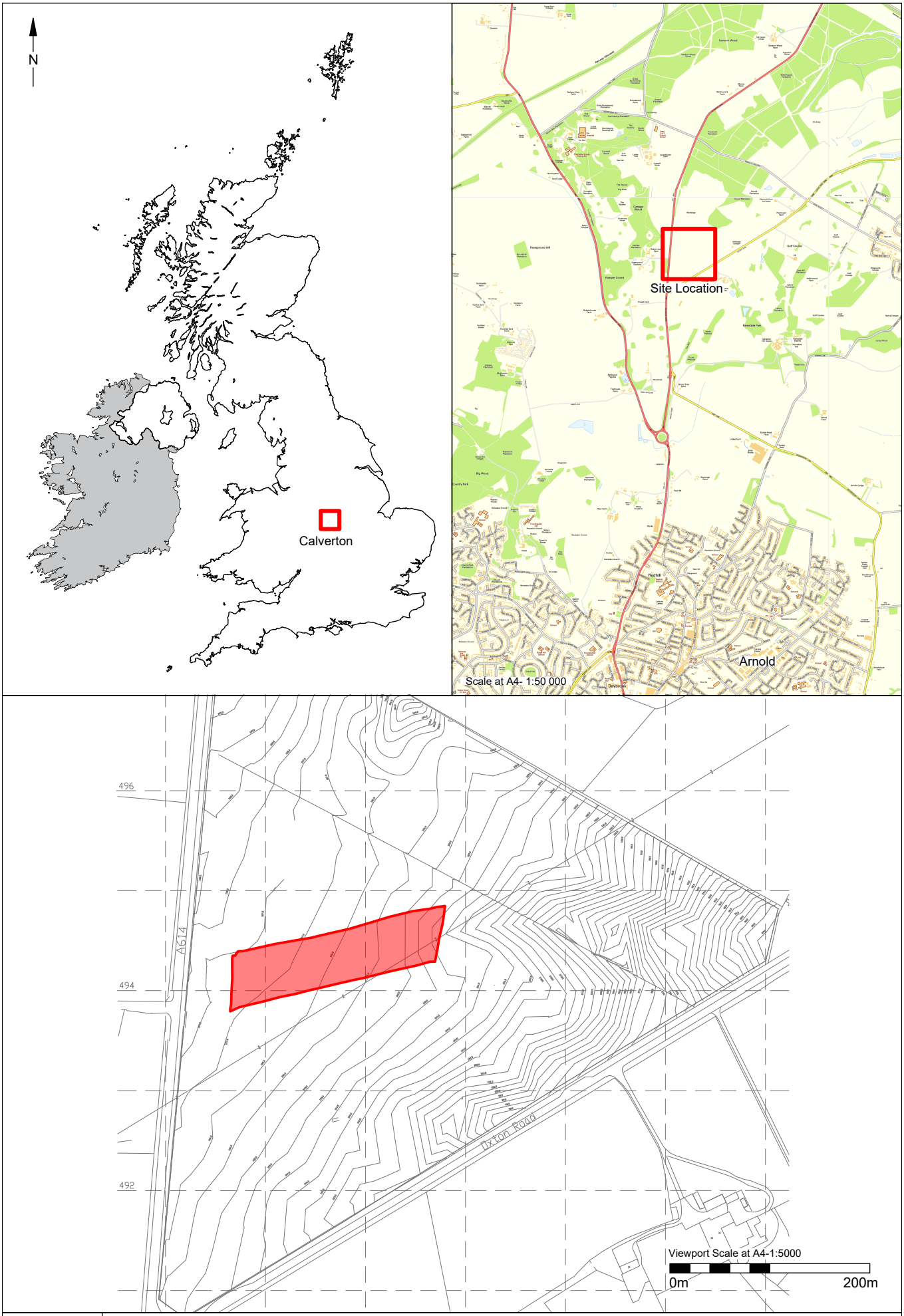
British Geological Survey Map Viewer; http://mapapps.bgs.ac.uk/geologyofbritain/home.html (Accessed 2018).

Cranfield Soil and Agrifoods Institute. Soilscape Map Viewer; www.landis.org.uk/soilscapes (Accessed 2018).

East Midlands Historic Environment Research Framework Interactive Digital Resource. http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/Main

NLS 2018 *National Library of Scotland Ordnance Survey Map Images*: available from https://maps.nls.uk/geo/find/#zoom=13&lat=52.9086&lon=-0.6486&layers=102&b=1&point=52.8951,-0.6390 [accessed 24/10/2018]

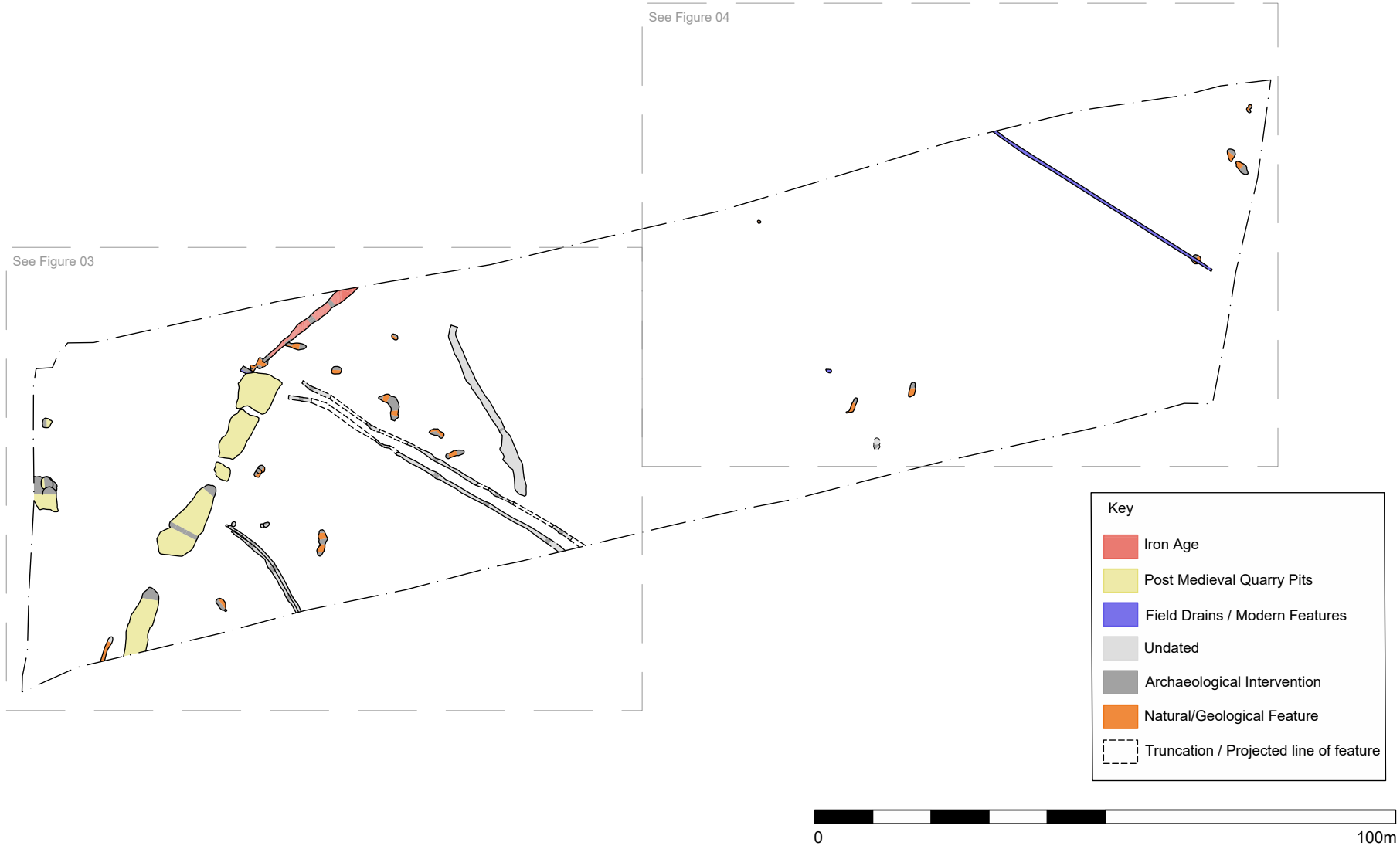
Figures



Trent & Peak ARCHAEOLOGY

Figure 01 - Location Map
ORA10 - Calverton (Burntstump) Quarry

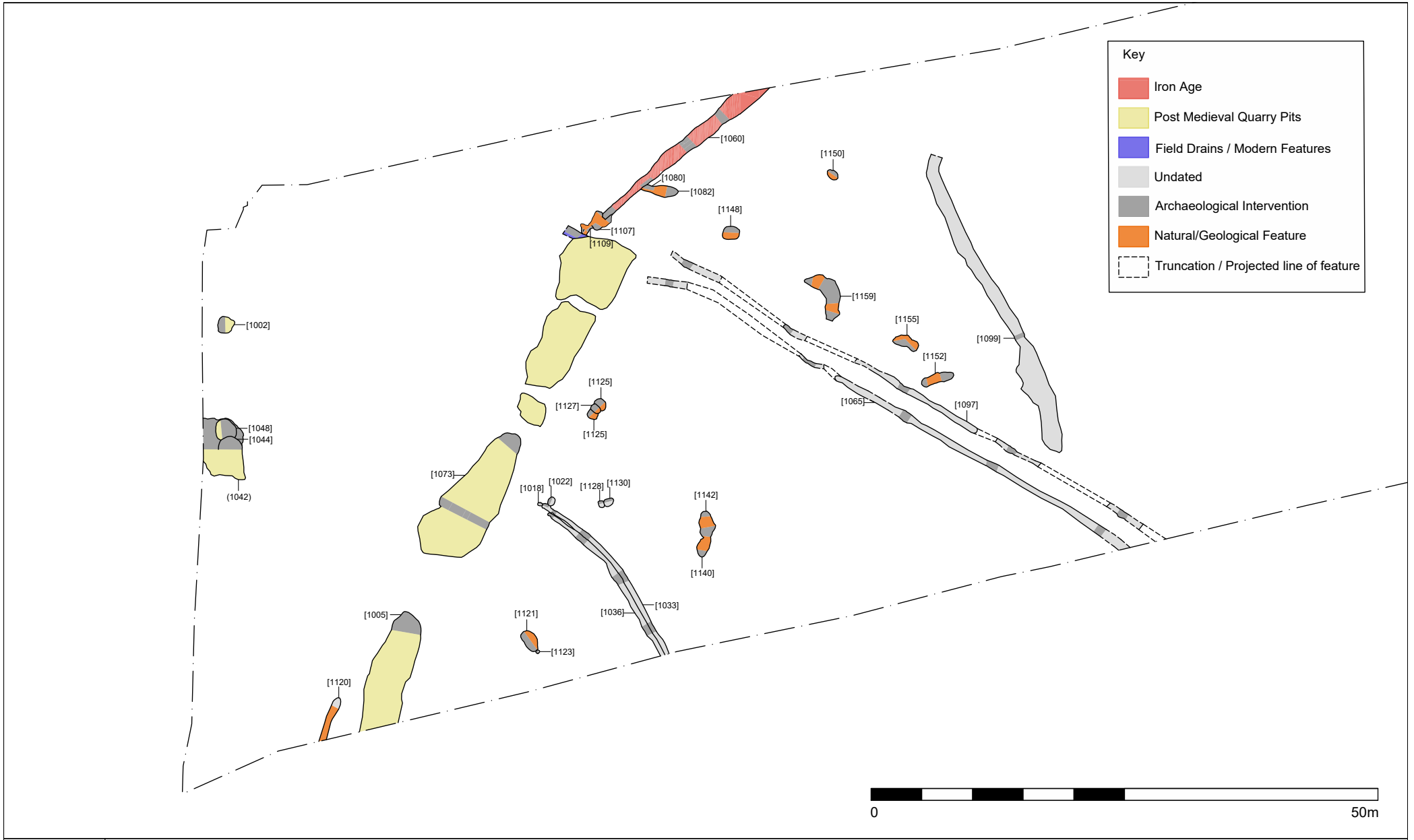
Scale at A4 - varies
Drawn by NO



Trent & Peak ARCHAEOLOGY

Figure 02 - Site Plan
ORA10 - Calverton (Burntstump) Quarry

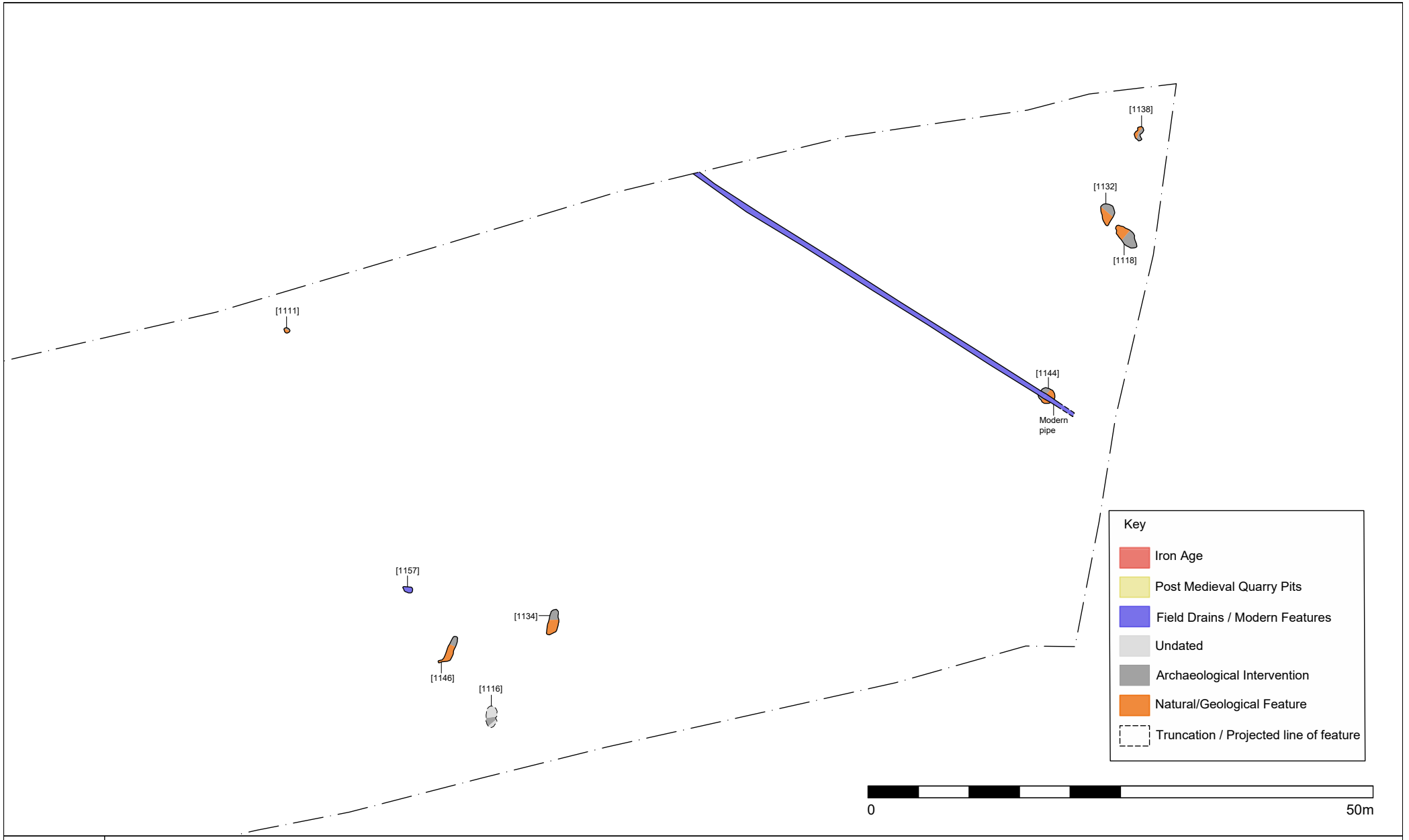
Scale at A4 - 1:1000
Drawn by NO/MI



Trent & Peak ARCHAEOLOGY

Figure 03 - Site Plan (West)
ORA10 - Calverton (Burntstump) Quarry

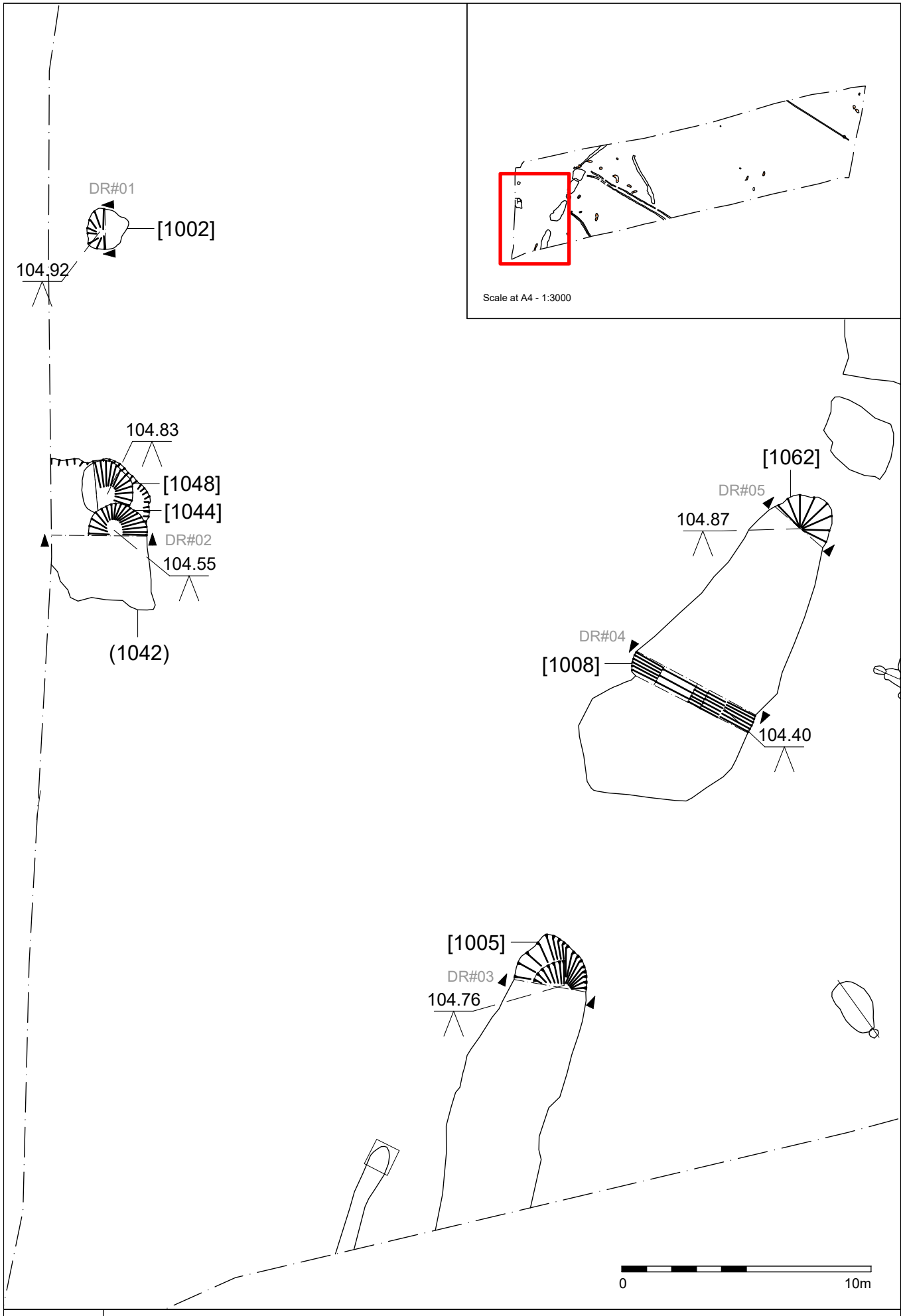
Scale at A4 - 1:500
Drawn by NO/MI



Trent & Peak ARCHAEOLOGY

Figure 04 - Site Plan (East)
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:500
Drawn by NO/MI



Trent & Peak ARCHAEOLOGY

Figure 05 - Post - Medieval and Modern Features (South West)
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:200
Drawn by NO/MI

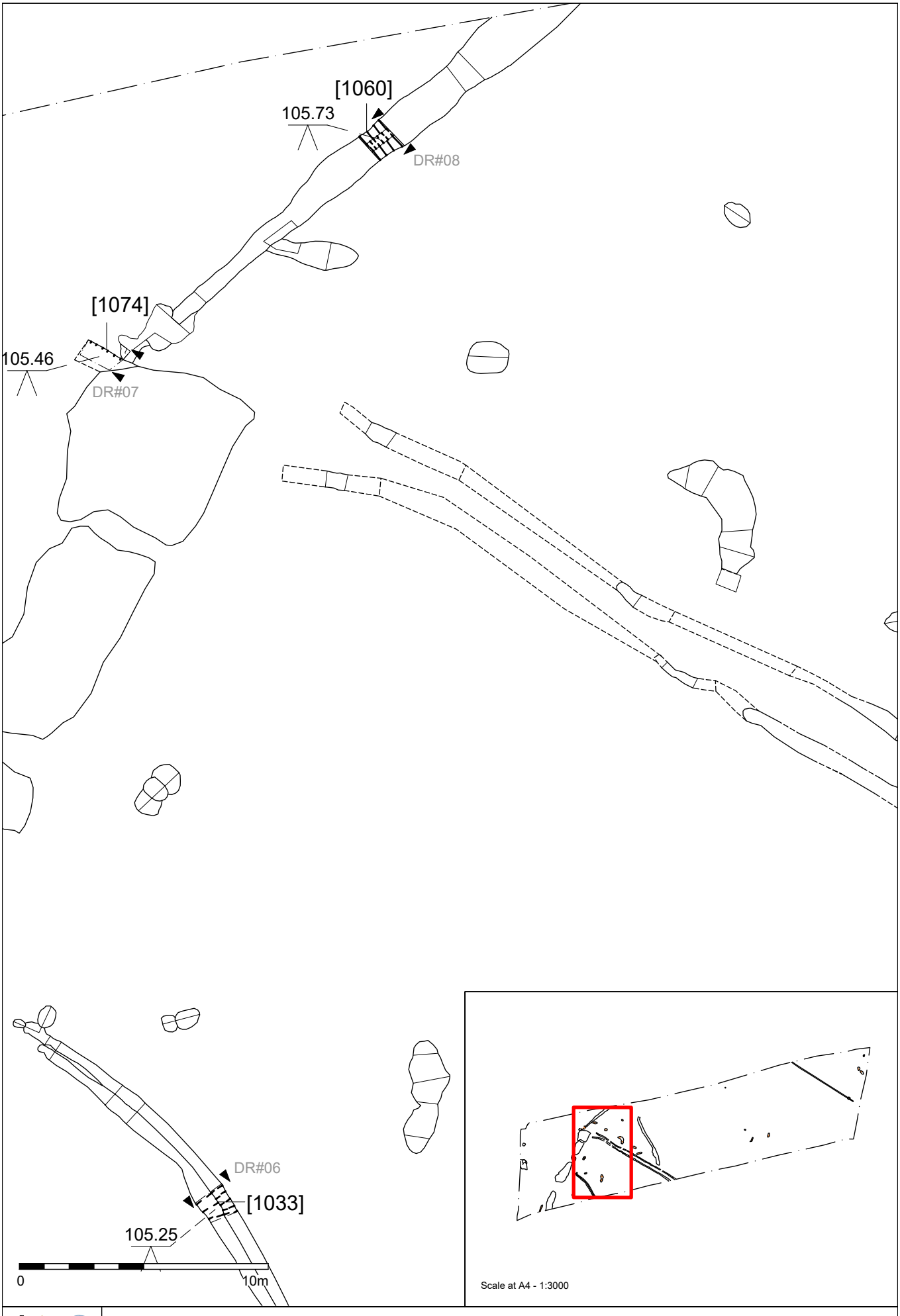
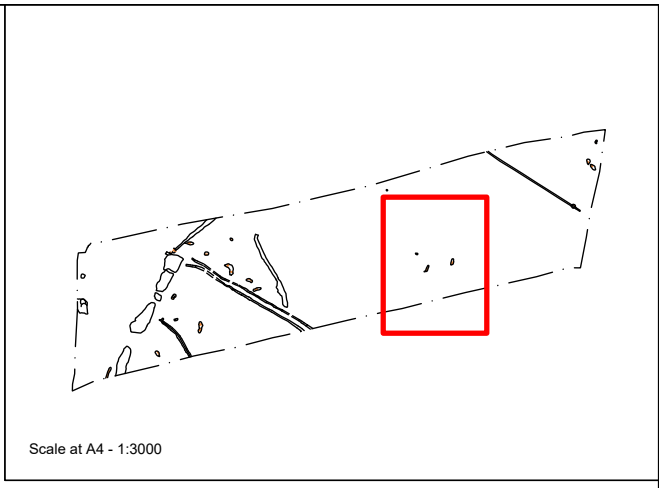


Figure 06 - Plan of Features [1033], [1036], [1060] and [1074]
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:200
Drawn by NO/MI

Trent & Peak ARCHAEOLOGY



Scale at A4 - 1:3000

103.51

[1134]

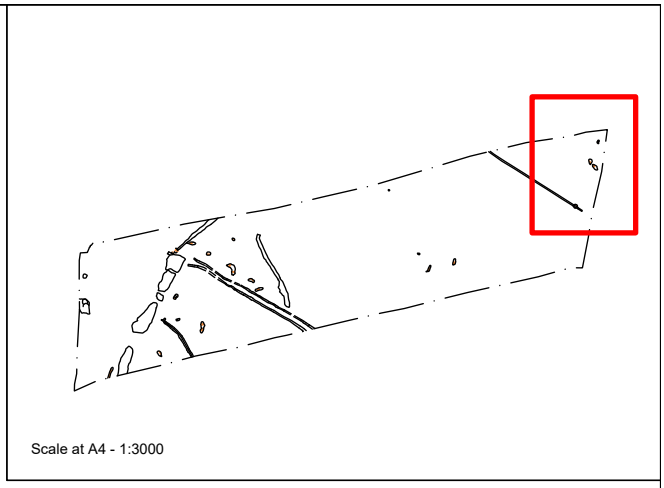
DR#10

0 10m

Trent & Peak ARCHAEOLOGY

Figure 07 - Plan of Feature [1134]
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:200
Drawn by NO/MI



[1132]

DR#11

102.33

0

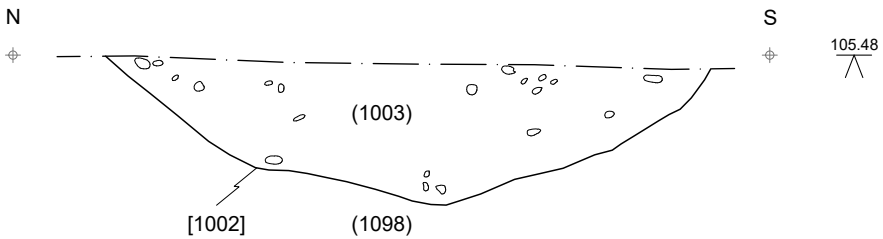
10m

Trent & Peak ARCHAEOLOGY

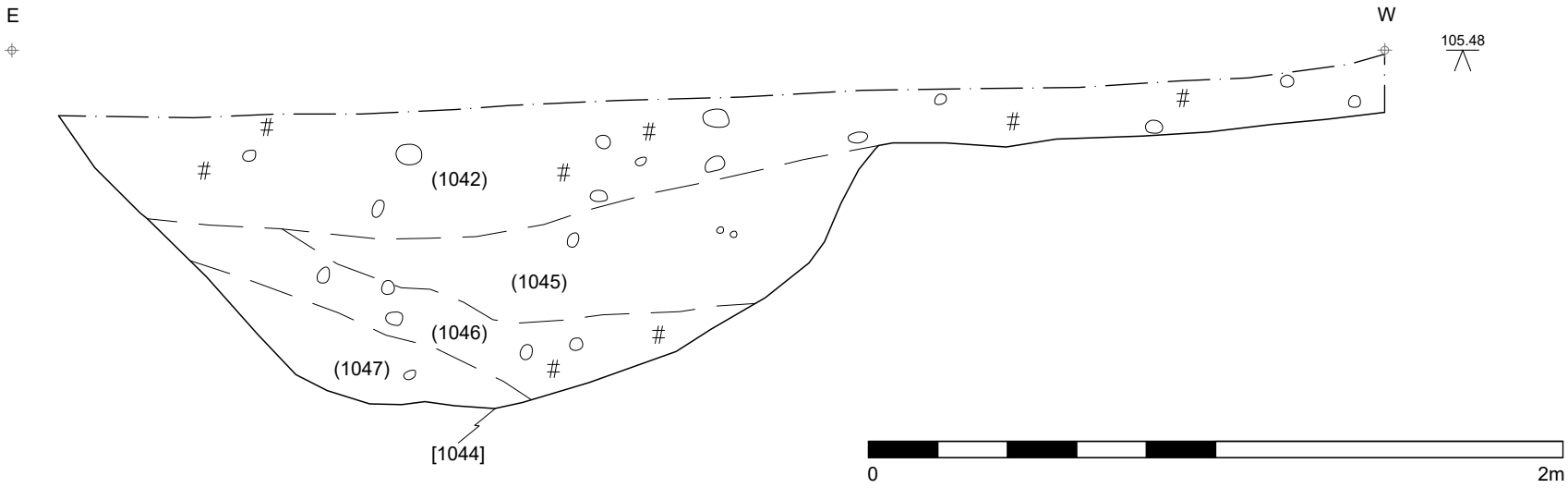
Figure 08 - Plan of Feature [1132]
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:200
Drawn by NO/MI

DR#01
West Facing Section Of Pit [1002]



DR#02
North Facing Section Of Pit [1044]

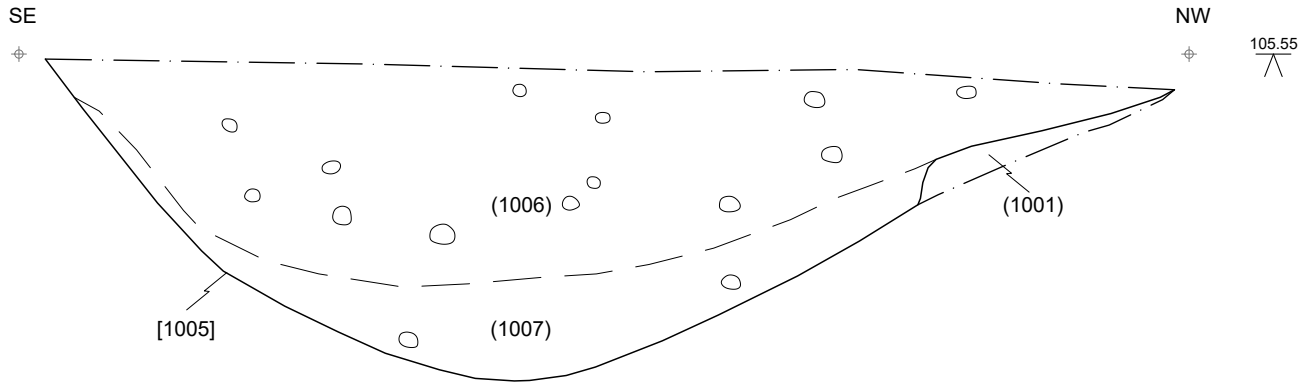


Trent & Peak ARCHAEOLOGY

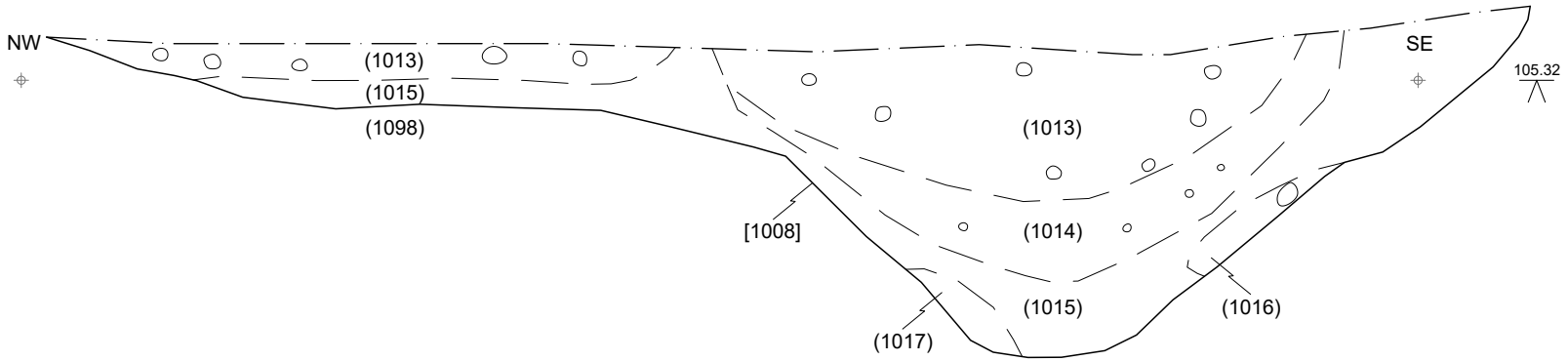
Figure 09 - Sections 01 - 02
ORA10 - Calverton (Burntstump) Quarry

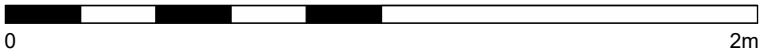
Scale at A4 - 1:20
Drawn by MI

DR#03
North East Facing Section Of Pit [1005]



DR#04
South West Facing Section Of [1008], Part of Pit [1073]



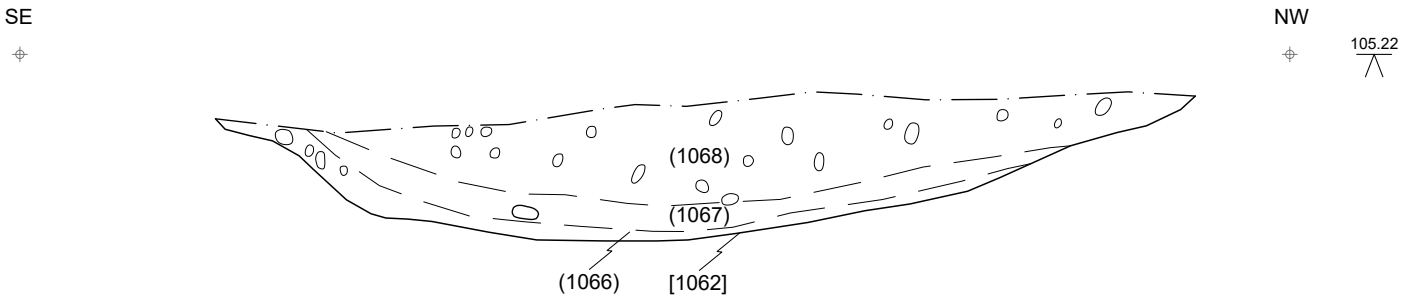


Trent & Peak ARCHAEOLOGY

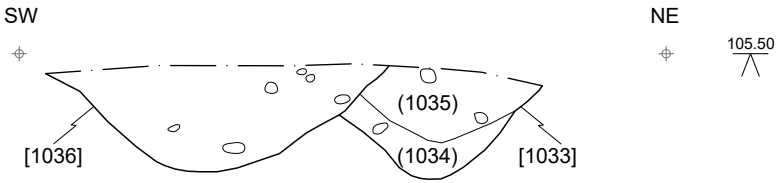
Figure 10 - Sections 03 - 04
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:20
Drawn by MI

DR#05
North East Facing Section Of [1062, Part of Pit [1073]]



DR#06
South East Facing Section Of Ditches [1033] and [1036]



DR#07
North West Facing Section Of [1074] and [1076]

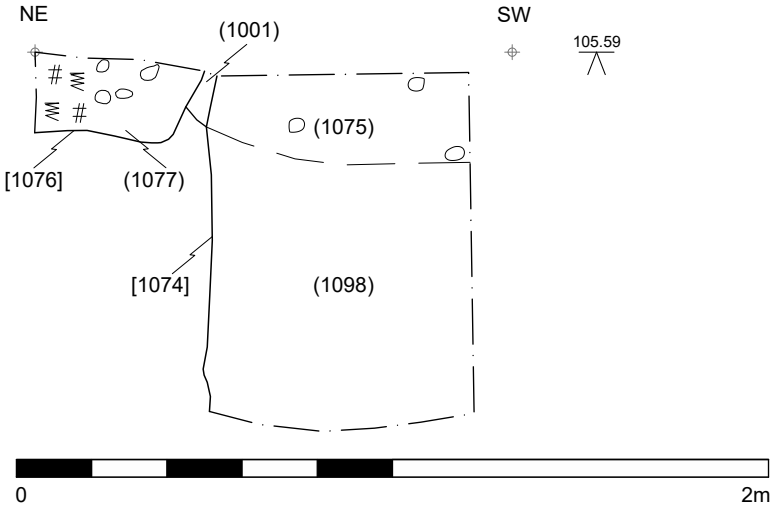
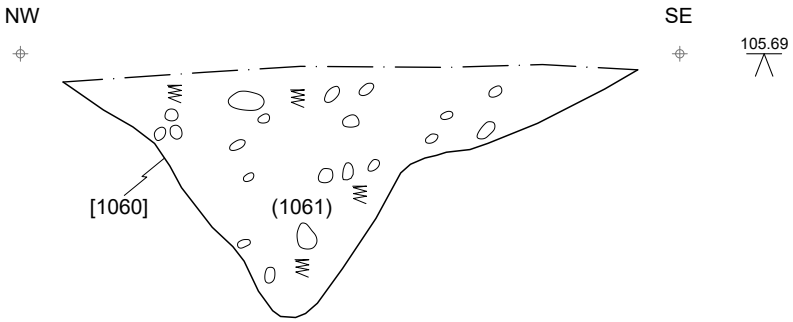


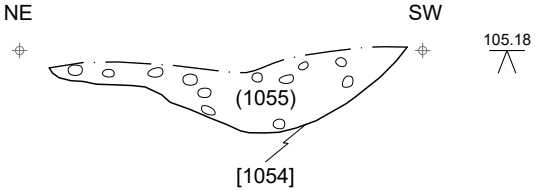
Figure 11 - Sections 05 - 07
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:20
Drawn by MI

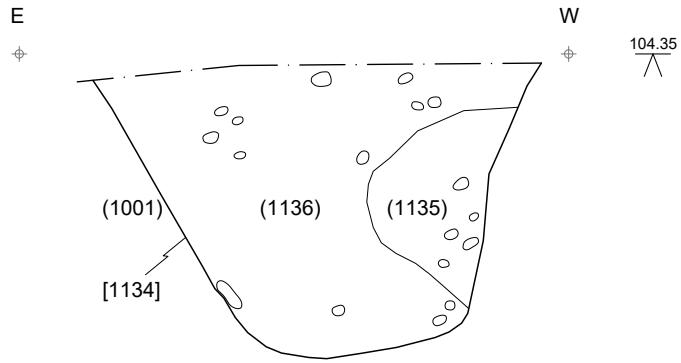
DR#08
South West Facing Section Of [1060]



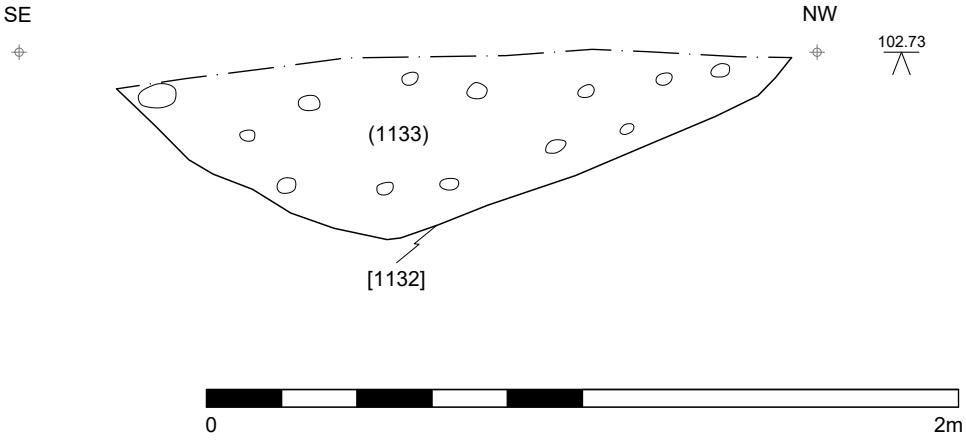
DR#09
North West Facing Section Of [1054], Part of Ditch [1065]



DR#10
North Facing Section Of [1134]



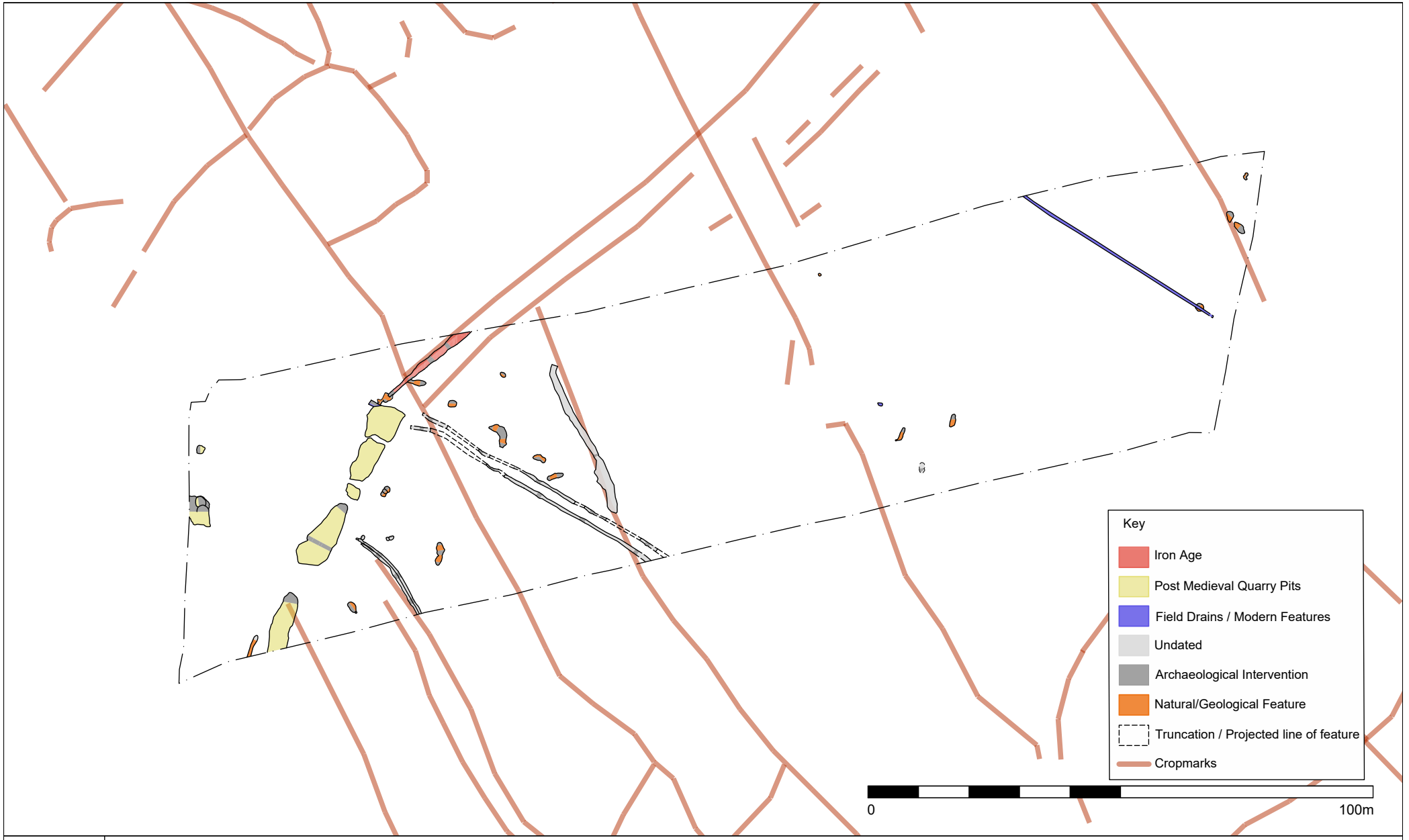
DR#11
North East Facing Section Of [1132]



Trent & Peak ARCHAEOLOGY

Figure 12 - Sections 08 - 11
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:20
Drawn by MI



Trent & Peak ARCHAEOLOGY

Figure 13 - Site Plan with Cropmarks
ORA10 - Calverton (Burntstump) Quarry

Scale at A4 - 1:1000
Drawn by NO

Plates

Plate 1: General site view

Plate 2: Overview of Iron Age ditch [1060]. Looking south-west. Scale 2m x 1m.

Plate 3: Iron Age ditch [1060], looking south-west; scale 1m.

Plate 4: Iron Age ditch [1060], looking north-east. Scale 1m.

Plate 5: Quarry pits [1044] and [1048] overview. Scale 2m x 0.5m.

Plate 6: Quarry pits [1044] and [1048]] overview. Scale 2m x 0.5m and 1m x 0.3m.

Plate 7: Quarry pit [1005]. Looking north, scale 1m.

Plate 8: Quarry pit [1073], Looking south-east, scale 1m.

Plate 9: Quarry pit [1073], looking south-west; scale 2m x 0.3m.

Plate 10: Overview of ditches [1036] and [1033]. Looking north, scale 1m x 1m.

Plate 11: Pit [1022]. Looking east, scale 0.5m.

Plate 12: Ditch [1097]. Looking south; scale 0.5m.

Plate 13: Post-ex slot through burnt pit [1111]. Scale 0.5m.

Plate 14: Burnt spread [1116]. Looking north, scale 0.5m.

Plate 15: Burnt spread [1104], looking east; scale 0.5m.

Plate 16: Post-ex photo through irregular burnt pit/ tree throw [1118]. Looking south-east, scale 1m.

Appendix A: Context Register

Context	Type	Description	Phase	Finds
1000	Layer	Topsoil	Modern	Y - Pottery, glass, brick, animal bone
1001	Layer	Glacial sand and gravel	Undated	N
1002	Cut	Sub circular pit	Modern	/
1003	Fill	Fill of [1002]	Modern	Y - Pottery, animal bone
1004	Deposit	Firm grey sand - natural formation	Undated	N
1005	Cut	Cut of ditch	PM	/
1006	Fill	Secondary fill of [1005]	PM	Y - clay pipe, brick, animal bone
1007	Fill	Primary fill of [1005] Natural silting	PM	N
1008	Cut	Cut of ditch	PM	/
1009	Cut	Cut of linear - recut of [1011]	Undated	/
1010	Fill	Fill of recut [1009]	Undated	N
1011	Cut	Cut of ditch - group 1038	Undated	N
1012	Fill	Stoney fill of [1011]	Undated	N
1013	Fill	Latest fill of [1008]	PM	Y - brick
1014	Fill	Fill of [1008]	PM	N
1015	Fill	Fill of [1008]	PM	N
1016	Fill	Fill of [1008]	PM	N
1017	Fill	Fill of [1008]	PM	N
1018	Cut	Cut of pit	Undated	/
1019	Fill	Fill of [1018]	Undated	N
1020	Cut	Cut of ditch terminus	Undated	N
1021	Fill	Fill of [1020]	Undated	N
1022	Cut	Cut of pit	Undated	/
1023	Fill	Fill of [1022]	Undated	N
1024	Cut	Cut of ditch	Undated	/
1025	Fill	Fill of [1024]	Undated	N
1026	Cut	Cut of ditch terminus	Undated	/
1027	Fill	Fill of [1026]	Undated	N
1028	Cut	Cut of ditch	Undated	/
1029	Fill	Primary fill of [1028]	Undated	N
1030	Fill	Secondary fill of [1028]	Undated	N
1031	Cut	Cut of ditch	Undated	/
1032	Fill	Fill of [1031]	Undated	N
1033	Cut	Cut of ditch	Undated	/
1034	Fill	Primary fill of [1033]	Undated	N
1035	Fill	Secondary fill of [1033]	Undated	N
1036	Cut	Cut of ditch	Undated	/
1037	Fill	Fill of [1036]	Undated	N
1038	Group	[1020](1021), [1024](1025), [1029](1030), [1033](1034)(1035), [1011](1012)	Undated	N
1039	Group	Recut of linear [1038] - [1026](1027), [1031](1032), [1036](1037), [1009](1010)	Undated	N

1040	Fill	Primary fill of [1022]	Undated	N
1041	Group	[1042](1043), [1044](1045)(1046(1047), [1048](1049)(1050(1051)	PM	/
1042	Cut	Cut of pit	PM	/
1043	Fill	Fill of [1042]	PM	Y - Pottery, animal bone, clay pipe
1044	Cut	Cut of pit	PM	/
1045	Fill	Tertiary fill of [1044]	PM	N
1046	Fill	Secondary fill of [1044]	PM	N
1047	Fill	Primary fill of [1044]	PM	Y - pottery
1048	Cut	Cut of pit	PM	/
1049	Fill	Primary fill of [1048]	PM	N
1050	Fill	Secondary fill of [1048]	PM	N
1051	Fill	Tertiary fill of [1048]	PM	N
1052	Cut	Cut of ditch	Undated	/
1053	Fill	Fill of [1052]	Undated	N
1054	Cut	Cut of ditch	Undated	/
1055	Fill	Fill of [1054]	Undated	N
1056	Cut	Cut of ditch	Undated	/
1057	Fill	Secondary fill of [1056]	Undated	N
1058	Cut	Cut of ditch	Undated	/
1059	Fill	Fill of [1058]	Undated	N
1060	Cut	Cut of ditch	IA	/
1061	Fill	Fill of [1060]	IA	Y - Pottery
1062	Cut	Cut of terminus	PM	/
1063	Cut	Cut of ditch	Undated	/
1064	Fill	Fill of [1063]	Undated	N
1065	Group	[1052](1053), [1054](1055), [1056] (1057)(1084), [1058](1059), [1063](1064)	Undated	N
1066	Fill	Pimary fill of terminus [1062]	PM	N
1067	Deposit	Forms secondary fill of [1062]	PM	Y - metal
1068	Fill	Final fill of [1062]	PM	Y - brick, animal bone
1069	Cut	Cut of ditch	Pre	/
1070	Fill	Fill of [1069]	Pre	N
1071	Cut	Cut of pit	Undated	/
1072	Fill	Fill of [1071]	Undated	N
1073	Group	[1008](1013)(1014(1015)(1016)(1017), [1062](1066)(1067)	PM	
1074	Cut	Cut of possible test pit	Modern	/
1075	Fill	Fill of [1074]	Modern	Y - pottery
1076	Cut	Cut of pit	Undated	/
1077	Fill	Fill of [1076]	Undated	N
1078	Cut	Cut of ditch	Pre?	/
1079	Fill	Fill of [1078]	Undated	N
1080	Cut	Cut of ditch/glacial scar	Undated	/
1081	Fill	Fill of [1080]	Undated	N
1082	Cut	Cut of ditch/glacial scar	Undated	/
1083	Fill	Secondary fill of [1082]	Undated	N

1084	Fill	Primary fill of [1056]	Undated	N
1085	Cut	Cut of ditch	Pre	/
1086	Fill	Secondary fill of [1085]	Pre	N
1087	Cut	Cut of ditch/gully	Undated	/
1088	Fill	Fill of [1087]	Undated	N
1089	Cut	Cut of ditch/gully	Undated	/
1090	Fill	Fill of [1089]	Undated	N
1091	Cut	Cut of ditch/gully	Undated	/
1092	Fill	Secondary fill of [1091]	Undated	N
1093	Cut	Cut of ditch/gully	Undated	/
1094	Fill	Fill of [1093]	Undated	N
1095	Cut	Cut of ditch/gully	Undated	/
1096	Fill	Fill of [1095]	Undated	N
1097	Group	[1087](1088), [1089](1090), [1091](1092)(1103), [1093](1094), [1095](1096)	Undated	
1098	Deposit	Natural gravels		N
1099	Fill	Fill of glacial/geological channel	Undated	N
1100	Fill	Primary fill of [1082]	Undated	N
1101	Missing	Missing	Missing	Missing
1102	Fill	Primary fill of [1085]	Pre	N
1103	Fill	Primary fill of [1091]	Undated	N
1104	Cut	Cut of pit/ burnt tree stump	Undated	N
1105	Layer	Burnt extent of cut [1104]	Undated	N
1106	Fill	Fill of [1104]	Undated	N
1107	Cut	Cut of pit	Undated	/
1108	Fill	Fill of [1107]	Undated	N
1109	Cut	Cut of pit	Undated	/
1110	Fill	Fill of [1109]	Undated	N
1111	Cut	Cut of pit/ burnt tree stump	Undated	/
1112	Fill	Fill of [1111]	Undated	N
1113	Group	[1060](1061), [1069](1070), [1085] (1102)(1086)	Pre	
1114	VOID	VOID	VOID	VOID
1115	VOID	VOID	VOID	VOID
1116	Layer	Spread of burnt material	Undated	N
1117	Fill	Primary fill of [1069]	Undated	N
1118	Cut	Cut of pit	Undated	/
1119	Fill	Fill of [1118]	Undated	N
1120	Deposit	Geological deposit	Undated	N
1121	Cut	Cut of pit	Undated	/
1122	Fill	Fill of [1121]	Undated	N
1123	Cut	Cut of post-hole	Undated	/
1124	Fill	Fill of [1123]	Undated	N
1125	Cut	Cut of tree bole	Undated	/
1126	Fill	Fill of [1125]	Undated	N
1127	Fill	Burnt deposit on top of (1126) in [1125]	Undated	N

1128	Cut	Cut of pit	Undated	/
1129	Fill	Fill of [1128]	Undated	N
1130	Cut	Cut of pit	Undated	/
1131	Fill	Fill of [1130]	Undated	N
1132	Cut	Cut of pit	Undated	/
1133	Fill	Fill of [1132]	Undated	N
1134	Cut	Cut of possible pit/glacial scar	Undated	/
1135	Fill	Slump/collapsed side of [1134]	Undated	N
1136	Fill	Fill of [1134]	Undated	N
1137	Fill	Gravel collapse within [1134]	Undated	N
1138	Cut	Cut of pit	Undated	/
1139	Fill	Fill of [1138]	Undated	N
1140	Cut	Cut of possible pit	Undated	/
1141	Fill	Fill of [1140]	Undated	N
1142	VOID	VOID	VOID	VOID
1143	VOID	VOID	VOID	VOID
1144	Cut	Cut of pit	Undated	/
1145	Fill	Fill of [1144]	Undated	N
1146	Cut	Cut of glacial scar	Undated	/
1147	Fill	Fill of [1146]	Undated	N
1148	Cut	Cut of pit	Undated	/
1149	Fill	Secondary fill of [1148]	Undated	N
1150	Cut	Cut of pit	Undated	/
1151	Fill	Fill of [1150]	Undated	N
1152	Cut	Cut of pit	Undated	/
1153	Fill	Fill of [1152]	Undated	N
1154	Fill	Primary fill of [1148]	Undated	N
1155	Cut	Cut of pit / tree throw	Undated	/
1156	Fill	Fill of [1155]	Undated	N
1157	Cut	Cut of pit with articulated animal burial	Modern	/
1158	Fill	Fill of [1157]	Modern	Animal bone
1159	Group	[1161](1162) - others missing	Undated	
1160	Missing	Missing	Missing	Missing
1161	Deposit	Deposit type seen across site, environ sampled for characterisation	Undated	N
1162	Deposit	Deposit type seen across site, environ sampled for characterisation	Undated	N

Appendix B: The Environmental Remains

Table 1: Flot quantification (* = 1-10, ** = 11-50, *** = 51-250, **** = >250) and preservation (+ = poor, ++ = moderate, +++ = good)

Sample Number	Context	Context type	Parent	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Seeds Uncharred	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Crop Seeds Charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Botanical Charred	Identifications	Preservation
1	1061	ditch	1060	18	40	40	40	30	* *Chenopodium* sp.	*	**	***	*	*Triticum* sp. (1)	++				*	*Prunus* sp. (1)	++
2	1106	pit/spread	1104	654	2100	100	20	10		****	****	****									
3	1112	pit	1111	89	300	100	20	10		***	****	****									
4	1119	pit	1118	8.5	15	15	60	10	* *Chenopodium* sp.			****							*	Poaceae culm node (1)	++

Sample Number	Context	Context type	Parent	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Seeds Uncharred	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Crop Seeds Charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Botanical Charred	Identifications	Preservation
5	1139	pit	1138	67	150	150	20	30		**	****	****									
6	1035	ditch	1030	8	20	20	60	30				**									
7	1037	ditch	1030	9	30	30	70	20				**				*	*Fallopia convolvulus*, *Veronica hederifolia* (1)	++			
8	1145	pit	1144	450	2000	100	10	10		****	****	****									
9	1065	ditch	-	55	200	100	60	30	** *Chenopodium* sp.			**									

Sample Number	Context	Context type	Parent	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Seeds Uncharred	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Crop Seeds Charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Botanical Charred	Identifications	Preservation
10	1097	ditch	-	43	150	100	60	30	*** *Chenopodium* sp., *Sambucus nigra*, *Polygonum* sp., *Prunus* sp.			*									
11	1161	pit	1001	3.5	20	20	80	10				*									
12	1162	pit	1001	1.4	10	10	80	10				*									
13	1023	ditch	1018	7	20	20	80	10				**									
14	1124	posthole	1123	15	70	70	20	10	* *Fumaria* sp.	***	****	****	*	*Triticum* sp. (1)	++	*	*Veronica hederifolia* (2), *Chenopodium* sp. (1)	++			

Sample Number	Context	Context type	Parent	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Seeds Uncharred	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Crop Seeds Charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Botanical Charred	Identifications	Preservation
15	1122	pit	1121	12	15	15	50	30	** *Fumaria* sp., *Chenopodium* sp.			***				*	*Veronica hederifolia* (2)				

Table 2: Charcoal Identifications

	Sample Number	2	3	5	8
	Context	1106	1112	1139	1145
	Parent Context	1104	1111	1138	1144
	Context / deposit type	pit/spread	pit	pit	pit
Taxonomic Identifications	English Name				
Quercus sp.	oak	6 (round wood)	5	8	10 (vitrified)
Corylus avellana	hazel	4 (round wood)			
Ilex aquifolium	holly		2		
Leguminosae	gorse/broom		3 (round wood)		
Indeterminate/ knot wood				2	

Appendix C: Index of Archive and Arrangements for Deposition

Field Records	***Description***	***Number***
Context register	Register of context numbers and descriptions	5
Context sheets	Record of features and deposits	162
Photo record sheet	Record of photographs taken	3
Digital photographs	All views	559
Site drawings	Plan and section of site	77
Documents	*Description*	*Number*
Written scheme of investigation	Statement of the aims, objectives and methodology for the project.	1
Health & Safety	Safe working statement & risk assessment	1
Report to client	Report of findings of the watching brief.	1
Artefacts and Ecofacts	Description	Number
Finds	Pottery, animal bone, CBM, clay pipe, metal nail	53
Environmental Samples	Bulk samples; residues of	15

The site archive is currently held at the offices of Trent & Peak Archaeology, Unit 1, Holly Lane, Chilwell, Nottingham, NG9 4AB.

Appendix D: OASIS: Data Collection Form

OASIS DATA COLLECTION FORM: England

Printable version

OASIS ID: trentpea1-332538

Project details

Project name	Calverton (Burnt Stump) Quarry, Arnold, Nottinghamshire Phase 3
Short description of the project	Trent and Peak Archaeology (TPA) was commissioned by Tarmac to undertake a programme of archaeological strip, map and record excavation ahead of sand and gravel extraction at the site of Calverton (Burntstump) Quarry, Arnold, Nottinghamshire (NGR SK 58579 49435). Excavation revealed a moderate density of archaeological activity within the stripped 1.3ha area all broadly corresponding to two apparent phases of land use (Figure 2, 3). All features appeared to be heavily truncated by recent agricultural activity. The strip, plan and sample excavation, undertaken ahead of planned sand and gravel extraction, has successfully identified at least 2 main phases of archaeological activity within a 1.1ha area. A concentration of activity was identified towards the west of the site boundary, with sporadic features identified to the east. The first phase of activity is marked by a shallow boundary ditch or field system dating to the Iron Age, located within the western corner of the site. This was identified alongside several features possibly relating to a period of sand and gravel quarrying dating to the post-medieval or later period. A possible third phase of activity was identified in a series of undated features which appear to relate to a period of widespread woodland clearance through burning. Historic mapping does not appear to show the site as being heavily wooded throughout the later post-medieval and modern periods, though it is possible that localised clearance of trees occurred so as to facilitate agricultural development.
Project dates	Start: 01-07-2018 End: 01-08-2018
Previous/future work	Yes / Not known
Any associated project reference codes	ORA10 - Sitecode
Any associated project reference codes	7/2000/1522 - Planning Application No.
Type of project	Recording project
Site status	None
Monument type	ENCLOSURE Iron Age
Significant Finds	POTTERY Iron Age
Investigation type	"Open-area excavation"
Prompt	Planning condition

Project location

Country	England
Site location	NOTTINGHAMSHIRE GEDLING CALVERTON Calverton (Burntstump) Quarry
Postcode	NG14 6NU

Study area	1.1 Hectares
Site coordinates	SK 458579 349435 52.909642472675 -1.318032071373 52 54 34 N 001 19 04 W Point
Height OD / Depth	Min: 90m Max: 110m

Project creators

Name of Organisation	Trent and Peak Archaeology
Project brief originator	Trent and Peak Archaeology
Project design originator	Tina Roushannafas
Project director/manager	Edmund Taylor
Project supervisor	Pov Cepauskas
Type of sponsor/funding body	Developer

Project archives

Physical Archive recipient	Trent and Peak Archaeology
Physical Contents	"Animal Bones","Ceramics","Metal"
Digital Archive recipient	Trent and Peak Archaeology
Digital Contents	"Animal Bones","Ceramics","Metal"
Digital Media available	"Images raster / digital photography","Survey","Text"
Paper Archive recipient	Trent and Peak Archaeology
Paper Contents	"Animal Bones","Ceramics","Metal"
Paper Media available	"Section","Survey ","Unpublished Text","Context sheet","Photograph","Plan","Report"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Calverton (Burnt Stump) Quarry, Arnold, Nottinghamshire Phase 3: Strip, Map and Record
Author(s)/Editor(s)	Owen, V
Other bibliographic details	162/2018
Date	2018
Issuer or publisher	Trent and Peak Archaeology
Place of issue or publication	Trent and Peak Archaeology
Description	Grey literature, PDF

Entered by	Ed Taylor (etaylor@yorkat.co.uk)
Entered on	2 November 2018

OASIS:

Please e-mail Historic England for OASIS help and advice
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