304

TARMAC HOVERINGHAM (THM): ARCHIVE REPORT

TRENT & PEAK
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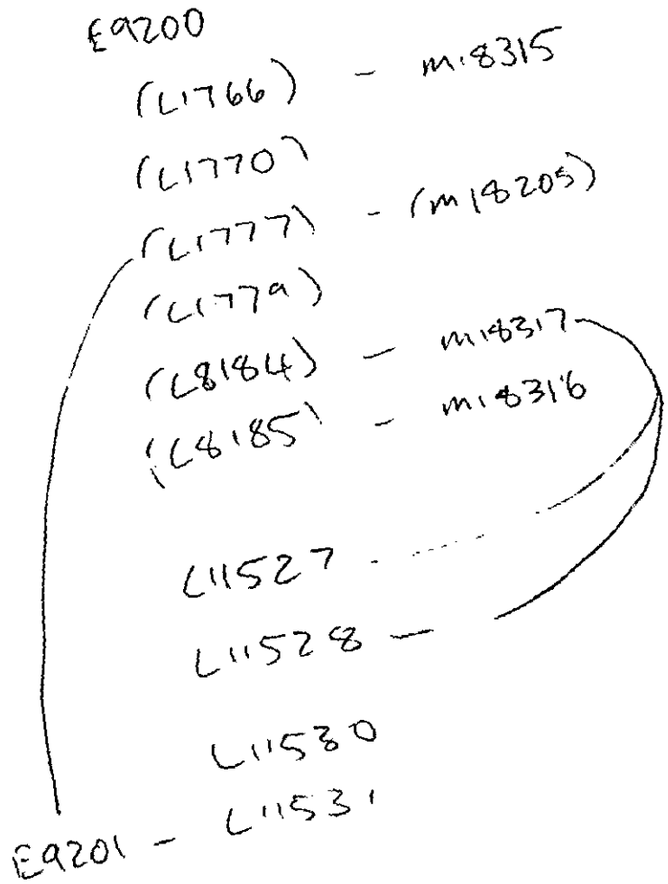
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TARMAC HOVERINGHAM (THM): ARCHIVE REPORT

December 1993 Giles Woodhouse, T&PAT

INTRODUCTION

During the period October to December 1992, the T&PAT completed a preliminary evaluation, on behalf of Tarmac Quarry Products Ltd., of known cropmark features identified during desk-top assessment (Fig. 1 & 2) in the parish of Hoveringham, adjacent to the existing quarry. Air photographs of the proposed extraction area show a broad range of cropmarks. These include several rectilinear enclosures, a curvilinear enclosure, a trackway and other less readily identifiable features.

The aims of the evaluation were three-fold:

1) to obtain evidence of the preservation, date and function of the known cropmarks.

2) to broadly investigate the archaeological potential of the areas which are devoid of cropmarks.

3) to investigate the palaeo-environmental potential of the alluvial deposits known to occur within the proposed extraction area.

TOPOGRAPHY AND SOILS

The area lies wholly within the flood plain of the river Trent. Geologically, the area consists of Holocene alluvium and river gravel overlying Permo-Triassic Mercia Mudstones. The northern and southern margins of the Trent flood plain in this area are bounded by Triassic deposits of Mercia Mudstones which includes thin bands of fine-grained sandstone, called skerries. Low cliffs of this Mercia Mudstones lie 1km north of the site. The area is low-lying and generally flat, rising only circa 1.5m from NE to SW. The First Edition OS map (1899) shows the area bisected by two stream systems. It is unclear as to whether these are natural systems or man-made drainage channels. However, the eighteenth century enclosure map of Gonalston (NRO GO 2 L) depicts what appears to be a natural stream bisecting an area of deep alluvial material (see area 2 below).

The OS geological survey (sheet 126) divides the area into two portions; one alluvium covered by a red clay loam, the other a river gravel island (flood plain terrace). Three of the sites (SMR 1770a, SMR 1770b and SMR 1779) are situated close to the southern margin of the gravel island; this margin is delineated by a sinuous field boundary and drain. To the south of this boundary the ground falls away abruptly by at least a metre and the soils appear to be of heavy loamy clay as indicated on the OS Solid & Drift Geology map. This possibly represents an alluvium-filled palaeo-channel that had formerly eroded the flood plain terrace. To the north, however, there is no distinct junction between the flood plain terrace and the alluvium; the flat ground rises imperceptibly from the terrace across the alluvium towards the north cliff of the valley.

On the basis of the data recovered from bore-holes and an auger survey, the extraction zone was divided into three broad zones of superficial geology as follows:-

Area 1 typical flood plain deposits covered by a developed ploughsoil and containing occasional, discrete superficial deposits of alluvial clays and other silts up to 0.4m thick.

Area 2 contains the same floodplain deposits as area 1, but with deeper and continuous cover of alluvial clays and silts to a thickness of circa 1.5m.

Area 3 in the assessment this area was considered to be different, but evaluation has shown that this is similar to area 2.

With the exception of SMR 1766, all the sites lie within area 1 (Fig. 3). According to the OS Solid and Drift Geology map (sheet 126), area 1 encompasses both river gravels and "red clayey loam" overlying alluvium. The bore-hole data characterises the geology of area 1 as a `consistent' 1.4m depth of silty fine sand occasionally intermixed with some gravel. This, however, is not the case. During the course of the evaluations it became quite clear that there was great localised variability in the composition of the immediate sub-soil geology. The best drained and most gravelly area occurred in the vicinity of SMR 1770a. The limits of this gravelly zone are discernible in the air photographs of the site. SMR 1779 occurred at the edge of a well-drained gravelly area on sands and gravels with only a small silt component. SMR 1770b is cut into silty sands and gravels with a marked iron pan content. SMR 1777 is situated on poorly drained silty gravels and sands. It is worth noting that parts of SMR 1770a and SMR 1777 are covered by the layers of silty sand encountered in area 1, yet the sites are still visible as cropmarks. Lastly, SMR 1770 runs through the two supposed geological zones defined by the geological survey.

It should be noted that area 2 was specifically reserved for meadow in the eighteenth century (map NRO GO 2 L) and that in an immediately adjoining parcel of land, which also contains deep alluvial deposits, land-use is restricted to woodland. It is possible, therefore, that when alluvial deposits are of a significant thickness they have a restrictive effect on settlement. In the light of this hypothesis it is odd, therefore, that SMR 1766 should be found, as a grassmark, in an area of deep alluvial deposits.

Palaeo-environmental Potential of the Proposed Extraction Area

The initial desk-top survey highlighted area 2 (Fig.3), apparently comprising recent alluvial deposits, as an area which might contain palaeo-environmental material. The extensive coverage of the TARMAC bore-hole survey did not encounter such deposits. This is perhaps not surprising, as comparison with an auger transect done by the Trust across this zone (see below) suggests that the original survey was too insensitive to record localised occurrences of such deposits.

As part of the evaluation, an auger transect, at 10m intervals, was undertaken across area 2 (Fig. 3) in order to establish the presence or absence of palaeo-

environmental deposits. The auger generally penetrated to a depth of circa 1m and in so doing encountered a wide range of alluvial clays in each hole; these varied in colour (brown, yellow, pink, blue and grey clays represented) and in stone content (stone-free to stony). This contrasts with the pre-existing bore-hole data which records a single layer of brown clay that had a variable stone content to a depth of circa 1.5m. At three points the survey recovered deposits which appeared to contain organic deposits. A sample of each has been examined by Dr F. Chambers for potential pollen content. All three contain pollen, confirming the presence of palaeo-environmental deposits along this transect.

How these deposits were formed is unclear and the following formation processes could have occurred:-

1) A localised silting as a result of major flood episodes.

2) Gradual deposition from the stream noted on the eighteenth century map.

Area 2 is perhaps not the only potential source of palaeo-environmental material. During the evaluation of Trench 09 at SMR 1777, located on area 1 of the site, feature (0005) was boxed to confirm its profile. The base of the feature was cut into a deposit of very damp, silty, coarse sand which contains numerous small pieces of preserved wood. The occurrence of this deposit together with those occurring within area 2 could be taken as suggesting that there is a complex relict channel deposition sequence in the area similar to that encountered at Langford.

In summary, the evaluation has produced evidence of palaeo-environmental deposits which are of great potential interest in reconstructing the past environment of the threatened area. However, it should be noted that neither the bore holes nor the auger survey revealed any thick and continuous palaeo-environmental sequences, and that, therefore, there is no evidence that a complete diachronic palaeo-environmental overview could be recovered. It is clear, nonetheless, that a palaeo-environmental context for SMR 1777 could be recovered.

FIELDWORK

Evaluation trenches

SMR 1766

The single available air photograph [SK 6846/11] shows an unusual complex rectilinear arrangement of grassmarks (centred on SK 68420 4667) that comprise, in the main, a series of inter-connecting linear features of differing widths (Fig. 2). There also appears to be two large, curvilinear features appended to smaller, linear features within the main body of grass marks. It is worth noting that the site is bordered on two sides by deep water-courses as several of the linear features appear to lead off towards them. Traces of similar linear features, on the same alignment, appear to lead off to the north-west beyond, and thus possibly below, the now ploughed out field boundary which is present on the eighteenth century enclosure map of Gonalston parish (NRO GO 2L). The same map shows an odd re-entrant in the western boundaries of these fields which otherwise follow the line of the stream. Part of this re-entrant aligns directly with a linear parcel of land that ran in 1799 to the west of the stream (map HV 1 L). It is possible to conceive that some elements of the rectilinear pattern of SMR 1766 relate to this anomalous relict part of the field boundaries thus suggesting that SMR 1766 was once larger and has been cut through by the neighbouring stream.

TRENCH 01

The original intention was to place a trench across one of the widest cropmark components, but a considerable portion of the site now lies on private land belonging to the Mill. Instead, Trench 01, measuring 30m x 3m, was located in the north-east portion of the site so as to cross up to three of the linear ditches (Fig. 4). The clayey topsoil was machine-stripped leaving a less than satisfactory surface. Nevertheless, the northern half of the trench appeared to show two separate features cut through a pinkish clay sub-soil in addition to two field drains. Three and a half days were spent cleaning the northern half of the trench [Dr 1; Cs 1-8]. A 1m wide linear ditch (0002), running NW-SE, was located at the north end of the trench cut through natural clay deposits. A tile land drain, running NE-SW, just crosses 0002 at the eastern limit of the trench. The second, less well-defined, possible feature (0003/4), running NE-SW, was situated c 3m to the south. This feature is crossed by a modern, gravel land drain.

Linear ditch (0002)

An initial 1m cutting was made across this feature, characterised by a mottled pink-red, blue-grey, and yellow silty clay material [Dr 3]. This fill was relatively shallow (c 0.1m) and might represent a deliberate back-fill. Sealed beneath this layer is a brown-orange clay containing organic matter (twigs/roots?). It was possible to excavate only c 0.2m of this fill as the water table was encountered at this depth. The most remarkable discovery is, however, indications of a timber-lining [Dr 2] preserved from c 0.15m below the base of the topsoil. This lining appears to comprise varying lengths of riven planks lying flat against the ditch scarp or protuding into the ditch fill. No finds were recovered from this cutting. This cutting was extended 1m to the east in order to try and retrieve some dating evidence. The same sequence of deposits were encountered [Dr

6 & 7] and a single find of fired clay [AAA] was retrieved. This find could not be dated.

At a late stage in the evaluation, the second cutting was re-opened and the one of the larger planks [AFF] was removed as a sample initially for dendrochronological dating. Insufficient rings were present (39 rings), but the plank was identified as willow. A sub-sample of this timber was submitted to the British Museum for radiocarbon dating. The radiocarbon date of cellulose extracted from the wood sample [BM-2869] is as follows:

1280 - 1410 Cal AD [68% probability]

1190 - 1510 Cal AD [95% probability]

The sample clearly falls within the medieval period. As the wood appears to be an integral component of the ditch structure, it seems reasonable to date the feature to the medieval period.

0003/0004

0003 was regarded as a potential feature and so a 1m wide cutting across it was begun. It became clear very quickly, however, that 0003 continued beneath adjacent deposits to the east. To confim this impression, the cutting was extended in both directions to the limits of the trench and boxed to a depth of c 0.20m [Cs 32-33]. The resultant section [Dr 5] shows that 0003 is a component of localised variation in the sub-soil and clearly not of archaeological origin. It appears that the ephemeral deposit (0004) is also a component of this variation in the sub-soil.

Conclusion

It appears that the trench located one of the linear grass mark features on the expected alignment. This ditch (0002) seems to have been timber-lined perhaps to prevent erosion of the ditch sides by flowing water. The only other "feature" (0003/4) proved to be variation in the natural sub-soil, but could nonetheless be responsible for some of the more irregular grass-marks visible in the air photograph.

The available evidence would suggest that the rectilinear complex of ditches is medieval in date. It is difficult, however, to suggest a clear function for SMR 1766. It has already been noted that settlement sites are unlikely to be encountered on top of the deep alluvial clays that exist in this area. It would seem more plausible to suggest that this site may have had a specialised agricultural function. Possible functions are as follows:-

1) water meadow. The role of true water meadows in Nottinghamshire has not been well studied. In the south of England they consist of rectilinear systems of drains fed by streams and controlled by locks. SMR 1766 is rectilinear in form, adjacent to a stream and it is vaguely possible that the wood discovered could be part of a lock system.

2) warping One possible interpretation of the linear arrangement of the grass-marks is that they represent a form of land improvement akin to "warping"; the controlled inundation of poor soils to improve their quality via a system of embanked drains with sluice gates and return drains fed by a river or stream (1990, Ellis & Crowther). The analogy is limited, however, as this system relies on tidal flow for the channeling of water. Some form of land improvement is, nonetheless, a feasible interpretation as the soil across the field is a heavy, poor-draining, loamy-clay which rests upon poor-draining natural clays.

3) osier bed The 1799 enclosure map of Hoveringham (HV 1 L) appears to show trees growing near the mill on the anomalous land parcel described above. This allied with the discovery of willow from the feature (0002) might hint that osier production took place in this area. Lowe (1798, 118-9) mentions that willows were grown on "waist moist lands" in strips demarcated by ditches between 3 & 4 yards (2.7-3.7m) apart. The ditches were supposed to be 3 feet wide (0.9m), 2.5 feet deep and 1 foot wide at the base. The sectioned ditch is the same width, and although not bottomed has on one side in one place the correct gradient. In four places the ditches may be between 3 or 4 yards apart.

The function of SMR 1766 is unknown.

SMR 1770b

This site [Plan G] shows as a quadrilateral enclosure (measuring approximately 40m x 40m) with a possible entrance in its south western side (SK 6895 4687) in air photographs [SK 6846/7,10; SK 6946/25; SK 6947/15]. Other cropmarks, generally represented by linear features, are apparent in the immediate vicinity of the site. One of these cropmarks, a long linear feature just to the west of the enclosure, shares a similar alignment to the trackway (SMR 1770) and might, conceivably, be related to the same phase of land organisation. Two other linear features appear to cross or join with the enclosure ditch.

TRENCH 02

A trench, measuring 15m x 3m, was located across part of the enclosure ditch and the topsoil machine-stripped. The base of the ploughsoil was cleaned by hand and revealed traces of features at the NW end of the trench [Cs 38-41]. A further spit was removed from 108N to 115N to define the features [Dr 8; Cs 58-61]. Two natural deposits (0004 & 0005) were present. 0004 is a light brown coarse sand and gravel with a silty clay component. 0005 is a brown orange silty clay sand containing large flecks of iron pan. 0004 appeared to be cut by a linear ditch (0002), c 2.5m wide, which could be resolved into two distinct fills. To the north of this feature there was a suggestion of another, narrower linear feature (0003).

Enclosure ditch (0002)

Presuming 0002 to be the enclosure ditch, a single 1m wide cutting was made across the ditch against the eastern limit of the trench (Fig. 7). The ditch has an irregular profile caused by at least one major U profile recut of a deeper, narrower V profile ditch [Dr 22, 27, 34; Cs 100-102]. A narrow, shallow slot (0002a), running on a parallel course, had been cut into the top of the ditch fill in the exposed portion of the ditch. 0002 contained numerous sherds of Romano-British pottery dating from the first to the fourth centuries AD. A small, fragmentary item of bronze was also preserved at the base of the ditch.

Structural feature (0003)

Having demonstrated with reasonable certainty that 0002 was the enclosure ditch it was decided not to investigate 0003, a possible related internal feature [Dr 8; Cs 58-61].

Conclusion

The cropmark enclosure ditch was located within the trench and was visible at the base of the modern ploughsoil. The finds and evidence for recuts suggest prolonged usage of the enclosure during the Romano-British period. Preservation appears to be relatively high and structural features may survive within the enclosure interior (eg. 0003). It is perhaps noteworthy that no Romano-British artefacts were recovered outside the enclosure which constituted the bulk of the area opened.

SMR 1770

The site [Plan F] shows as a pair of parallel ditches (c. 20m apart) which run from the gravel island margin south-east to north-west across the proposed development area (SK 6910 4685 to SK 6887 4715) [SK 6946/10,12,36,40]. At its south-eastern end, in the vicinity of SMR 1770a, the ditches splay apart increasing their separation to aprroximately 30m. The eastern ditch appears to have a substantial break (c. 80m) in its length just to the north-west of SMR 1770a. This ditch has an unknown stratigraphic relationship with the rectilinear enclosure ditch of SMR 1770a.

TRENCH 03

The eastern ditch of the two ditches forming the "trackway" was investigated in Trench 03 (Fig. 5) **[for details of the trench see Trench 03 under SMR 1770a]**. It was visible immediately beneath the ploughsoil in the expected position and on a NW-SE alignment. Five 1m cuttings were made, beginning at the southern limit of the trench and completed with the removal of the baulk between the third cutting and the fourth cutting against the northern trench limit. The exact form of the ditch was difficult to determine. Upon initial excavation it appeared to have a shallow, U profile and comprised an orange-brown silty-loam fill [Cs 84-89]. The base of the ditch, however, was a leached grey colour, which contrasted with the orange-brown natural gravels of the ditch sides. Excavation of this deposit in the first two cuttings suggested the existence of an earlier, V profile cut, but the leached character of the natural deposits to either side prevented clear confirmation that this was the case even when boxed against the southern limit of the trench [Dr 31,40,57,60; Cs 127-134,200-203].

The ditch produced two sherds of similar hand-made pottery from the final cutting [ACE - decorated, ABZ]. Dr Carol Allen (pers. comm.) has examined these slighty abraded sherds and concludes that they are of Bronze Age type, comprising a buff-coloured, grog-tempered fabric with distinctive finger-tip and incised linear decoration. The fabric type and decoration is similar to the second millennium pottery assemblages from the settlement at Billingborough (Chowne, 1988) and the cremation cemetery at Coneygre Farm (Allen, 1987). The firing and colour of the pottery is very reminescent of the Billingborough settlement pottery. A third sherd possibly of this type was recovered from a nearby post-hole (0011).

BA et

Conclusion

It is conceivable that the Bronze Age sherds relate to the "track-way" ditch, but it is more likely that they were incorporated into the fill of 0002 having been disturbed from a feature associated with the SMR 1770a activity.

SMR 1770a

Air photographs [NMR 6946/10,12,25,36,40] appear to show a diverse complex of features [Plan F]. The site appears to comprise a large, short-quadrilateral enclosure (measuring approximately 90m x 80m) defined on three sides; the fourth side possibly truncated by the palaeochannel to the south of the gravel island margin (SK 6915 4690). Within this enclosure is an irregular curvilinear, discontinuous, single-ditched enclosure (diameter c. 25m). Its most curious attribute is the apparent overlapping of the enclosure ditch on its south side, possibly an entrance way of unfamiliar type. There is an indication of at least one other small, curvilinear structure within the rectilinear enclosure and a penannular ditch adjacent to a larger ring ditch may be observed beyond it to the south east, close to the gravel island margin. It is worth noting that the Trust has recently obtained a 1991 air photograph [NMR 6946/51] of the site which shows for the first time an additional ring ditch lying c. 100m to the east close to the gravel margin. Finally, the rectilinear enclosure is superimposed upon, or by, the trackway (SMR 1770).

TRENCH 03

A trench initially measuring 20m x 3m was located so as to allow investigation of both SMR 1770 & 1770a. When the topsoil had been machine-stripped and trowelled clean a number of linear features were immediately apparent [Dr 9; Cs 48-51]. The need to recover datable artefacts from the enclosure ditch (0006) necessitated a 2m x 20m northwards extension to the trench [Dr 49].

Curvilinear enclosure (0006)

Ditch (0006) was identified as the enclosure ditch as it lay within the predicted distance from the trackway ditch (0002), had a similar depth, and was of the expected alignment [Dr 9,49; Cs 48-51]. The ditch generally has an asymmetrical U profile, but varies considerably along its excavated portion. The ditch itself does not appear to have been recut, but it has produced evidence of secondary activity [Dr 19-20,25,29,32,43,46,62-63,67-68,70; Cs 78-79,90-95,107-108,111-112,125,138-140,166-167,182-183,199,208-209,222-224]. Although not clear in plan, all the ditch sections show a shallow, U profile feature (characterised by a pebbly fill), cut into the top of the ditch fill [Dr 19,25,43,67]. A small post-hole (0008) was also cut into the top fill of the ditch. No datable finds were recovered from the excavated portion of the ditch. The ditch cuts an earlier, undated linear feature (0007).

Miscellaneous features (0003,0004/5)

Trench 03 produced two undated, shallow, irregular linear features (0003) [Dr 9-10,12,14,26,49,58-59; Cs 48-51,62-63,70-75,105-106,204-205] & (0004/5) [Dr 9,11,13,16,24,41,49; Cs 48-51,64-67,103-104,145-146] running approximately parallel to the course of the trackway ditch (SMR 1770), one of which is certainly not visible on the air photographs. At the base of the modern ploughsoil, they were largely indistinguishable and had a combined width of c. 4m. It is just conceivable that both were part of a single medieval furrow, but it must be stated that no other examples were located in the trench. Alternatively, 0003 possibly could be the overlapping arm of the enclosure ditch, closest to the trackway ditch.

Post-holes (0008,0010-0012)

Four post-holes were excavated. (0010), with a trace of a post-pipe at the base, [Dr 9,42,45,48; Cs 162-165,172-173,176-177] contained a sherd of hand-made pot and a fragment of cremated bone [ABU], a second (0011) [Dr 49,50; Cs 180-181,184-185] a sherd of hand-made pot [ABR] and a flint flake [ABV], a third (0012) [Dr 49,53,54; Cs 186-189,197-198] was devoid of finds as was the fourth (0008) [Dr 9,28; Cs 115, 120-121,199,208-209] which was cut into the top fill of the enclosure ditch (0006). The sherd from 0011 is of a similar fabric to those found in the trackway ditch and so is probably of second millennium BC date. The sherd from 0010 is too small to be identified with confidence, as is also another small sherd of hand-made pot found in the natural between 0002 and 0011. 0011 lies outside the curvilinear enclosure and is possibly indicative of open settlement [Dr 49]. The closely spaced post-holes 0010 & 0012 appear, superficially, to be aligned to the linear gully (0007) which is truncated by the enclosure ditch (0006) [Dr 9,49].

Gully (0007)

Adjacent to, and merging with, the enclosure ditch (0006), was a narrow linear feature (0007) [Dr 9]. An initial 1m cutting across this feature against the south limit of the trench showed the feature to be a shallow, U profile gully [Dr 18]. Upon careful excavation in plan of the intersection of 0006 & 0007, it could be seen that 0007 was truncated by 0006 [Dr 29; Cs 109-110,126]. No finds were recovered from this gully.

Conclusion

In addition to the curvilinear enclosure ditch (0006), trench 03 revealed evidence for occupation features, namely post-holes (0010-12), which may or may not be associated with the enclosure. One additional occupation feature, a gully (0007), appears to pre-date the enclosure, and a post-hole (0008) appears to post-date it. The enclosure ditch circuit (0006) appears also to have been preserved/respected when the ditch itself had silted up as there is evidence for a continuous, shallow trench in the excavated portion. This may prove to be a fence or palisade slot that replaced the enclosure ditch. Given the find of a sherd of hand-made pot and a piece of cremated bone from 0010, it is probable that the finds of Bronze Age pot from the "trackway" ditch (0002) relate to the occupation activity adjacent to, or within, the curvilinear enclosure. Its form and close proximity to three ring ditches would support a prehistoric date for this site as suggested by the finds.

TRENCH 04

This trench was located over the rectilinear ditch, as plotted from the air photographs, in order to recover dating evidence and gauge its preservation. The trench was sited on an offset from one of the very few base lines available in the development area. The topsoil was machine-stripped from a 10m x 3m trench and the base of the ploughsoil manually cleaned. No linear feature could be observed running SW-NE on the expected alignment at this level cutting the uniform deposit of light brown, with orange hue, silty sand present across the trench [Cs 52-53]. A 0.05m spit was trowelled in the hope of defining the ditch by removing the modern

plough scores running NW-SE along the trench, but without success [Cs 122-124]. It was felt that this silty sand deposit (0004) might mask the ditch and so a 1m wide box was taken down in 0.1m spits against the western limit of the trench until the ditch or natural deposits were encountered. At the base of the third spit varying natural deposits were truncated by the box, but no ditch was visible either in plan or section [Dr 33, 64].

It was concluded, therefore, that the trench was not in the correct position. In the hope that the trench was only slightly out, the trench was extended by machine 5m to the north and south. Again, the ditch was not visible at the base of the modern ploughsoil so the box was extended by machine to the depth of the existing box at the greater width of 1.5m. Finally, the ditch was located in the southern extension sealed beneath 0004 [Cs 147-150].

Alluvial deposit? (0004)

This silty sand layer overlay all other deposits in the trench, having an average thickness of 0.1m, though reaching 0.3m thick in places. As this deposit was not encountered overlying the natural gravel in Trench 03 nearby, 0004 is probably a localised occurence which is restricted to areas of poor sub-soil drainage. The formation of this deposit may be due to alluviation resulting from flooding by the river Trent or its tributaries. A similar localised deposit overlying archaeological features was encountered in Trench 09.

Enclosure ditch (0002)

The upper profile of the enclosure ditch is difficult to identify due to the similarity of the fill to the natural deposits to either side. However, in one of its phases it appears to have measured c 3m wide. The maximum depth of the ditch is 1.3m. Up to four phases of ditch construction were visible in the SW section after the ditch had been boxed. The first two cuts (0002d & c) appear to have been narrow deep U profiled ditches. The third cut (0002b) is a broader, shallower U profile ditch, and the final cut (0002a) is a much shallower, square-bottomed ditch offset slightly to the north [Dr 37; Cs 178-179]. Just two finds of possible Romano-British pottery [ACH, ACI] were found, these coming from the SW section just beneath the junction between 0004 and 0002 and may, therefore, be intrusive.

Archaeological feature? (0005)

A suggestion of an archaeological feature was recorded in section adjacent to the enclosure ditch (0002) [Dr 37]. If 0005 represents an archaeological feature, then it lies outside the enclosure.

Conclusion

It seems that the AP rectification program had over compensated for the obliqueness of the photograph used, and as a result plotted this portion of the enclosure ditch c 5m further to the north than it should be. The enclosure ditch appears to be sealed by a silty sand deposit possibly indicating some localised alluviation. The enclosure ditch could not be dated, but appears to be well preserved.

SMR 1779

According to the two available air photographs [SK 6947/12,13], the site [Fig. 8] appears to comprise two isolated, small, sub-square enclosures, measuring approximately 10m x 10m, lying c 3m apart on different alignments near to the gravel island edge (SK 6943 4715).

TRENCH 05

The trench, measuring 20m x 3m, was sited so as to clip both enclosures and was machine-stripped of topsoil then manually cleaned. Much of the resultant surface was obscured by modern plough scores and no features were visible [Cs 210-213]. An initial 0.05m spit was trowelled which removed the modern plough scores but did not identify the expected enclosure ditches [Cs 225-226, 235-236]. A second 0.05m spit, however, revealed both enclosure ditches [Dr 74; Cs 238-239]. In order to achieve better definition a third, smaller spit was removed from 107E to 120E [Dr 77]. This spit showed that the trench was located over the NW angle of the easternmost enclosure ditch (0004) and the east side of the westernmost enclosure ditch (0003). It also suggested the presence of external features (0005 & 0006).

Easternmost enclosure ditch (0004)

In order to excavate a 1m cutting across a straight forward section of the ditch avoiding the NW angle, 0002 (described below) was excavated first. Upon excavation in 0.05m spits the ditch appeared to have a single, symmetrical U profile and was filled with a homogeneous stone-free material [Dr 94 - N section, fill A]. A second 1m cutting was excavated to confirm the form of the ditch and to recover dating material [Dr 99]. It was noted that the base of this ditch as excavated was a grey colour which contrasted with the natural exposed in the ditch scarps [Cs 325-328]. A little probing suggested that this grey, stony deposit was ditch-fill rather than natural and so this was excavated in both cuttings [Dr 105; Cs 329-332]. From this it was clear that the enclosure ditch had been re-cut; the form of the original ditch (0004a) was narrow and had an asymmetrical V/U profile, the re-cut (0004b) was broader, shallower and had a more symmetrical U profile [Dr 94,100,106]. Three sherds of Iron-Age pottery [ACK,ACO,ADS] came from the fill of the re-cut.

Inhumation grave? (0002)

Cut into the fill of 0004 was a shallow, elongated oval U profile feature (0004), measuring circa 2m x 0.75m, which had beneath the distinctive stony fill traces of a post-hole against one edge [Dr 82]. The size and shape of this feature might suggest it contained a secondary inhumation burial. No finds, however, were recorded.

Westernmost enclosure ditch (0003)

An initial 1m cutting, adjacent to the north limit of the trench, was excavated in plan in 0.05m spits. Both sections suggest a single homogeneous fill virtually free of stones in a shallow, near symmetrical U profile ditch, c 0.4m deep and 1.6m wide, with no evidence for re-cutting [Dr 83,85]. No finds were recovered from this cutting. A second 1m cutting adjacent to the first was excavated in the same

way in an attempt to recover datable artefacts. The profile of the ditch remained the same [Dr 97,98] and no finds were found.

Circular pit (0005)

Situated between the two enclosures within the trench almost the entire circuit of a circular pit, measuring 2m in diameter, was located [Dr 77; Cs 246-247, 255-256]. The northern half of the pit was excavated in plan in 0.05m spits. The pit has irregular, near vertical sides and a flat base [Dr 88,89; Cs 292-293]. The half-section appears to show a centrally placed re-cut (0003a) with a basal width of c 0.4m. This re-cut rises steeply for about 0.2m before flaring out towards the edges of the pit. Three sherds of hand-made pottery [ADI,ADK,ADR], probably of Iron Age date, were recovered from the fill.

Pit/post-hole (0006)

A second apparent external feature (0006), lying close to 0005, was also excavated in plan in 0.05m spits [Dr 77]. Upon excavation it was found to be a sub-circular bowl-like pit, c 0.7m in diameter, with gently sloping sides to a depth of 0.2m below the base of spit 3. It was clear that the NE sector of the pit had been extensively damaged by animal activity - the remains of which could be smelt in this area [Dr 95; Cs 310-311].

Conclusion

The two sub-square enclosures were located in the expected position by the trench. Evidence of their function was not recovered, although the easternmost enclosure had a possible secondary inhumation cut into the ditch fill. However, there was some artefactual evidence to suggest their Iron Age date. The evaluation also produced evidence for external features, possibly associated with the enclosures (ie 0005), not visible in the air photographs.

SMR 1777

Air photographs of the site [SK 6947/1-2,4-6,9-11,14,16-17] appear to show a partial revelation of a large quadrilateral enclosure with evidence for internal and external conjunction of secondary features, and other internal features (SK 6917 4735) [Plan H]. The exact form of the main enclosure is, however, uncertain. At its south eastern limit, the ditch appears to turn through 90 degrees to the north east rather than to the south west as might be expected. It then follows an irregular course towards the field boundary which froms the eastern limit of the proposed extraction area. The air photographs suggest also that the enclosure ditch has been recut, the ditch at one point appears to occupy three separate, but aligned, positions. At least three, small, short-quadrilateral, conjoined, enclosures append to the inner flank of the main enclosure ditch. To the south west, at least two other linear ditches are observable, but their form and extent is not known. There are a number of discrete small, amorphous cropmarks visible on the air photographs lying within the complex. The cropmarks to the south east appear to peter out as they reach a clearly visible change in the subsoil.

TRENCH 07

This trench, measuring 10m x 3m, was sited across a large circular cropmark thought to be a well or very large pit within the enclosure complex.

? Post-medieval Animal burial pit (0002)

The topsoil was machine-stripped and the base of the trench manually cleaned. The pit (0002) was defined at this level by stiff, pinkish clay containing large pieces of charcoal, occasional pieces of bone and numerous fragments of modern brick/tile [Dr 78; Cs 257-260]. Because the definition of the feature limits were poor, further investigation was conducted by a 1m wide box excavation against the southern limit of the trench. This facilitated the definition of the feature and produced further finds of the type described above. Given the nature and date of the finds and the stiff clay fill suggesting a deliberate capping, 0002 was interpreted as a possible modern animal burial pit, and so further excavation was halted.

TRENCH 08

This trench, measuring 25m x 3m, was sited so as to allow investigation of the main enclosure ditch and any features that might lie outside the enclosure. The topsoil was machine-stripped and the base of the trench manually cleaned. Linear ditch features were clearly visible from 100E to 113E [Dr 80; Cs 267-270].

Enclosure ditch (0005)

The widest of these linear features was situated in the expected position of the enclosure ditch. A 1m wide cutting against the southern limit of the trench was excavated in plan in 0.05-0.1m spits. The enclosure ditch (0005) proved to be as large as the air photographs suggested and was well preserved, except the upper fill which appears to have been truncated by a medieval furrow (0004). This made the definition of the ditch limits difficult in the first instance [Dr 92]. The ditch appears to have been c 3m wide and up to 1m deep and has an asymmetrical U

profile. The ditch appears to have been recut more than once and has a complicated sequence of layers/recuts [Dr 107-109,111,113; Cs 342-356]. The ditch fill contained numerous sherds of Romano-British pottery, some Iron Age sherds, a small piece of preserved wood, animal bone and organic-rich fills [Cs 333-334, 337]. Dr F. Chambers, of Keele University, has confirmed that a sample of this fill contains abundant well preserved pollen.

Medieval ridge-and-furrow (0002 & 0004)

Spaced at c 6m intervals (from centre to centre) in the trench are three parallel linear bands of grey-brown silty loam with orange mottles (0004, 0002 & L - Dr 81]. 0002 and 0004 were both investigated in 1m cuttings and proved to be shallow near symmetrical 0.3m cuts into the natural sub-soil. 0004 cut the Romano-British enclosure ditch (0005). Their form, spacing and alignment suggest that they are medieval furrows and match more extensive linear anomalies from the resistivity survey.

Shallow linear cut (0003)

A shallow (0.1m deep) linear cut adjacent to 0002 was found to have plough scores at its base [Dr 87,91]. Given this, and the similarity of its fill with that of 0002, it is probable that 0003 is related to the medieval furrow and might represent a deviation from its course.

Linear ditch/gully (0006)

Two adjacent 1m cuttings were excavated in 0.05m spits across a narrow (0.5m wide) linear feature running parallel to, and just outside, the line of the enclosure ditch [Dr 80]. 0006 is a shallow (0.3m deep) asymmetrical U profile ditch or gully [Dr 93,96; Cs 306-309,335-336]. Three sherds [ACW-ACY] of Romano-British pottery were found in the fill. 0006 appears to be an external ditch/gully of Romano-British date.

TRENCH 09

This trench, measuring 30m x 1.5m, was sited across two of the smaller, conjoined enclosures, the northernmost, and most epheremal, example, and the middle enclosure, to try to recover evidence of occupation. The topsoil was machine-stripped and base of the trench manually cleaned. The enclosure ditches (0003-0005) were not visible at the base of the modern ploughsoil, although a medieval furrow (0006) could be observed running approximately NW-SE across the trench truncating a fine, silty sand. Selective boxing of this deposit and furrow fill was required to locate the enclosure features. No occupation features (eg. postholes, pits), however, were encountered perhaps due to the narrow width of the trench and the presence of the furrow (0006).

Sub-square Enclosure ditch (0003)

Feature (0003) corresponds to the ditch defining the north limit of the middle enclosure [Dr 110,112,119,125,127; Cs 385-388,395-398]. The U profile ditch contained numerous fills some of which may represent recuts. Animal bone, sherds of Romano-British pottery, and a sherd of Iron Age pottery were recovered from the

feature. As has been confirmed by Dr F. Chambers, a sample of the fill contains moderately well-preserved and abundant pollen.

? Sub-square Enclosure ditch (0004)

Feature (0004) was severely truncated by the furrow (0006) [Dr 116; Cs 373, 382], but its position and form suggest that it may be attributed to the interupted, ephemeral ditch defining the north side of the northernmost of the subsidiary enclosures.

Sub-square Enclosure ditch (0005)

Feature (0005) represents the southern limit of the middle enclosure. Of similar form and depth as (0003), it had been recut at least once and contained several fills, some of which may have an organic content [Dr 118,120-21,123-124; Cs 378-381,389-394,399-400].

Aluvial deposit (0002)?

Features (0003 - 0004), and part of (0005), were sealed by a deposit of fine, silty sand (0002). This deposit was not encountered in either of the adjacent trenches (07 and 08). The deposit appeared to be shallowing towards the southern limit of the trench, perhaps explaining the partial sealing of (0005). It does indicate that the deposit is very localised and perhaps only survives in depressions in the local topography of the site.

Medieval furrow (0006)

Unfortunately, a medieval furrow ran NW-SE across this narrow trench obscuring all the other features [Dr 103-104]. It was a broad, shallow, near symmetrical linear cut with a few plough scores visible cut into natural at its base [Dr 114-115; Cs 357-358,383-384].

Conclusion

The three evaluation trenches provided sufficient evidence to date the main components of the cropmark enclosure complex to the Romano-British period. The major ditches of this enclosure complex preserve organic remains, namely pollen and animal bone. There is some evidence to indicate localised alluviation over the site. Medieval ridge-&-furrow crosses the site and may have caused substantial damage to shallow internal features, such as post-holes. Some recent disturbance to the enclosure interior was encountered in trench 07.

CONTINGENCY TRENCH

Trench 06 was located across a substantial 'L'-shaped cropmark (approximate dimensions: 30m long by 10m wide) to the south of 1779 [Fig.1]. It was thought initially that the cropmark delineated the remains of a possible building (e.g. demolished agricultural building, Romano-British villa).

TRENCH 06

The trench revealed the presence of medieval ridge and furrow (0002,0006,0008) running approximately NW-SE across the field [Dr 61,69,71,73,75-6,79; Cs 229,240-241], an undated narrow linear feature (0004) [Dr 69,72,79; Cs 218-221,227-228] and a possible post-hole (0005) [Dr 69,72,79; Cs 218-221,227-228]. None of these features constituted any evidence for a building as suggested by the air photographs. It can only be assumed that the cropmark was produced as a result of a regular shaped variation in the subsoil or dampness of the subsoil, or due to some variation in an agricultural treatment of the field.

Geophysical survey

The initial geophysical survey entailed a 1ha area of magnotometry at 1m intervals centred on SMR 1779 in an attempt to confirm the position of the two small square enclosures and locate any other archaeological features in the vicinity not visible in the air photographs. The results of this survey, undertaken by P Strange, were very disappointing, failing to show even the two enclosures. It was tried over features visible in Trench 03 without success and so further usage of the magnotometer was abandoned.

A resistivity meter was tested in its place on a 20m x 20m square to the north of Trench 03 and appeared to detect linear anomalies resembling those visible in 03. Four further 20m x 20m squares appeared to confirm the line of the western ditch of SMR 1770 and the break in the eastern ditch.

The original evaluation design proposed a geophysical transect from SMR 1777 to SMR 1770 and to SMR 1770a to prospect for archaeological sites inbetween areas of known archaeology. The main obstacle to this was the presence of a sugar beet crop preventing any transect reaching either SMR 1770 or SMR 1770a. P Strange began this phase of geophysics with a 1ha resistivity survey centred over SMR 1777 where cropmarks are known to occur [Plan J]. This survey was successful in that it located the ditch features known from the air photographs and, furthermore, mapped the extent of medieval ridge-and-furrow. Unfortunately, P Strange was unable to do the selected transect from SMR 1777 to SMR 1770a or expand the area of coverage around SMR 1777 to gauge the extent of the site.

Geo-Services International (UK) Ltd completed this work, and in so doing tested another device, the EM conductivity meter. Plan J shows the position of the transect. The results of the survey suggest great variability in the sub-soils and these may have masked the presence of some features. However, the survey may have traced the western extent of SMR 1777 demarcated by one, or more, linear ditches. The transect between SMR 1777 and SMR 1770a identified probable field boundary ditches and a possible ring ditch to the west of SMR 1777. Conductivity survey appears to have traced linear ditch features in its sample area, but is not as quick as resistivity survey.

Conclusion

The geophysical surveys undertaken at the site suggest that the resistivity meter is the most effective instrument. Resisitivity survey accurately mapped archaeological features associated with SMR 1770 and SMR 1777. In the latter case, the survey has possibly traced the western extent of the enclosure ditch and a ring ditch lying a short distance beyond it. With the exception of the possible ring ditch, no previously unknown archaeological sites were identified by the geophysics.

Fieldwalking survey

A 6ha block centred on SMR 1777 was walked in 10m intervals to test the likelihood of mapping the extent of the site and from this the potential for locating previously unknown archaeological sites. The ground conditions were not perfect as the plough furrows had not weathered flat, but the weather was overcast. Just three finds were found. This is perhaps surprising given that the subsequent excavations demonstrated the truncation of features, containing durable pot sherds, by medieval ridge-and-furrow. Very few artefacts were noticed on the ploughed ground during fieldwork anywhere in the proposed development area - a sharp contrast with Holme Pierrepont. It was decided not to pursue any further fieldwalking on the basis of these results.

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Dr Patrick Strange	Geophysical survey
Tony Harwood	Geophysical survey
Dr Andrew Howard	Geomorphology of site

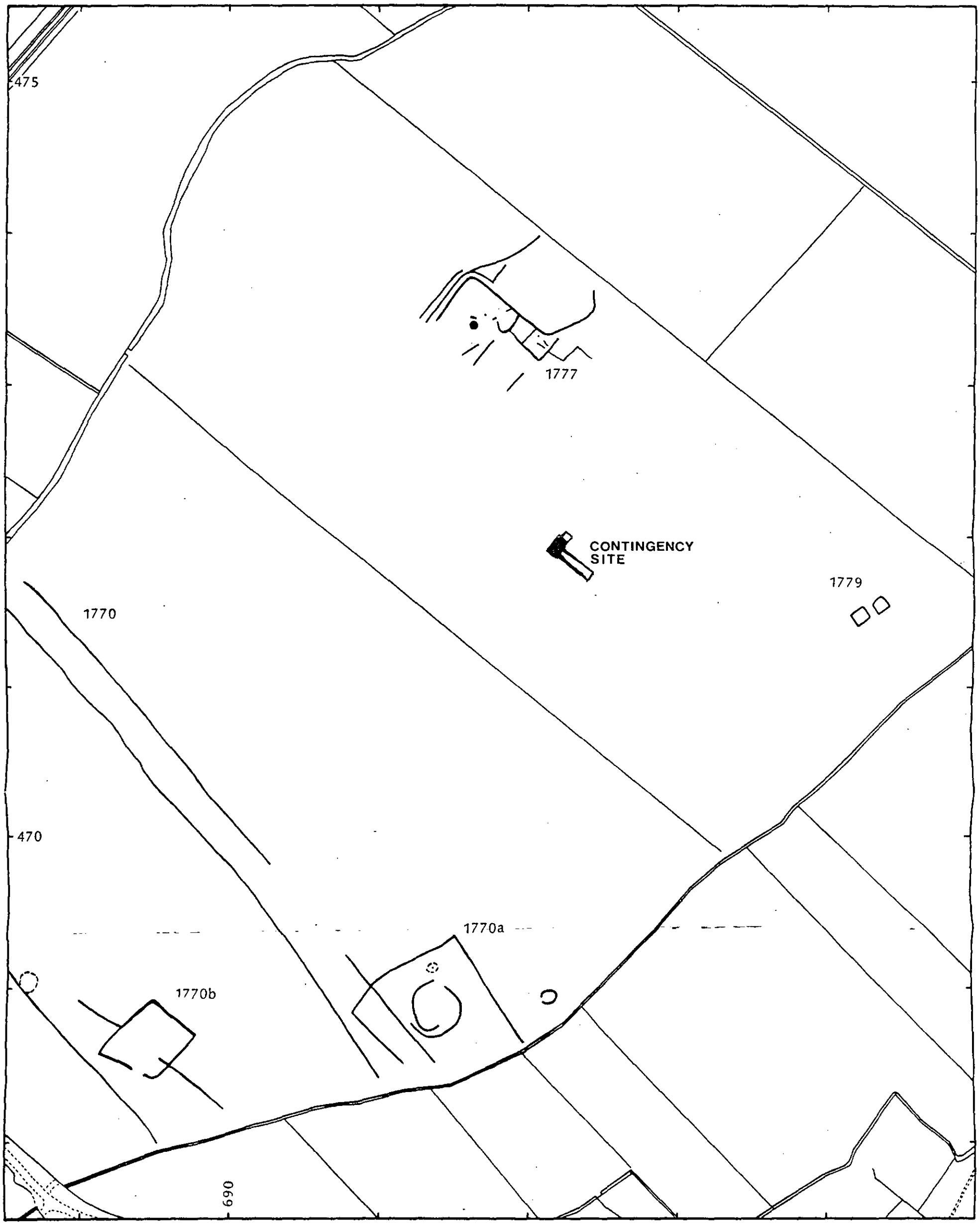


Fig. 1. Plan of the cropmarks (excluding SMR 1766)

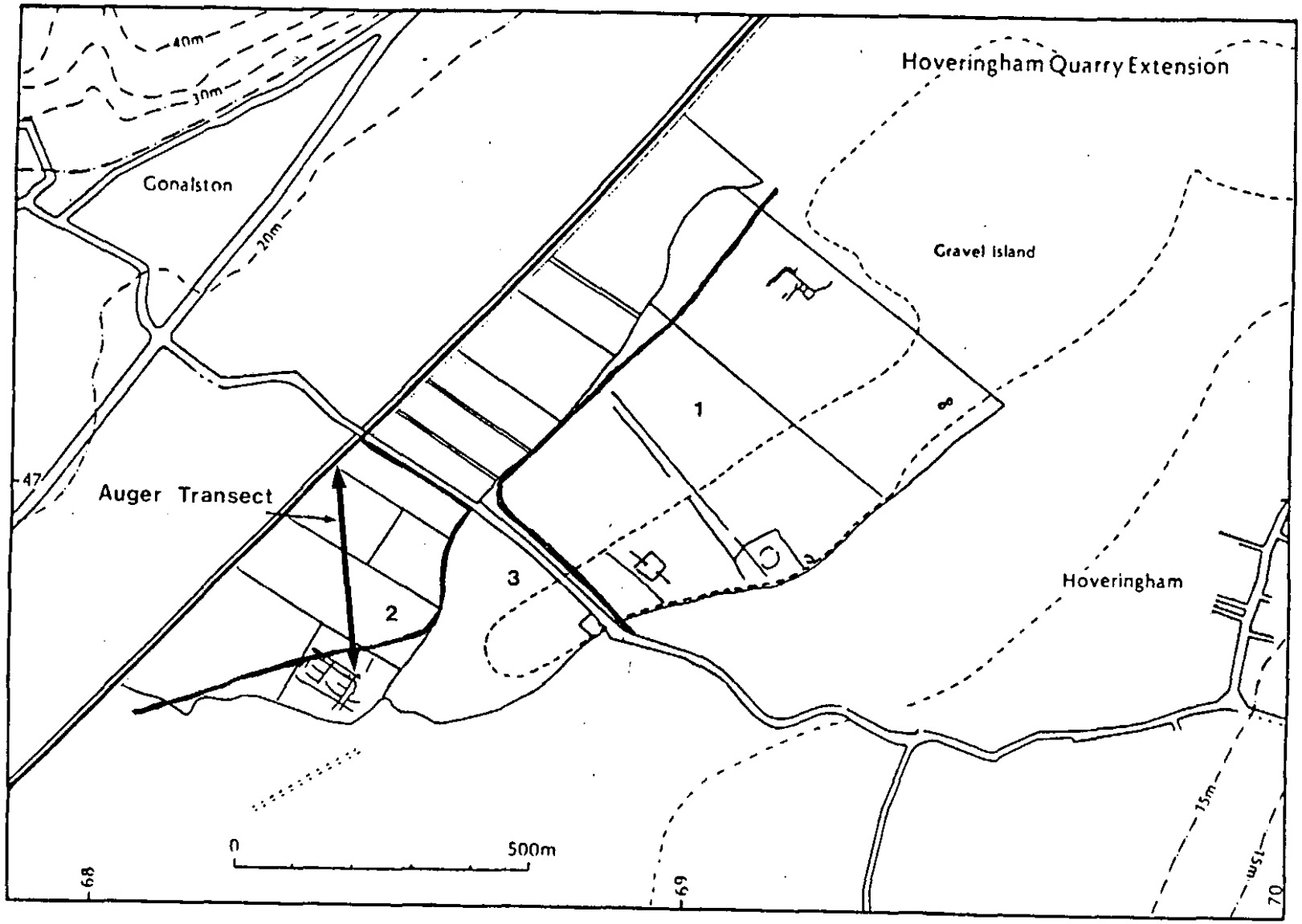


Fig. 3. Plan of cropmarks in relation to the geology

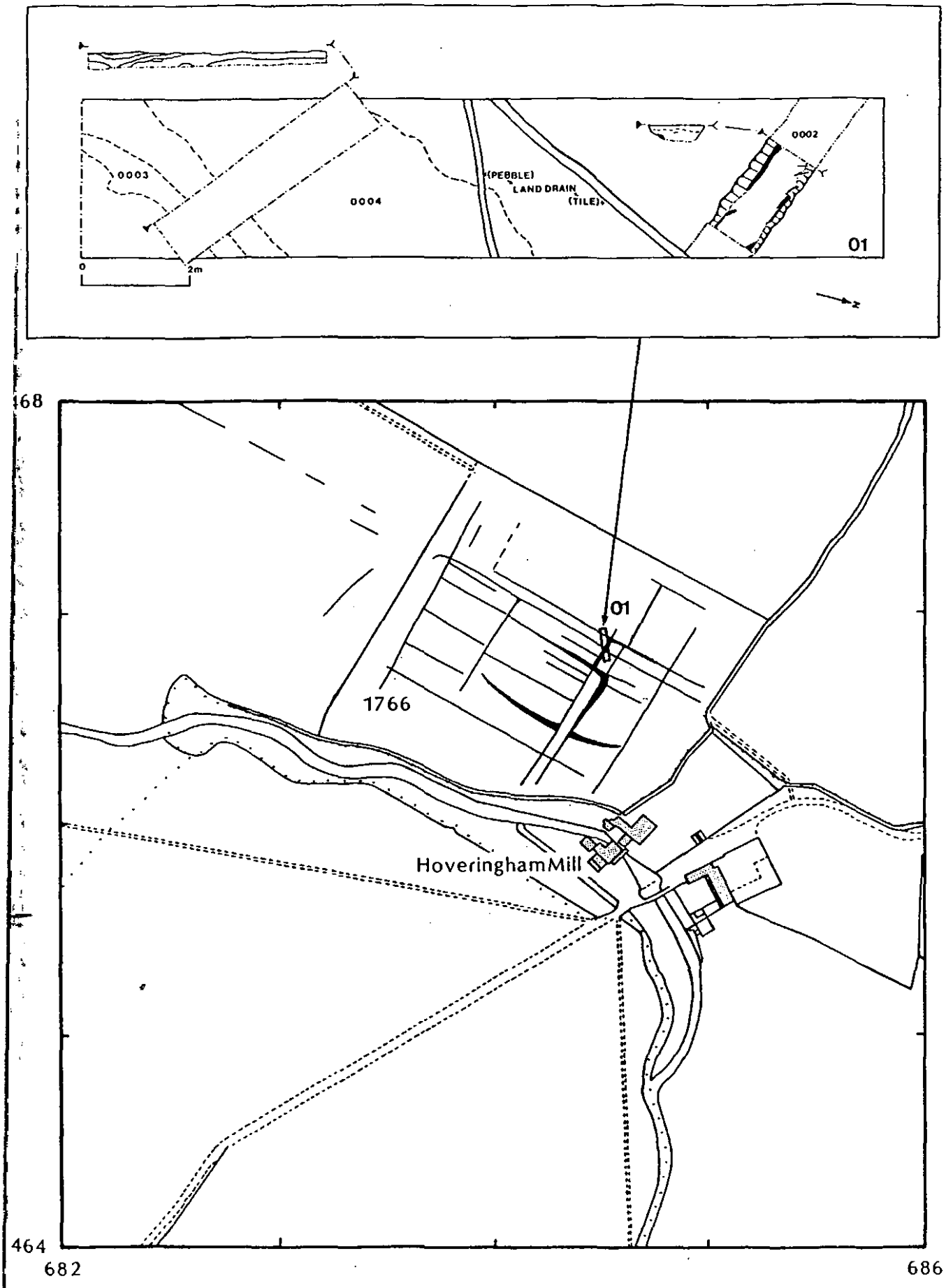
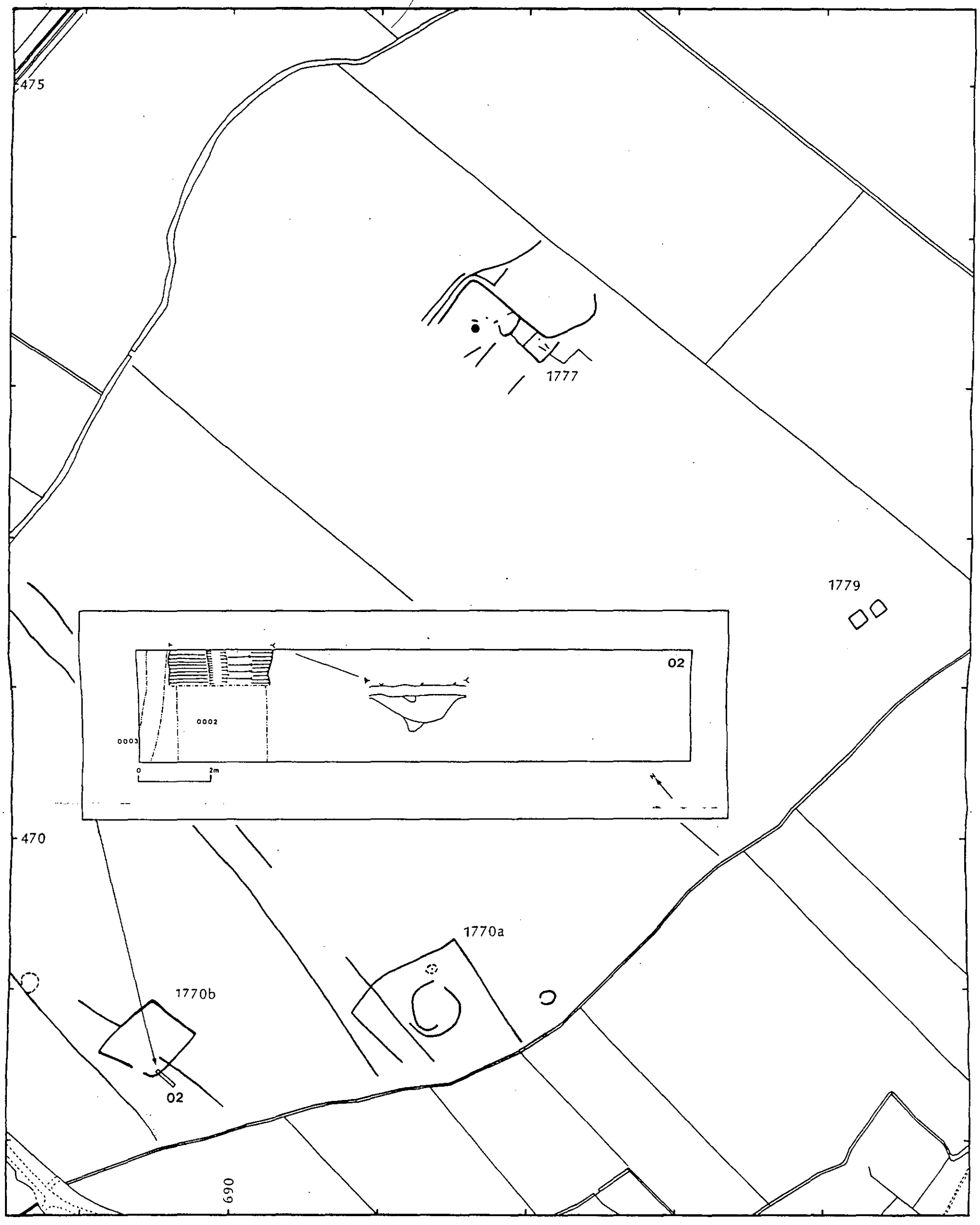
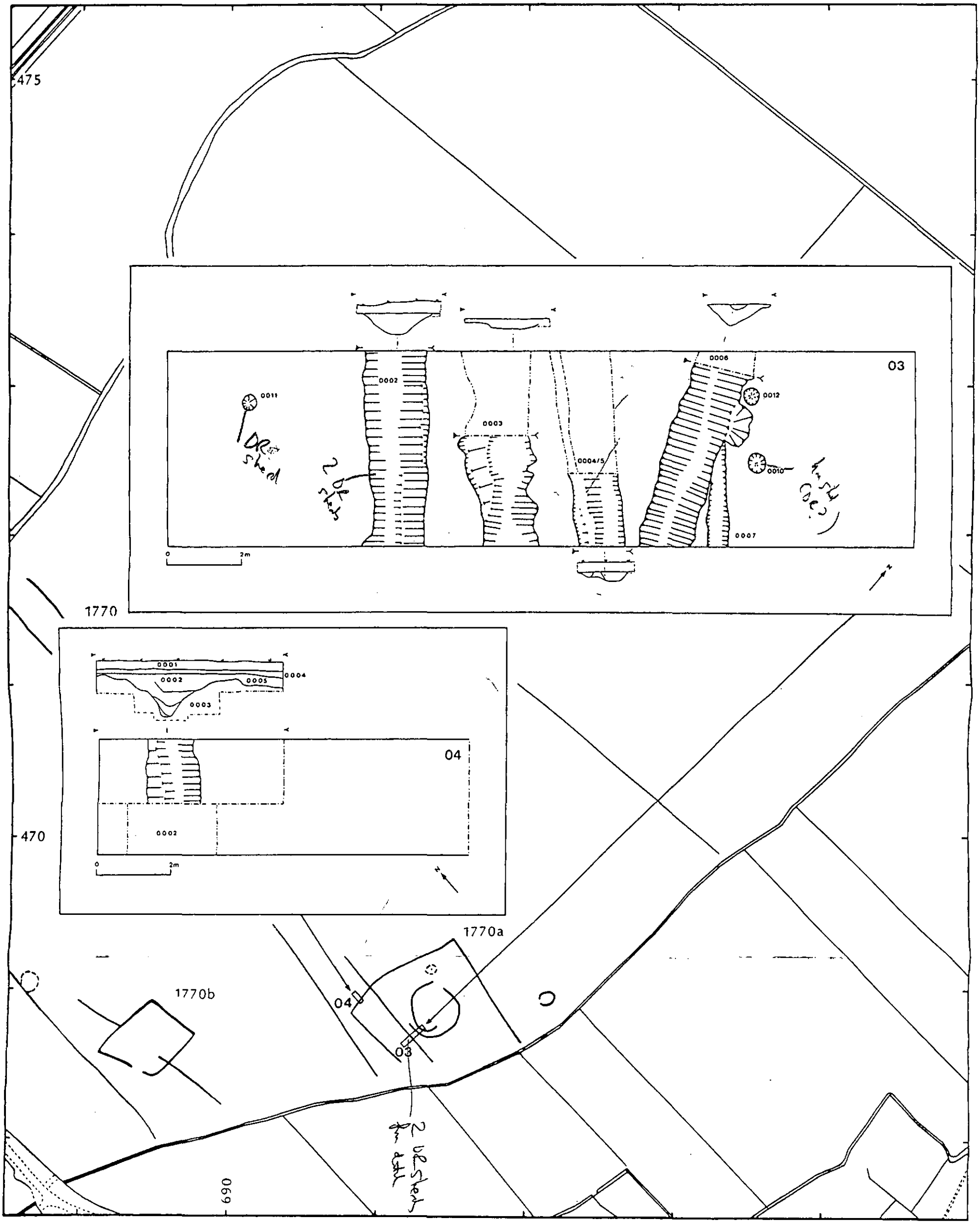


Fig. 4. Excavation plan of SMR 1766



PLAN G: Excavation plan of SMR 1770b



PLAN F: Excavation plan of SMR 1770

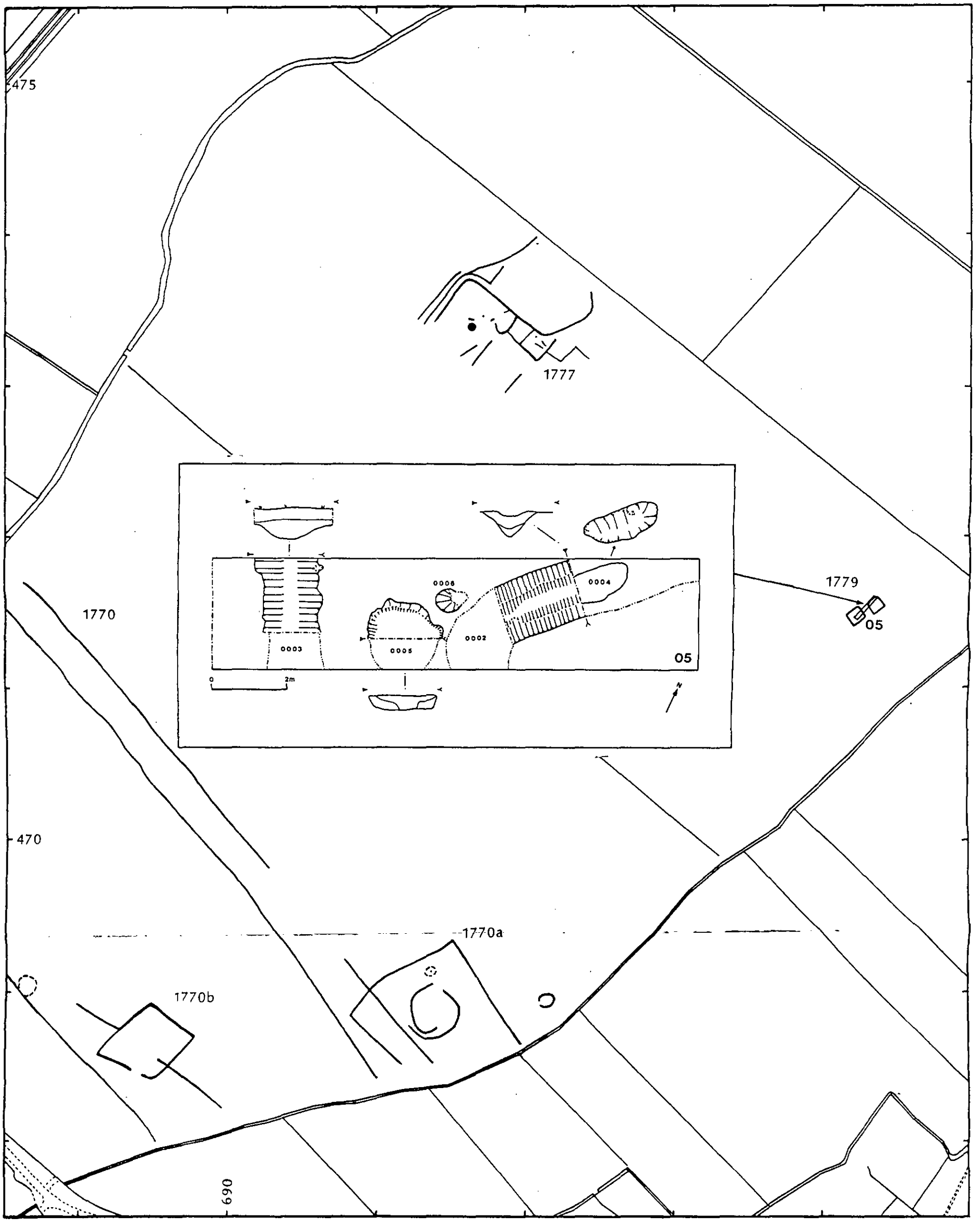


Fig. 8. Excavation plan of SMR 1779

475

08

09

07

1777

0004

08

0005

0004

0007

0002

0

2m

470

1770a

1770b

690

09

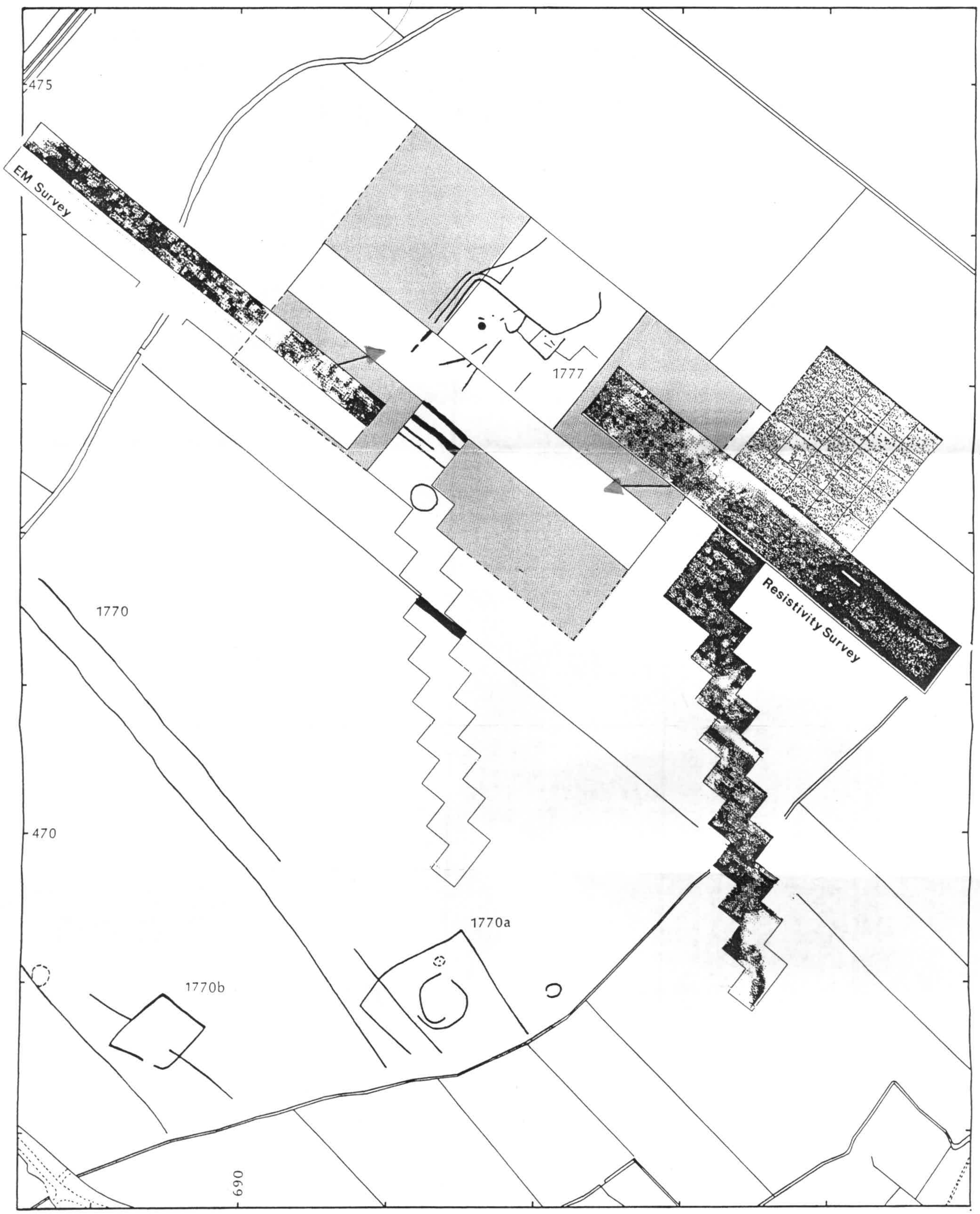
0006

0004

0005

0003

PLAN H:Excavation plan of SMR 1777



PLAN J : Results of the Geophysical survey of SMR 1777 and random transect

I.E. EM CARRIED OUT OVER PART OF THE AREA COVERED BY RESISTIVITY