

Event: DR 1676

Source: DR 18999

**ARCHAEOLOGICAL INVESTIGATION OF AN IRON AGE
LINEAR BOUNDARY AT FERNELLO SITCH,
BARROW-UPON-TRENT, DERBYSHIRE**

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BOUNDARY AT FERNELLO SITCH, BARROW-UPON-TRENT, DERBYSHIRE,
SK34282813**

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13th July 1998

Project Code: FSB/03

Filename: 1165\BGF\FSB03.RPT

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SUMMARY

- An archaeological watching brief was conducted during the Phase 1 gravel extraction at Swarkestone Quarry, west of Barrow-upon-Trent, Derbyshire. This was carried out on behalf of Lafarge Redland Aggregates Ltd., during October and November 1996.
- The watching brief examined the oblique quarry edge section on the west side of the large field known as Fernello Sitch (SK34302810 to SK34262818). The archaeological features revealed in this section were photographed and drawn. A group of inter-cutting features was noted and interpreted as a continuation of a land division recorded during earlier excavations of the Fernello Sitch ring-ditch. A small area of the adjacent baulk was stripped mechanically to the top of the underlying sand and gravel, with the aim of obtaining dating evidence and clarifying the nature and stratigraphic sequence of these features.
- The excavation revealed a prehistoric boundary complex closely comparable to the one seen just south of the ring-ditch. Two phases of ditch replaced pits which could have formed part of at least one pit alignment. Iron Age pottery sherds were recovered from the base of the later ditch.
- A palaeochannel complex was noted at the northern end of the quarry section. This was surveyed in by Trent & Peak Archaeological Trust and recorded by Craig Winters, Loughborough University.

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1. INTRODUCTION

In October and November 1996, Trent & Peak Archaeological Trust conducted a watching brief at Swarkestone Quarry near Barrow-upon-Trent, Derbyshire for Lafarge Redland Aggregates Ltd. This followed on from the excavations of autumn 1995 (Knight & Morris, 1996) in Fernello Sitch, a field within the Phase 1 gravel extraction area, which identified a complex of features (ditches, pits and possibly post-holes) that successively formed a linear boundary. This boundary complex ran ENE-WSW across the SE corner of the trench that was excavated to examine the Late Neolithic/Early Bronze age ring-ditch (Figure 2).

The main aim of the watching brief was to locate the boundary complex at the west edge of the quarry should it extend that far. It appeared to be present as a linear cropmark, running across Fernello Sitch and on to the west (air photographs: NMR No. SK3428-14 & 3427-2). Finding the boundary complex would provide the opportunity for recording it in the quarry-edge section and the chance to undertake limited excavation to confirm the relationships of any features represented and to provide dating evidence. Secondary objectives included the elucidation of the sedimentary sequence and identification of other archaeological features.

2. METHODOLOGY

Work was carried out during October and November 1996, once the topsoil and subsoil had been stripped. Approximately 100m of the western quarry face between SK34302810 and SK34262818 was cleaned using hoe and trowel. This section sloped at an angle of 50 to 60 degrees to the horizontal. The cleaned section was photographed and surveyed in using an EDM. A detailed 1:20 drawing was made of the 6.0m length that contained the linear boundary feature complex (Figure 3).

A 4.0 x 2.5m area was stripped of topsoil and subsoil to a depth of 1.0m by an excavator with a 1.8m toothed gravel bucket. This revealed a complex of archaeological features in plan, linked directly to those seen the oblique quarry edge section, with the sand and gravel surface exposed on either side (Figure 4). The resulting surface was cleaned with hoe and trowel, photographed and planned at 1:20. The fill was removed in 0.2m spits by spade, shovel and trowel from a 1.25m length of feature fill at the sloping quarry edge section. The resulting east-facing section was recorded at 1:20 and the cutting included in the overall 1:20 site plan.

A series of palaeochannels was clearly visible at the northern end of the section. The outlines of these were surveyed in using an EDM. More detailed recording was carried out by Craig Winters of Loughborough University.

3. RESULTS

3.1 General Stratigraphy

Below the modern ploughsoil (0001; 0.35m thick) was a 0.3 to 0.5m thickness of silty clay loam (0148; Figure 3). This was interpreted initially as an alluvial silt because of the extremely low sand content. The stoniness, though low, increased towards the base of the deposit. At its base it formed a merging boundary with a very stony sandy clay loam (0151) and various feature fills. This boundary had a slightly irregular wavelike form, with a wavelength of about 2.5 to 3.0m and an amplitude of 0.08 to 0.10m. This is far too narrow for typical ridge and furrow, although very narrow examples do exist. The underlying layer (0151) had a clear but irregular, undulating boundary with the natural sand and gravel beneath. The high clay/silt content of both these layers implies derivation from still water flood material, but the stoniness indicates in both cases a mixing with the stonier material beneath each unit. Features related to the boundary complex, where sealed by either of these layers, showed no survival of weathering cones, implying that they had been truncated. This evidence, together with the undulating bases of the units, suggests that they are both the remnants of floodplain ploughsoils. The much greater stoniness of 0151 is the result of direct contact with the sand and gravel at its base.

The sharp cut across the small pit or post-hole 0153 by 0151 shows the truncation clearly. The rather strange relationship between 0149 (another small pit or post-hole) and 0151 is the result of the oblique angle of the battered quarry-edge section. Stratigraphically, 0149 was cut through 0151. The 50 to 60 degree angle of the quarry-edge means that the lower part of 0149 was sectioned across its widest part. The upper part, which lies 0.2m further west, was cut much nearer the edge of the feature, making it appear successively narrower.

We may postulate the presence of three ploughsoils, including the modern topsoil (0001), each produced from a successively higher level and each less stony than the last. This increase in level and decrease in stoniness can be explained by the continuing accretion of silty material across the floodplain between the phases of ploughing. This may be result of periods of frequent, regular flooding which prevented arable cultivation. Ploughing is an erosive process that encourages soil loss by deflation and water action. Also, all three phases of ploughing have truncated the layers beneath to some degree. It is therefore impossible to know from what level ploughing started initially. Only the base level for the final ploughing is preserved.

3.2 The Boundary Feature Complex

3.2.1 Features revealed in the oblique section (Figure 3)

The oblique section revealed four features, described briefly below.

0150

This was a wide feature that was cut through the stony ploughsoil, 0151. Taking account of the oblique quarry-edge section, this was some 3.5m across and at least 0.7m deep. Its original depth is not known, as it was truncated by the less stony ploughsoil, 0148. Its sides sloped at *c.*40 degrees, curving gently to a fairly flat base. This feature cut three others (0152, 0149 and 0153) and represents the final phase of the boundary complex. It had three discernible layers of fill, each successively less stony, with the stoniest at the base (Figure 3: a to c).

0152

This lay directly beneath 0150. The cutting of 0150 had removed the upper part of this feature, leaving only a 0.7m thickness of fill. Enough of 0152 survived to show that it too cut 0149. Its sides, at 50 to 60 degrees, were considerably steeper than those of 0150. Its main fill was a loamy sand, but at its base was a silty clay loam with very small fragments of charcoal (0152b). A sample of this has been kept for future study. Both these fills were notably less stony than those of the overlying feature, 0150. A stonier fill was observed on the south side (0152c). This was either an initial fall of gravelly material, perhaps from an upcast spoil heap, or part of an earlier feature.

0149

0149 was cut by both 0150 and 0152. It was itself cut through the stony ploughsoil (0151) which appeared to overhang the north edge. In fact, it is a small pit or post-hole that ends just west of the oblique section. The feature had near-vertical sides, was at least 0.5m deep and roughly 0.8m in diameter. Its upper fill, a sandy clay loam, rested on a basal gravel that had a sandy loam matrix (0149b). The gravel may have been basal packing for a post.

0153

This appeared similar to 0149 in form, but was slightly smaller (0.4m deep by 0.7m wide). Also, it seems to have been truncated by the lower ploughsoil (0151) rather than cut through it. It had a loamy sand as its basal fill, with a loamier and slightly stonier material protruding down into the feature on its southern side (0153a). It would be hard to interpret this slightly stonier deposit as evidence of a post void. It may indicate a partial re-excavation of the feature. 0150 cut the north side of this feature.

3.3.2 Features revealed after the machine stripping of topsoil and subsoil (Figure 4)

The stripping of topsoil and subsoil by machine exposed the gravel surface and removed the upper part (0.4m) of the wide, shallow feature (0150). Most of the two small pits or post holes (0149 and 0153) which were seen in the oblique section were also lost. 0150 proved to be a wide linear ditch running ENE-WSW (Figure 4). Two plain handmade Iron Age pottery sherds (FSB/BTA and BTC) were found at the cleaned surface and two others in material stripped by the machine (FSB/BTB and BTD). With pottery finds this close to the base of the feature, some secure dating evidence was at last available for the boundary feature complex.

Machine stripping also revealed three new features on the southern edge of the boundary feature complex, namely 0154, 0155 and 0156. In addition, subsequent excavation by hand provided further information on 0152.

0154

This was revealed as a bulge of stonier fill, extending up to 0.4m beyond the edge of 0150. A section was dug manually across 0150 and 0154, as indicated in Figure 4. This showed 0154 to be the remains of a pit, at least 0.6m deep and 1.0m in diameter, with sides sloping at 70 degrees and curving sharply to a flat base. This is extremely similar in size, depth and fill to the large pits identified as an alignment in the SE corner of the trench located above the Late Neolithic/Early Bronze Age ring-ditch (Knight & Morris, 1996; Figure 2).

0155 and 0156

These were the highly truncated remains of two small pits or post holes along the southern side of the complex. Both were cut by the latest ditch, 0150.

0152

The vertical section across the intersection between 0150 and 0154 also revealed a continuation of 0152. Its two main fills were identical to those seen in the quarry-edge section. Its form was revealed more clearly, having a gently curving base 1.0m across and sides sloping at 50 to 60 degrees. It was confirmed as a deeper ditch, preceding 0150. Its south side cut through the large pit 0154. There was no sign in this section of the gravelly deposit which was visible in the oblique section (0152c). This gravelly material could therefore be the fill of the western edge of another large pit, immediately to the east of 0154, that was also cut on its north side by ditches 0152 and 0150. This may indicate the presence of a pit alignment.

4. CONCLUSIONS

The oblique quarry edge section at the west end of Fernello Sitch revealed evidence of at least six phases of human activity prior to the development of the upper ploughsoil (0001):

Phase 1: Pit/Post-hole 0153

A small pit or post-hole (0153) was excavated. Its basal fill was partly re-excavated and subsequently filled up. This may represent the digging out of a post or other object or simply the re-digging of a hole in the same place.

Phase 2: Ploughsoil 0151

The surface was ploughed, sealing the pit or post-hole beneath. The base of a stony ploughsoil survives (0151). The stoniness results from the incorporation of material from the underlying gravel surface.

Phase 3: Pit/Post-hole 0149

Another small pit or post-hole (0149), its base filled with gravel, was cut through this lower ploughsoil. No sign of a post-pipe remained in the upper fill of this feature.

Phase 4: Ditch 0152

A ditch (0152) was dug on an ENE-WSW alignment to the same depth as 0154, cutting away the south side of 0149. Its initial clayey fill preserved charcoal fragments and it subsequently filled up naturally with a stony, loamy sand.

Phase 5: Ditch 0150

A second ditch (0150) was cut less deeply along the line of Ditch 0150, suggesting either that the floodplain level had built up or that the ditch was shallower than its predecessor. It is possible that the two upper fills of this feature represent recuts of the ditch. Sherds of Iron Age pottery from the fill at the base of this ditch provide a useful *terminus ante quem* ("date before which") for the preceding stratigraphy.

Phase 6: Ploughsoil 0148

A less stony ploughsoil (0148) developed above these features causing some truncation of their upper fills. This lay beneath the modern plough soil.

Subsequent machine stripping of topsoil and subsoil added to the complexity of the stratigraphic sequence, revealing at least three other features. A large pit (0154) was excavated and then filled up with gravelly material. It predates the earliest ditch (0152) placing it earlier than Phase 4. 0152c, noted in the oblique section, may represent another such pit. The other small pits or post holes (0155 and 0156) were cut by the later ditch (0150) and therefore predate Phase 5.

There were some startling similarities between the features identified in the watching brief at the western quarry-edge section and those seen in the south-east corner of the excavation area for Late Neolithic/Early Bronze Age ring-ditch (Figure 2):

1. Both areas had a complex of archaeological features arranged along the same ENE-WSW axis.
2. The linear boundary feature complex immediately south of the ring-ditch had a line of large pits, replaced by two phases of ditch. The watching brief group had at least one similarly sized pit (0154) replaced by two phases of ditch (0152 and 0150).
3. In the complex south of the ring-ditch, a line of smaller pits with gravelly basal fill ran along the north side of the ditches. 0149 has very similar characteristics and positioning.
4. Both linear boundary complexes had associated small pits/post holes.

Pit alignments, which mark the earlier phases of this boundary complex, are typically of Iron Age date in this region. With the identification of pottery from that period in the later ditch, a clearer picture of the age of this boundary is emerging. Further elucidation of its date and function, however, must await more extensive excavation of similar boundary features elsewhere within the quarry extension (notably SMR No. 16710b: Knight & Morris, 1996, figure 1.) in this area of the Trent valley.

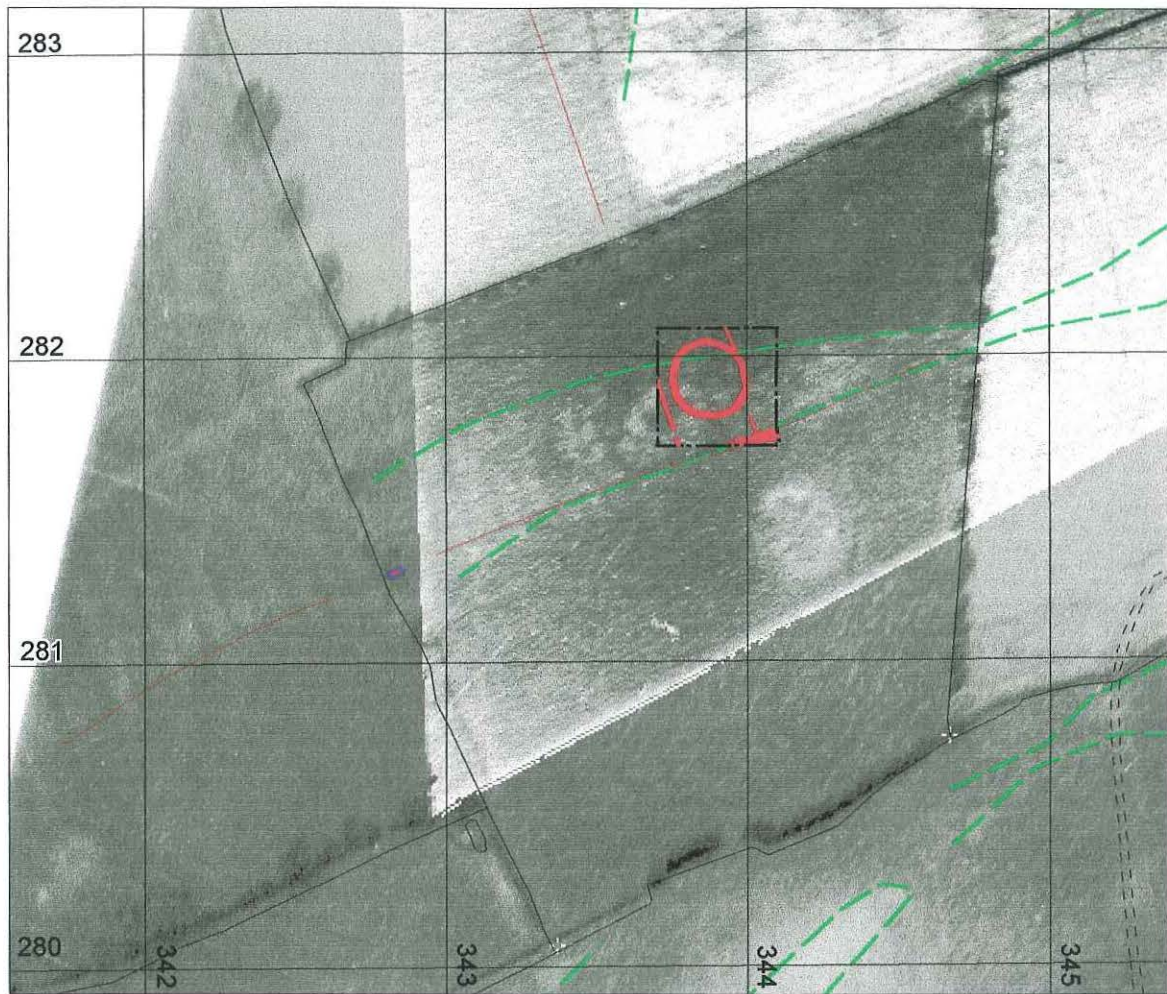
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ACKNOWLEDGEMENTS

This work was funded by Lafarge Redland Aggregates Limited. Particular thanks are extended to Mark Leivers for arranging the funding and to Joe Whittaker and other staff at the quarry for assistance at the excavation stage. David Knight planned and managed the project, which was supervised in the field by Tony Morris. Excavation, section cleaning and recording was carried out by Martin Ashton, David Knight, Tony Morris and Dave Walker. The illustrations were produced by Steve Malone (Figure 1.), Jane Goddard (Figure 2.) and Caroline Wickham (Figures 3 & 4).



- Watching-brief excavation area
- Cropmarks
- - - Edge of alluvial silt
- - - Ring-ditch excavation area (see Figure 2)
- Archaeological features confirmed by excavation

Figure 1. Plan of the northern part of Swarkestone quarry showing location of the area examined in the watching brief. Scale 1:2500.

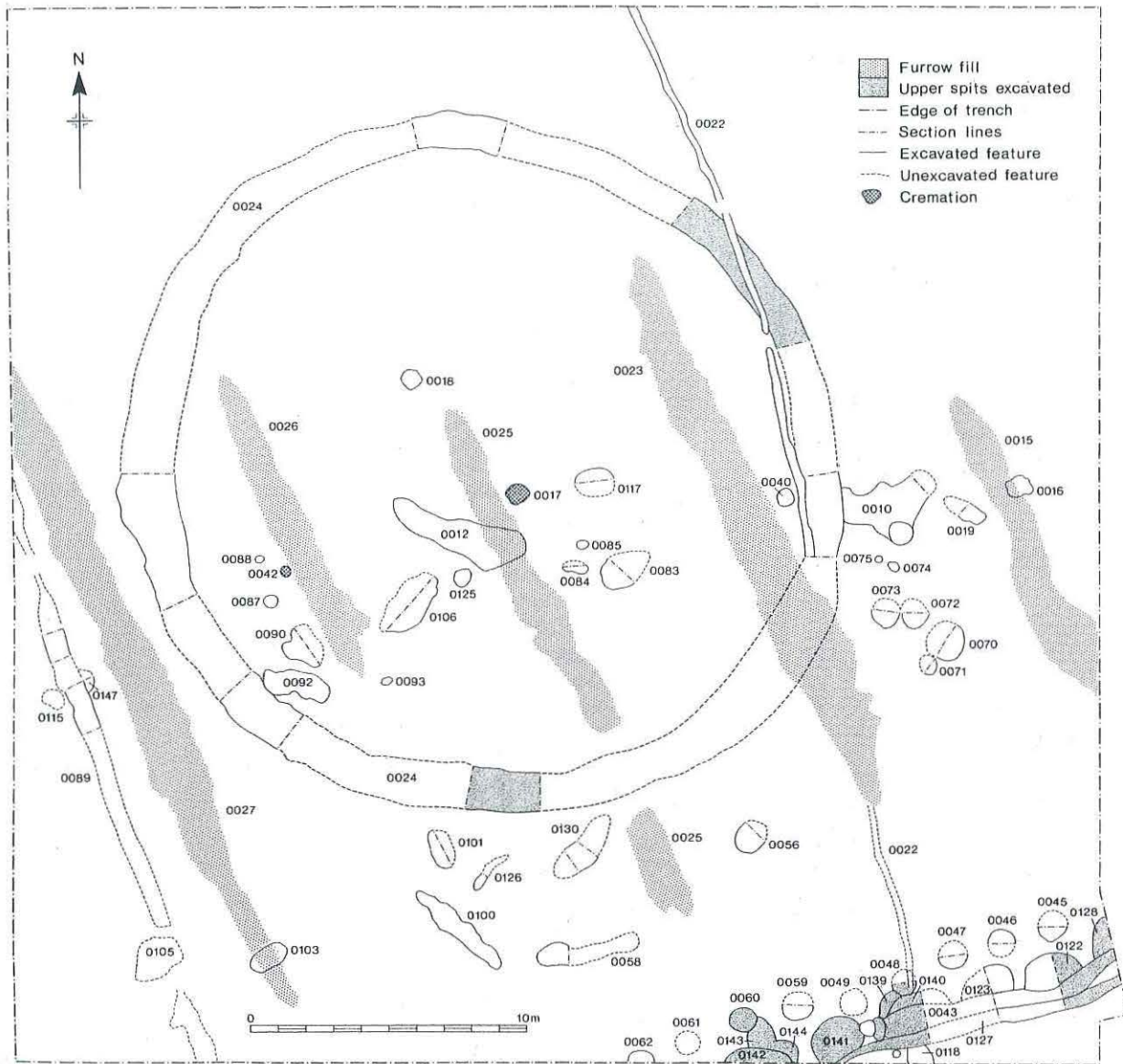


Figure 2. Plan showing pit alignments and other boundary features to the south of the Late Neolithic/Early Bronze Age ring-ditch (Scale 1:250).

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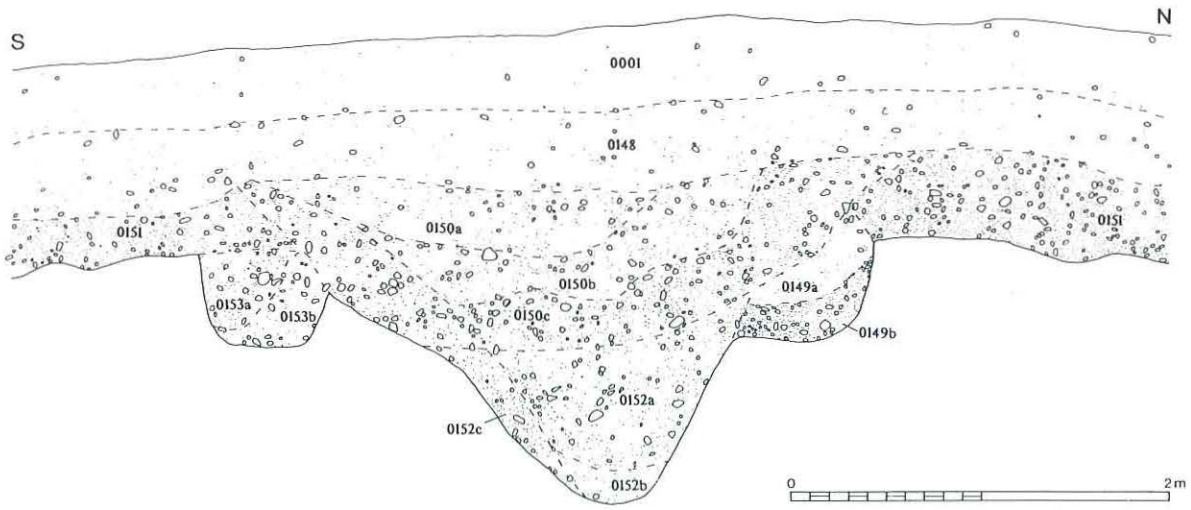


Figure 3. Oblique section of the boundary complex in the western quarry face, SK34282813 (Scale 1:40).

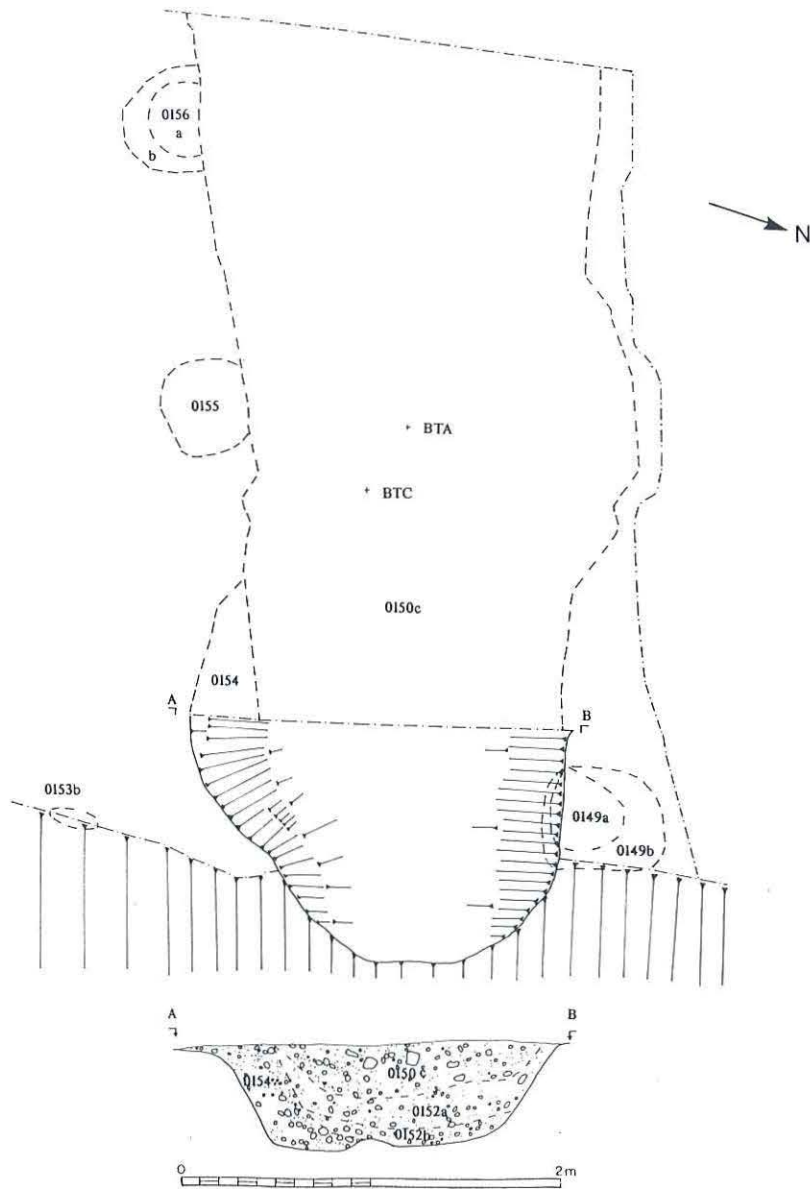


Figure 4. Post-excitation plan and section of boundary features revealed at the west edge of the quarry (Scale 1:40).



Plate 1. Cleaning the oblique quarry-edge section.



Plate 2. Close-up of the section across the boundary complex showing the base of the two phases of ditch (0150 and 0152) and the remains of a large pit (0154).