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**A45/A445 Improvements
Ryton-on-Dunsmore
Archaeological Assessment**



 **Warwickshire**
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October 1993

A45/A445 Improvements, Ryton on Dunsmore Archaeological Assessment

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Summary

An assessment of land required for road improvements covering five fields to the north of the A45, east of the Dilke Arms and either side of the B4029 Wolston Lane, Ryton-on-Dunsmore, was carried out in March, July and September 1993. The work involved earthwork and geophysical surveys and trial trenching. This revealed evidence of medieval and later settlement, from the 12th to the 17th century, next to the parish church (Field A). An earlier evaluation within the area had uncovered part of a Late Bronze Age/early Iron Age settlement in the field to the west of Wolston Lane (Field E). The other fields (B-D) produced no features of significance.

The Late Bronze Age/early Iron Age settlement is of considerable importance as few sites of this period are known in the Midland region and it forms an element in an extensive later prehistoric landscape covering the area of Dunsmore. The medieval settlement lying next to Ryton church, the presumed focus of the village is also of some significance. Both sites would be severely affected by the road improvements. Proposed mitigation measures include area excavation of the Late Bronze Age/early Iron Age site and further sample excavation of the medieval settlement.

1. Introduction

1.1 A scheme has been put forward by the Department of Transport for improvement of the A45 trunk road between the Dilke Arms and the A445 Leamington Road, Ryton-on-Dunsmore, Warwickshire.

1.2 An archaeological assessment to consider the extent and state of preservation of archaeological remains in the improvement area was commissioned from the Warwickshire Museum and carried out in March, July and September 1993. A programme of fieldwork appropriate for a *Stage 3 Archaeological Assessment* (DoTp 1993, Sect. 3, Pt. 2, Cap. 8/5-8) was undertaken. This report presents the results of the assessment, giving an account of the archaeological finds and deposits recorded, assesses the impact of the improvements on the surviving remains and makes recommendations for mitigating this impact.

2. Location

2.1 The proposed road improvement area lies within the area SP3874-SP3974, north of the A45 in the parish of Ryton-on-Dunsmore (Fig. 1). The five fields (Fields A-E) covering the area of the proposal are currently in agricultural use, part under pasture and part arable.

2.2 The area lies at between 70m and 80m above ordnance datum on Mercia Mudstone with patches of 4th Terrace river gravel to east and west and of Wolston Sand and Gravel at the east end (British Geological Survey 1984).

3. Archaeological Background

The road improvement area contains no Designated Sites (Scheduled Monuments) but a number of archaeological sites and finds are recorded on the County Site and Monuments Record (SMR) in the vicinity (Fig. 1):

3.1 A fragment of Bronze Age (Beaker) pottery was recovered from Ryton Grange (now Grange Farm) at SP 395741 to the south of the A45 in the vicinity of the proposal area (Thomas 1974, 33; SMR No. WA 4281). The exact location and circumstances of this find are uncertain.

3.2 A Late Bronze Age/Early Iron Age settlement (SMR WA 4001) was recorded within the area of the current proposal, to the west of Wolston Road, during an archaeological field evaluation carried out in 1990 following an application by ECC Construction Materials to extract sand and gravel from land at Wolston Fields Farm (Warwickshire Museum 1990; SMR WA 3961). The evaluation report needs to be read in conjunction with a later reassessment of the pottery (Elsdon 1990) which refined the dating of the pottery (and the site) from Iron Age to Late Bronze Age/early Iron Age. Details of this evaluation are considered below and in Appendices D and E.

3.3 Ryton was one of the vills given by Earl Leofric to Coventry Priory in 1043 (VCH 1951, 210). By the time of the Domesday Book in 1086 it was assessed at 3.5 hides and included woodland half a league by 2 furlongs and a mill worth 12s (VCH 1904, 318). The village then contained 31 households as well as a priest. Large parts of the fabric of the Church of St. Leonard (SMR WA 4275) date to the late 11th century, the tower being added in the 15th century (VCH 1951, 211). By 1279 there were about 20 households in the village (Ibid.). The medieval village layout can be made out on the 1886 Ordnance Survey Map (Fig. 2) with two parallel rows of fairly regular properties aligned to east and west of the main north-south street. On both sides the rears of the plots seem originally to have formed a continuous line, although the eastern line had broken down by 1886.

3.4 By the end of the middle ages, in common with most villages in the county, the built up area at Ryton had contracted. The Commissioners of an Inquiry of 1516 into depopulation reported (Beresford 1945-6, 56) of Ryton-on-Dunsmore that 'by reason of enclosure the remainder of the inhabitants are deprived of common pasture and impoverished. The church is likely to be left desolate.' Though having some impact the enclosure did not leave the church desolate as is shown by a later survey of 1607. Earthworks to the north of the church (SMR WA 4293) may mark the site of an abandoned area of medieval settlement.

3.5 South of the A45 and immediately to the east of Ryton village two ponds (SMR WA 4292), still containing water, may have been fishponds or ornamental lakes associated with the 18th century Ryton House.

3.6 To the east of Ryton traces of ridge and furrow ploughing belonging to the medieval open field system are visible on air photographs taken in 1946-7 and later. This information has been plotted at a scale of 1:10,000 by Warwickshire Museum (SMR WA 3930). Field A, east of the backs of the properties was covered, as was Field B and Field C except for a strip along the west side. It is possible that this strip which was adjacent to a stream may have been meadow in the middle ages. No trace of ridge and furrow is discernable on the photographs in Fields D and E but it is possible that it once existed and had already been obliterated before the air photographs were taken. No visible surface trace of the ridge and furrow now remains in Fields B and C.

4. Aims and Methods of the Fieldwork

4.1 The fieldwork programme was designed to discover the date, nature and state of preservation of archaeological remains within the proposed improvement area. It

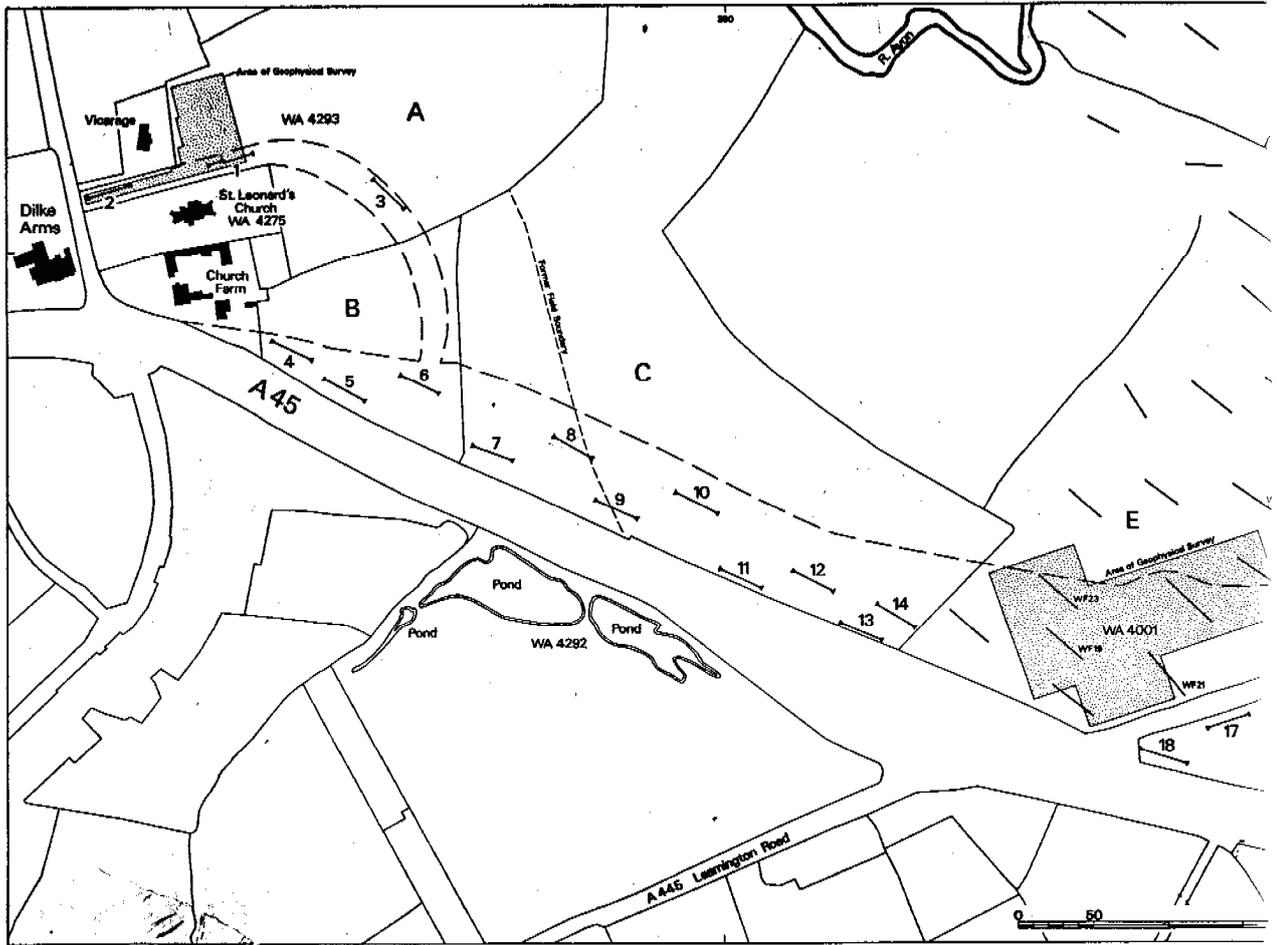


Fig. 1: Location Plan

was also intended to permit an assessment of the relative importance of these remains, an examination of the probable impact of the proposed improvements and allow recommendations for suitable mitigation measures. The level of work undertaken corresponds to a *Stage 3 Archaeological Assessment* (DoTp 1993, Sect. 3, Pt. 2, Cap 8/5-8).

4.2 In Fields A-D the fieldwork covered the whole of the proposed improvement area and involved earthwork survey, geophysical survey and a programme of trial trenching.

4.3 It was not felt necessary to investigate further Field E which had already been examined as part of an earlier evaluation carried out for ECC Construction Materials in 1990 (Warwickshire Museum 1990). This evaluation involved fieldwalking, geophysical survey and a programme of trial trenching, the results of which are discussed below and details of which are reproduced in Appendices D and E.

5. Earthwork Survey (Field A) (Fig. 3)

5.1 A series of shallow earthworks (SMR 4293) were visible over the field in pasture to the north of St. Leonard's Church, at the western end of the area of the proposed development (Field A). These were surveyed using a Topcon Total Station instrument.

5.2 The earthworks were made up of two elements. To the east a series of corrugations running east-west were recognised as the remains of medieval ridge and furrow cultivation. To the west the earthworks relate to the medieval properties fronting church road. In the central area to the south there was a rectangular plateau surrounded on three sides by ditches which might have represented a building platform of presumably medieval date. Dividing the two areas was a prominent bank running north-south across the field with a ditch on its west side, the ditch in turn having another shallow bank running along the west side of its northern half. The bank represents the headland of the ridge and furrow and/or a boundary marking the edge of the village. The ditch was initially thought to belong to a hollow way or sunken road but subsequent excavation proved it to be a boundary ditch associated with the bank (see below). To the west of the ditch there were three depressions which were the result of modern disturbance.

6. Geophysical Survey (Field A)

6.1 A geophysical survey was commissioned from Geophysical Surveys of Bradford to investigate the field immediately to the north of St. Leonard's Church (Field A), coinciding in part with the area covered by the earthwork survey (Fig. 3). The survey was carried out in March 1993.

6.2 The work involved a resistivity survey using a Geoscan RM4 (or RM15) Resistance meter and a magnetometer survey using a Geoscan FM36 Fluxgate Gradiometer. A full report is presented in Appendix A.

6.3 A high degree of "noise" was noted, especially in the magnetometer survey, owing partly to the presence of a ferrous pipe and stray surface and other buried material such as brick and iron fragments.

6.4 From the magnetometer survey too much noise disturbance existed in the narrow western strip for specific features to be recognised. A pit type feature and

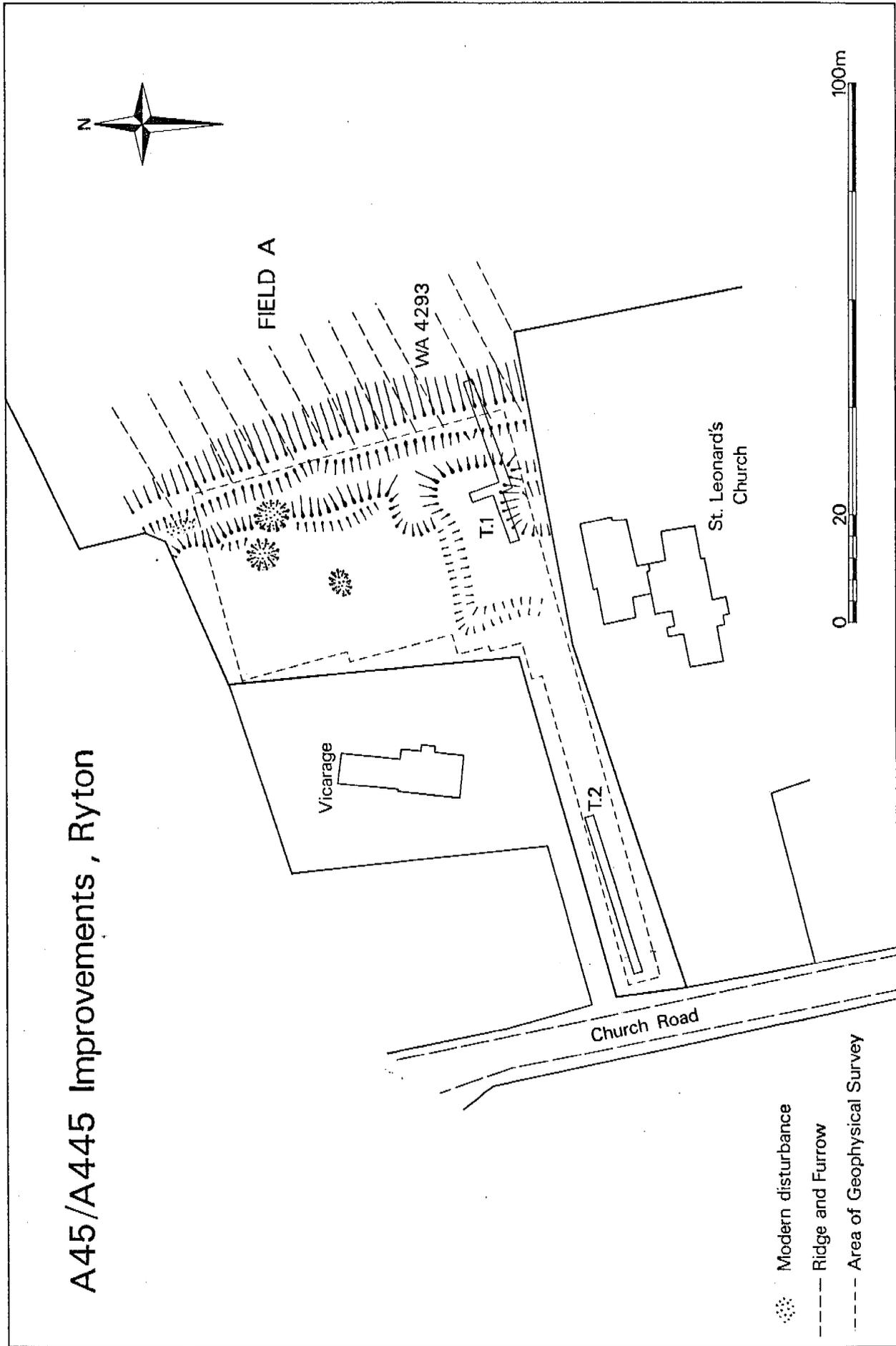


Fig. 3: Field A, Earthworks and Trench Location

the gullies from possible ridge and furrow running east-west were recorded in the north of the area, along with the ferrous pipe mentioned above.

6.5 The resistivity survey recorded the north-south ditch running along the eastern edge of the area already noted in the earthwork survey. In addition areas of high resistance at the northern end of the area were interpreted as the remains of a building with an associated rubble spread to the west, perhaps a yard area. The ditches surrounding the earthwork platform to the south showed as areas of low resistance but there was nothing to suggest the presence of a building on the platform. The few small anomalies within the narrow western arm of the area were not separately interpretable.

7. Trial Trenching (Fields A-D)

7.1 Twenty five trial trenches were dug (Fig. 1) representing a sample of around 2.25% of the area of the proposed road improvements excluding that already evaluated during the survey of 1990. When the 1990 survey trenches are taken into account the whole represents around 2% of the total area of the proposed improvements. Of the trenches dug in 1993 22 measured 30m by 1.6m, 2 measured 30m by 2m and one (Trench 1) was of an irregular shape 31m long and covering an area of 70 sq m.

7.2 The topsoil was removed by a Hymac hydraulic excavator using a 2m wide toothless ditching bucket for Trenches 1-3 and a 1.6m wide toothless bucket for Trenches 4-22. Further excavation was carried out by hand. The archaeological features revealed were planned to scale and photographed in colour and in monochrome. Vertical sections were drawn to scale where appropriate and each archaeological context and its stratigraphic relationship was recorded using the standard Warwickshire Museum system.

8. Trench by Trench Descriptions (Fields A-D)

8.1 Trench 1 (Figs. 3-5)

Trench 1 was aligned approximately east-west on the south side of Field A, roughly parallel to and within 10m of the churchyard wall. The trench was of irregular shape some 31m long and 71 sq m in area and was designed to investigate the possible building platform at the rear of the medieval property and the earthwork boundary features along its eastern edge.

At the east end of the trench a shallow gully (107) running north west-south east may represent the remains of an early ridge and furrow system. This was cut by another shallow gully (106) running north-south (Section A). To the west of 106 and parallel to it was a large ditch (103), 2.6m wide and 0.7m deep, with shallow sloping sides and a V-shaped base, and, 2.5m to the west, again there was another parallel, shallow gully (105).

Gullies 105 and 106 were undated, but Ditch 103 was of medieval origin, one of its lower fills (103/3) containing 14th-15th century pottery (Section A). All three were presumably boundary features marking the edge between the village properties and the fields to the east, although exactly how they relate to each other is uncertain. The larger ditch (103) was certainly the boundary at one period, but whether the gullies (105, 106) were earlier boundaries or associated with 103 as hedge or fence lines cannot be said. A bank or headland from the ridge and furrow to the east developed to the east of 103, eventually succeeding it as the boundary. Gully 106 coincides with the eastern edge of the this bank and may be associated with its development.

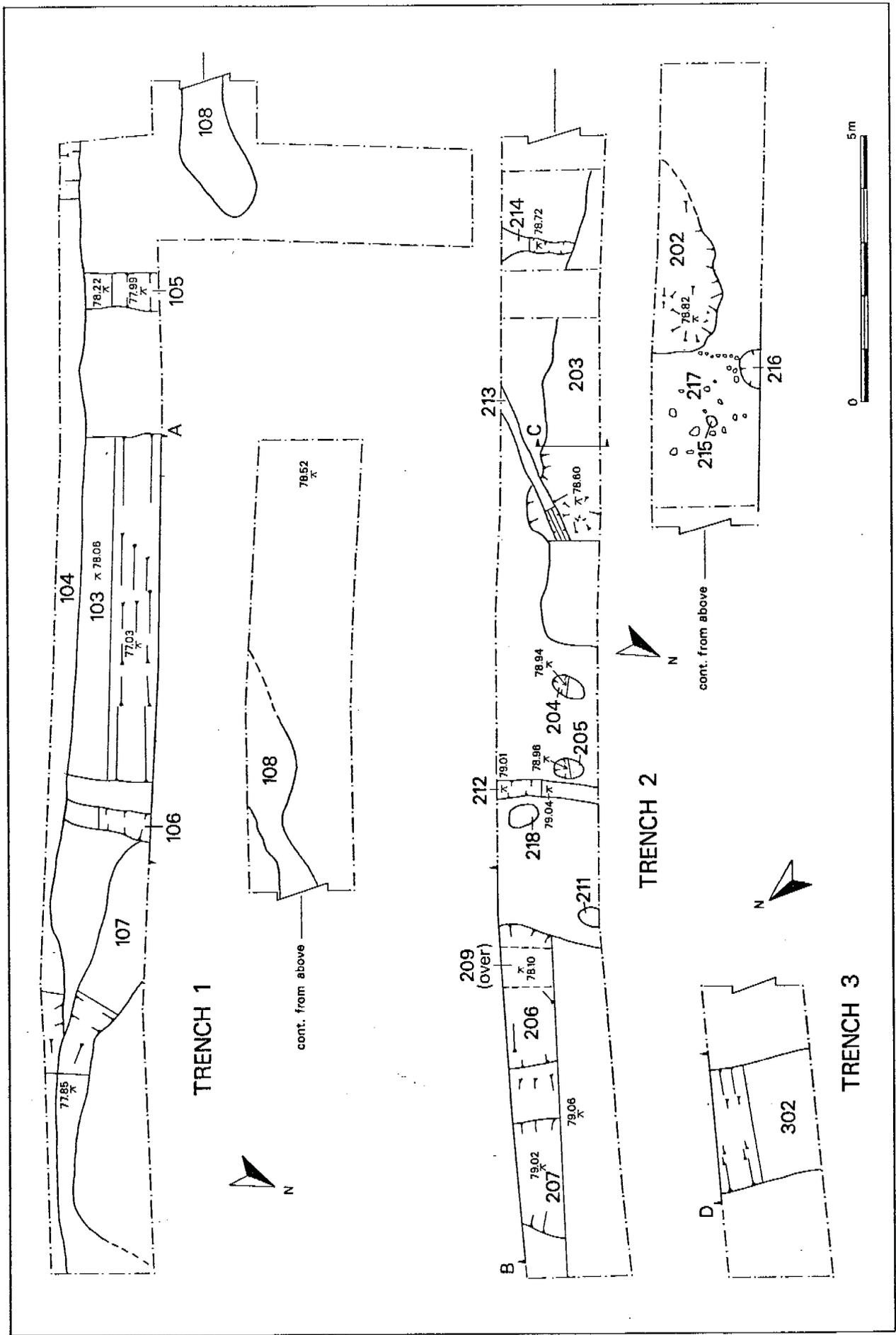


Fig. 4: Trenches 1-3, Plans

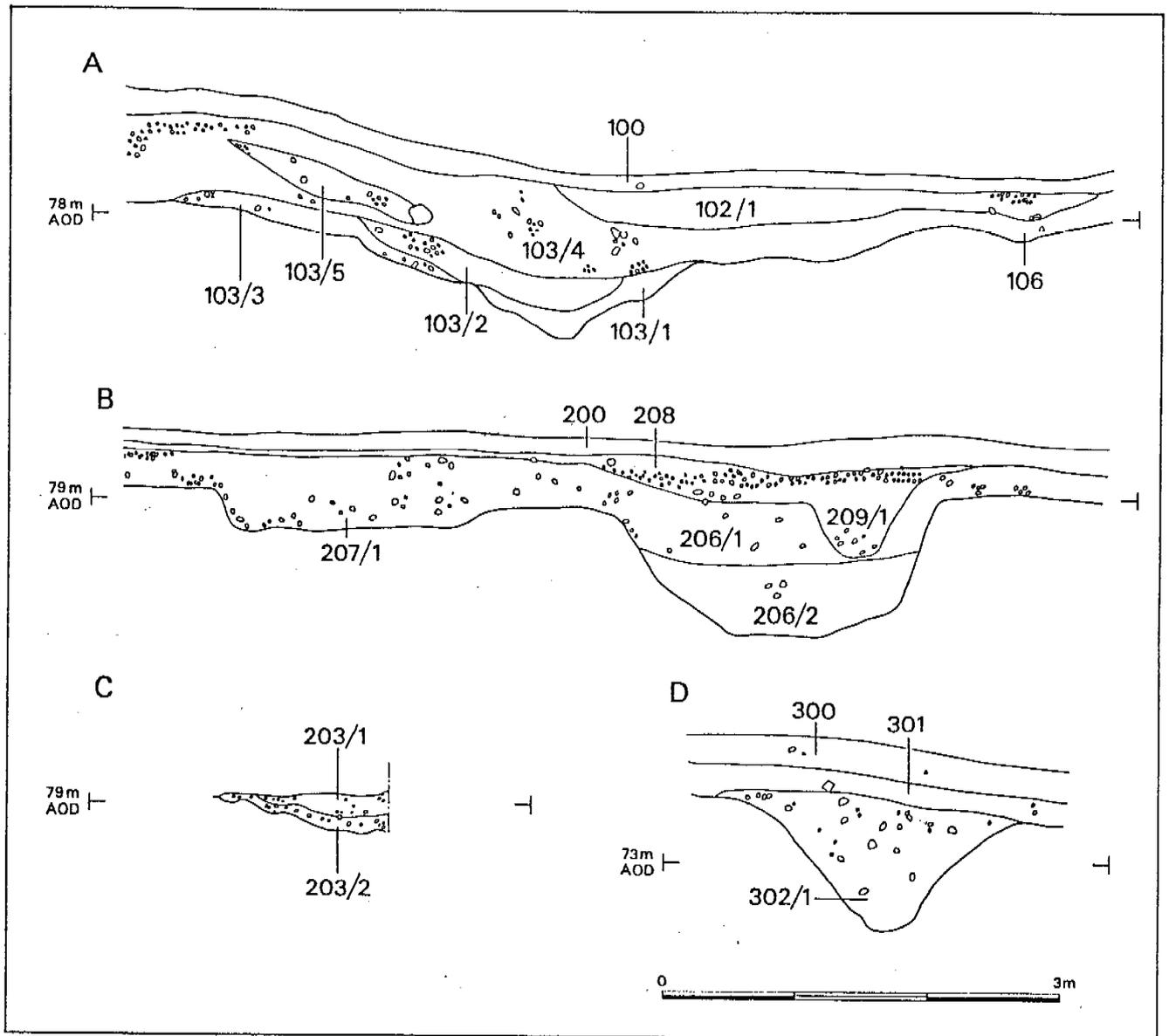


Fig. 5: Trenches 1-3, Sections

Within the property the only feature found was an undated, irregular shallow gully (108). No trace of any structures was found on the earthwork platform.

The boundary ditch 103 seems to have been largely infilled in the 18th century, according to the pottery and clay pipe from 103/2 and 103/4. Once the ditch was filled the whole area was cultivated and an east-west gully (104) which cut across the infilled ditch was possibly a late ploughfurrow. The possible ridge and furrow suggested by the magnetometer survey to the north may also belong to this episode.

Ditch 103 still survives as a hollow and further material (102/1) has been dumped in recent times to level it up.

8.2 Trench 2 (Figs. 3-5)

Trench 2 was aligned roughly east-west in the western side of Field A parallel and close to the churchyard wall. The trench was 30m long, 2m wide and designed to

investigate the road frontage end of the property where the main buildings would have stood.

At the west end of the trench a shallow depression in the surface of the natural subsoil (202) was filled by material containing a comparatively high quantity of pottery dating from the 12th/13th-15th centuries. Unfortunately this area had suffered considerable animal and root disturbance which made interpretation difficult.

Immediately to the east there was a small patch of cobbling (217), a group of three sandstone blocks (215) making a postbase, and a posthole (216). These features were undated but may be the remains of a timber building with a cobble floor or yard surface associated.

Around 5m east of 216 there was a narrow shallow gully (214) running north-south across the trench. This was undated but was cut by a long shallow sided depression (203, Section C), 0.3m deep, which contained 16th century pottery.

To the east of 203 there was a group of four postholes (204, 205, 211 and 218) and another north-south gully (212). The postholes will have belonged to another timber building. Posthole 204 contained 12th/13th century pottery but the others were undated. However, houses supported on earthfast posts were typical of the 12th-13th century, later ones tending to be set on stone footing walls.

At the east end of the trench there was a pit/hollow (207) containing 12th-13th century pottery (Section B). This was cut by a large square, steep sided pit (206) containing 17th century material. Although of different dates both 206 and 207 were probably rubbish pits. Pit 206 was cut by a north-south gully (209), which was then overlaid by a layer of gravel containing 17th-18th century material.

The latest feature found was a modern ceramic field drain (213) running south west-north east across the trench.

Trenches 1 and 2 thus revealed evidence for occupation from the 12th century to the 17th century. Although no complete plans were recovered there was evidence for timber buildings at the west end of the property, one, at least, probably of 12th-13th century date. The finds included quantities of roof tile, probably belonging to late medieval and post-medieval buildings. The area seems to have been abandoned by the 18th century when the property boundaries were infilled and the land turned over to agriculture, a use that has continued to the present.

8.3 Trench 3 (Figs. 3-5)

Trench 3 was aligned north west-south east in the south part of Field A and measured 30m by 2m. The only feature recognised was an undated ditch (302, Section D), 2.4m wide by 1.0m deep, running north north east-south south west across the NW end of the trench and probably representing a former field boundary.

8.4 Trenches 4-6 (Fig. 1)

Trenches 4-6 were all aligned north west-south east, measured 30m by 1.6m, and were spread over the western half of Field B. All three trenches contained very shallow topsoil (c.0.27m deep) directly overlying plough disturbed geological natural and no archaeological features were recognised within them.

8.5 Trench 7 (Fig. 1)

Trench 7 was aligned north west-south east at the north west end of Field C and measured 30m by 1.6m. Under a shallow topsoil (700) and subsoil (701) two modern ceramic field drains ran north north east-south south west across the northern end of the trench parallel to, and within 9m of each other. Both drains had been badly damaged by plough action; no other archaeological features were recognised.

8.6 Trench 8 (Fig. 1)

Trench 8 was aligned north west-south east in the north west half of Field C and measured 30m by 1.6m. Under a shallow topsoil (800) and subsoil (801) a ditch (802), 1.35m wide and 0.3m deep, ran north north east-south south west across the southern end of the trench; the ditch fill (802/1) contained modern pottery. The ditch was recognised as a recent field boundary shown on an OS map of 1938. The boundary on the map is positioned slightly to the east of that recognised in the field, though this can be accounted for by its having represented the line of a hedge rather than that of the ditch. The ditch was also recognised to the south in Trench 9 (see below, 902).

8.7 Trench 9 (Fig. 1)

Trench 9 was aligned north west-south east in the centre part of Field C and measured 30m by 1.6m. Under a shallow topsoil (900) and subsoil (901) a field boundary ditch (902), continued from Trench 8 to the north west (see above, 802), ran north north west-south south east across the northern end of the trench. At the southern end of the trench two layers of brick rubble, cinder and ash (903, 904) represent debris from earlier modern, road improvements.

8.8 Trenches 10 and 11 (Fig. 1)

Trenches 10 and 11 were both aligned north west-south east in the centre of Field C and measured 30m by 1.6 metres each. Both trenches contained a shallow layer of topsoil overlying apparent plough disturbed geological natural. Trench 10 lay within the area of the former quarry shown on the 1886 map (Fig. 2). According to information provided by WCC Planning and Transportation Department this quarry was infilled in the course of earlier road improvements in the 1960s. It is therefore possible that the apparently natural material was redeposited. Trench 11 lay outside the former quarry but it is possible that this whole area was affected by the 1960s activity.

8.9 Trench 12 (Fig. 6)

Trench 12 was aligned north west-south east in the south east part of Field C and measured 30m by 1.6m. Under a shallow topsoil (1200) four shallow gullies (1201-1204) ran parallel to one another north west-south east across the trench at regular intervals (about every 4m). The gullies were not fully excavated and few finds were recovered though 1203 did contain a fragment of medieval roof tile. The gullies represent the remains of the ridge and furrow system plotted from air photographs and also recognised during the 1990 evaluation.

8.10 Trench 13 (Fig. 1)

Trench 13 was aligned north west-south east in the southern corner of Field C and measured 30m by 1.6m. The trench contained a shallow topsoil overlying plough disturbed geological natural. No archaeological features were recognised.

8.11 Trench 14 (Fig. 6)

Trench 14 was aligned north west-south east at the south east end of Field C and measured 30m by 1.6m. Under a shallow topsoil (1400) and subsoil (1401) in the centre of the northern half of the trench a pit with shallow sloping sides and flattish base (1402, Section E) cut 0.26m into geological natural. No finds were recovered from the fill of the pit and it therefore cannot be dated.

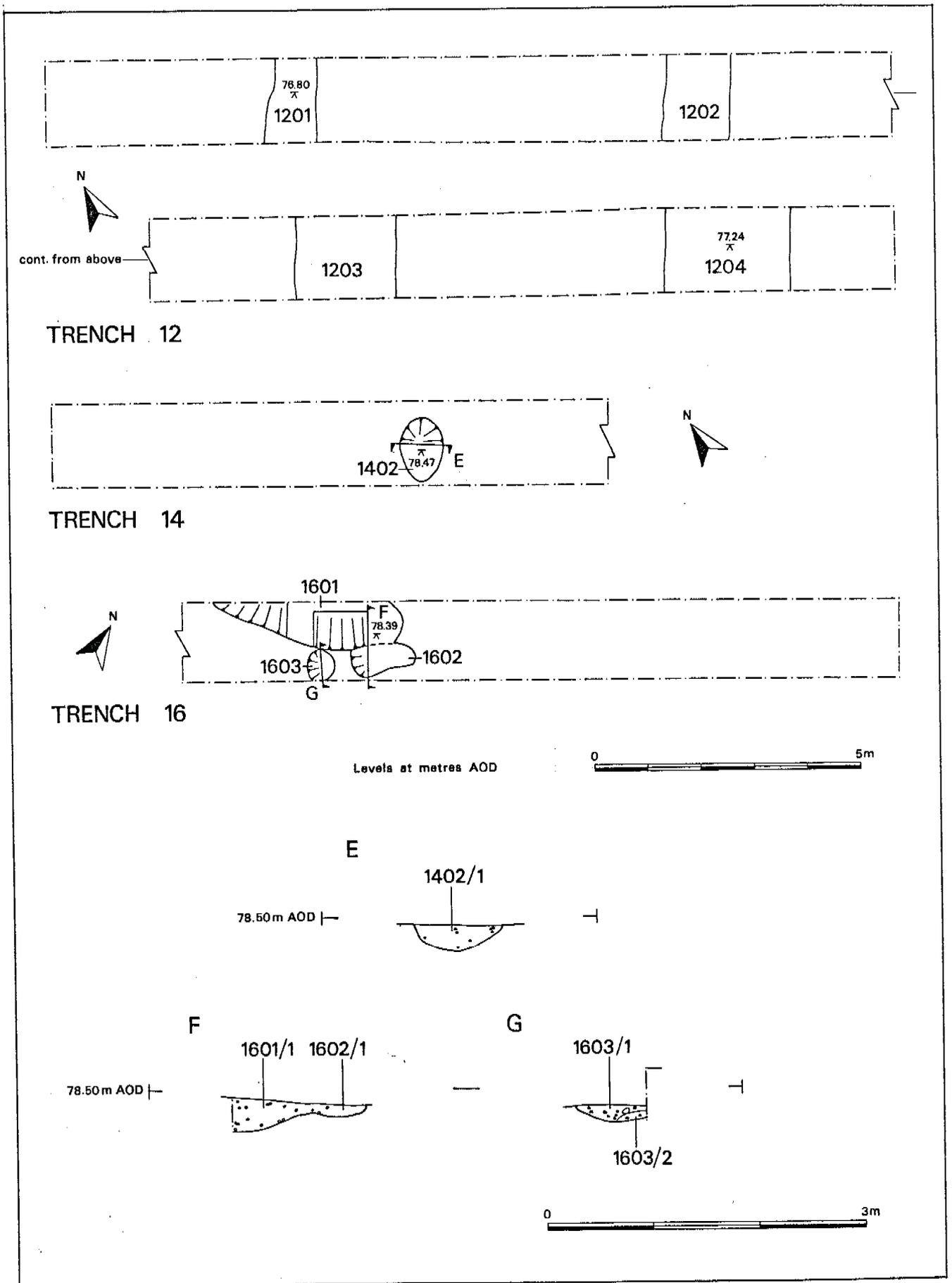


Fig. 6: Trenches 12, 14 and 16, Plans and Sections

8.12 Trench 15 (Fig. 1)

Trench 15 was aligned north east-south west along the centre of the NW side of Field D. The trench contained a comparatively deep topsoil and subsoil (1500, 1501, combined depth 0.50m) overlying geological natural. The subsoil contained a worked flint of Bronze Age date but no archaeological features were recognised.

8.13 Trench 16 (Fig. 6)

Trench 16 was aligned north east-south west along the north west side of Field D and measured 30m by 1.6m. Towards the north east end of the trench there was a small pit (1603, Section G). After this was backfilled it was cut by a shallow sided, flat bottomed ditch (1601) running in a curve west-north east which ended in the centre of the trench. The ditch was itself backfilled and then cut by another small pit (1602, Section F).

Fragments of Roman greyware pottery found in the top of the ditch fill (1601/1) were of little use for dating as the surface had been disturbed by plough action and fragments of medieval and post medieval pottery were also recovered from the context.

8.14 Trench 17 (Fig. 1)

Trench 17 was aligned north east-south west at the western end of Field D and measured 30m by 1.6m. A shallow topsoil (1700) directly overlay plough disturbed geological natural and no archaeological features were recognised.

8.15 Trench 18 (Fig. 1)

Trench 18 was aligned north west-south east in the west corner of Field D and measured 30m by 1.6m. Under a shallow topsoil and subsoil (1800, 1801) a large V-shaped ditch (1802), 1.6m deep by 16m wide, running north north east-south south west, contained modern pottery and probably represents a modern gravel pit or drainage works associated with an earlier development of the A45 (see below, 2002, 2102).

8.16 Trench 19 (Fig. 1)

Trench 19 was aligned west north west-east south east along the south west side of Field D and measured 30m by 1.6m. A shallow topsoil (1900) directly overlay geological natural and no archaeological features were recognised.

8.17 Trench 20 (Fig. 1)

Trench 20 was aligned west north west-east south east on the south west side of Field D and measured 30m by 1.6m. Under a shallow topsoil (2000) a large vertical sided pit (2002) cut geological natural. The pit fill (2002/1) contained modern artefacts and the pit was recognised as a feature dug in order to facilitate drainage during an earlier road improvement.

8.18 Trench 21 (Fig. 1)

Trench 21 was aligned west north west-east south east along the south west side of Field D and measured 30m by 1.6m. Under a shallow topsoil (2100) a large shallow sided flat bottomed ditch (2102), running north north east-south south west across the trench, cut geological natural. The ditch, which cut the line of a field boundary

shown on an OS map of 1938, was identified by the landowner as a feature dug for road drainage c.1947.

8.19 Trenches 22-25 (Fig. 1)

Trenches 22-25 were spread over the rest of the area within Field D affected by the proposed development. They each measured 30m by 1.6m in area and contained shallow topsoil directly overlying plough disturbed geological natural. No archaeological features were recognised.

9. Wolston Fields Evaluation 1990 (Field E) (Figs. 1, 7)

9.1 As already mentioned no new fieldwork was undertaken in Field E because an evaluation had already been carried out in September/October 1990 by the Warwickshire Museum, on behalf of ECC Construction Materials, over an area of land at Wolston Fields Farm including this field (Warwickshire Museum 1990). This evaluation involved fieldwalking, geophysical survey and a programme of trial trenching.

9.2 Within the current proposed improvement area the fieldwalking survey produced a scatter of over twenty fragments of Neolithic and Bronze Age flint as well as a small quantity of post medieval pottery (Warwickshire Museum 1990, 16, 18).

9.3 The geophysical survey (Appendix D) by A. Bartlett and B. Turton covered 16 contiguous 30m squares in the southern corner of Field E (Fig. 1). Preliminary magnetic susceptibility tests had shown that this area contained a concentration of higher susceptibilities. The magnetometer survey detected a number of pit and ditch-like features covering most of the area surveyed. They included a linear anomaly to the west, perhaps a large enclosure ditch, as well as two smaller circular features to the south which may represent smaller enclosures or houses.

9.4 The trial trenching programme (Fig. 1) included six full trenches measuring 1.6m by over 30m aligned NW-SE and the SE end of two more trenches of similar size and orientation within the present improvement area. Only three trenches contained archaeological features (Trenches WF19, WF21 and WF 23) and only these are discussed in the following text. A more detailed account of each feature is available in Appendix E and full details are available from the site archive at the Warwickshire Museum. The descriptions in Appendix E need to be read in the light of the later pottery report (Elsdon 1990) which redated the features to the Late Bronze Age/early Iron age rather than the Iron Age.

9.5 Trench WF19 (Fig. 7)

Trench WF19 contained three subcircular pits in its NW half (WF1901-1903), a narrow gully running SE-NW in its SE half (WF1905) and a large ditch running NE-SW across its centre (WF1904). The gully was of modern date, possibly a drain or a former field boundary, whilst the pits probably represent a large post hole (WF1901) and storage pits (WF1902, WF1903), and the ditch (WF1904) a boundary of early, possibly Bronze Age date. Interpretation remains tentative as none of the features was fully excavated.

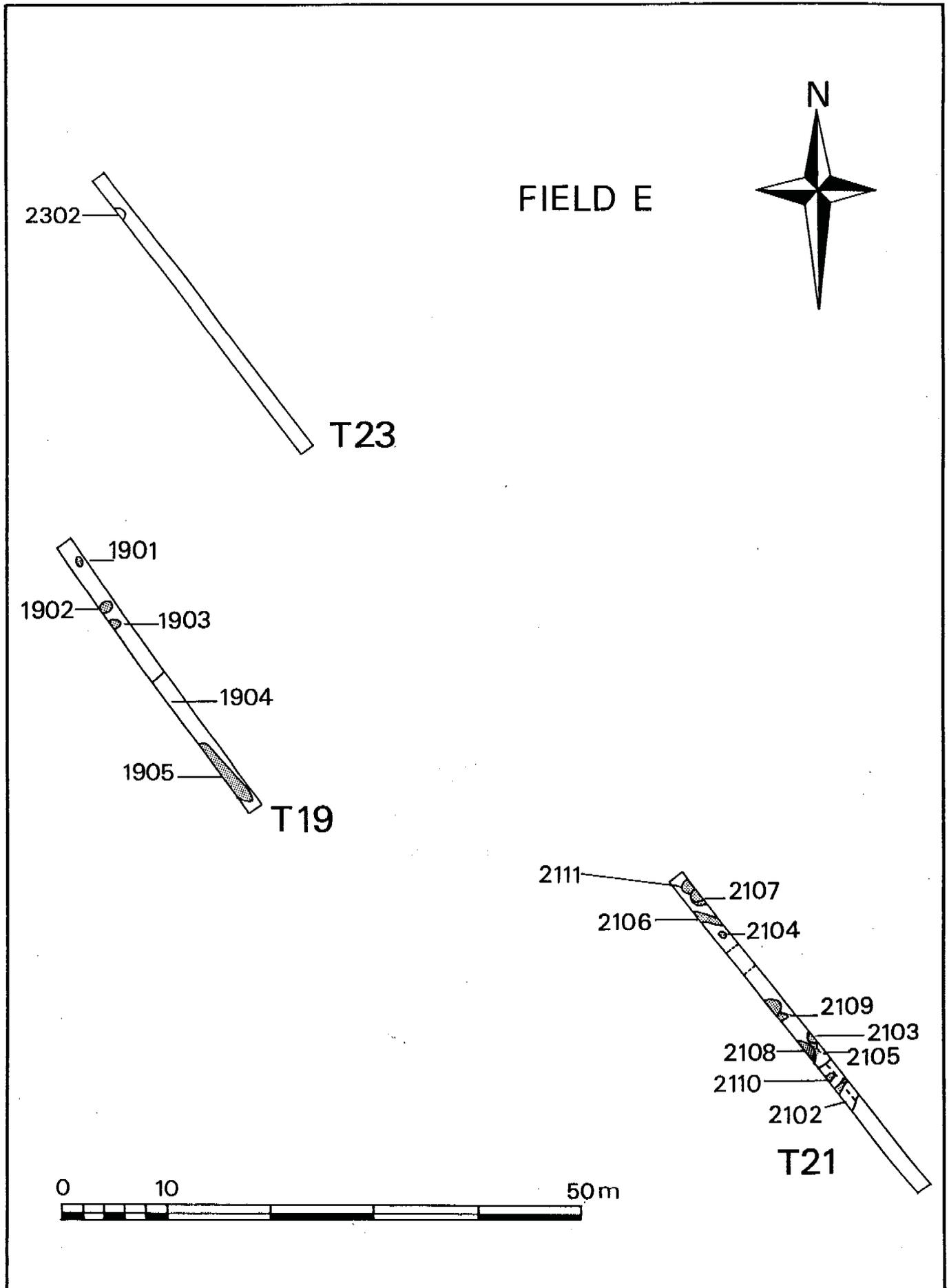


Fig. 7: Wolston Fields Evaluation Trenches WF19, WF21 and WF23, Plan

9.6 Trench WF21 (Fig. 7)

Trench WF21 provided the greatest concentration of archaeological features in the area of the proposed development. These were made up of a series of probable storage pits (WF2103, WF2107 etc), post holes (WF2104, WF2110), ditches (WF2102, WF2113 etc) and other features including a floor surface (WF2105) and a possible boundary bank (WF2116). The trench also contained a considerable concentration of Late Bronze Age/early Iron Age pottery directly associated with the aforementioned features.

9.7 Trench WF23 (Fig. 7)

Trench WF23 contained a single archaeological feature, a shallow pit (WF2302) cutting geological natural, from which was recovered more pottery of Late Bronze Age/early Iron Age date.

9.8 The fieldwork thus revealed an extensive Late Bronze Age/early Iron Age settlement. The pottery (Elsdon 1990) suggesting a date range of 800-500BC. The trial trenching appears to suggest that the main focus of the settlement lay in the vicinity of Trench WF21. The dense occupation extended westwards as far as Trench WF19 over the area occupied by the smaller magnetometer enclosures but appears to have faded out towards the north and north west. The magnetometer survey however indicates that there were features to the north west around Trench WF23 and northwards from Trench WF21 up to the edge of the proposed improvement area.

10. Significance of the Surviving Archaeological Remains in the Improvement Area

10.1 The proposed road improvements would thus affect two main areas of archaeological significance. To the east there is part of a Late Bronze Age/early Iron Age settlement, while to the west there is part of the medieval settlement of Ryton-on-Dunsmore. The proposals would also affect areas of medieval ridge and furrow field system, but apart from that in Field A, which is relatively little affected, these are too poorly preserved to constitute a significant constraint.

10.2 The archaeological significance of the two areas of remains can be measured in relation to the criteria set out in DoE 1990 (Annex 4, quoted in DoTp 1993, Sect. 3, Pt. 2, Annex II).

10.3 The Late Bronze Age/early Iron Age settlement is of considerable significance. The 1990 Evaluation (Warwickshire Museum 1990, 19) concluded that it was an area of high significance containing archaeological features of high potential which should be excluded from the extraction scheme or subject to thorough and extensive investigation before extraction. The redating of the pottery to the Later Bronze Age/early Iron Age strengthens this judgement as few sites of this precise date are known in the county or in the Midlands region.

The surviving features are reasonably well preserved. They have been affected by medieval ridge and furrow cultivation, but while some parts have been eroded by furrows, the build up of ridges has protected the surviving remains from modern cultivation (Warwickshire Museum 1990, 13).

The importance of the settlement is increased by its context, as it forms an element in an extensive later prehistoric landscape pattern covering the area of Dunsmore. This consists of a network of settlements on Dunsmore Gravels divided by a network of linear boundaries in the form of pit alignments and ditches. The

landscape which is mainly known from air photograph evidence is unique in Warwickshire and is significant in national terms. Its interest is enhanced by the fact that while the area seems to have been densely settled in later prehistoric times much of it appears to have been abandoned in the Romano-British and medieval periods.

10.4 The medieval settlement is also of archaeological significance, but at a somewhat lower level as there are a number of other medieval villages in the immediate vicinity. However the site contains reasonably well preserved remains, including those of timber buildings, and, although probably due to an absence of other research, proven surviving medieval stratigraphy is currently very rare in the area. The particular site is also important for the history of Ryton. Its closeness to the church means that it is likely to be near the original focus of the medieval settlement and contain evidence for the earliest stages of Ryton's development. The area of medieval Ryton has been extensively developed in modern times and few medieval remains are likely to survive elsewhere in the village.

11. Impact of Improvement Proposals

11.1 The parts of the Late Bronze Age/early Iron Age settlement within the improvement area will be largely destroyed as the works require a cutting at this point. Although the geophysical survey suggests that the settlement extends out of the improvement area to the north so that parts will be unaffected by the works, the evidence of the trial trenching is that the area of densest occupation, the focus of the settlement, lies within the zone of destruction.

11.2 The construction of new section of road along the northern side of the churchyard of St Leonard's Church will result in the effective destruction of a strip c.5-10m wide, extending the whole length of the medieval property. The original width of the property is unknown but the zone of destruction is likely to be more than 30% of the original property area.

12. Recommendations for Mitigation

12.1 Since it is not possible to relocate the proposed improvements away from either area of archaeological remains nor to redesign the scheme's vertical alignments so that the remains are not disturbed the main mitigation measures will involve rescue excavation to make a record of the remains before construction.

12.2 The Late Bronze Age/early Iron Age settlement would be investigated by a combination of area excavation and trenching accompanied by sampling for artefactual and environmental evidence.

12.2.1 The excavation would be designed to recover an overall plan of the part of the settlement within the improvement area along with plans of all buildings and other structures. An area over the main focus of occupation, probably covering the equivalent of six or seven 30m squares, would be stripped of topsoil by machine, with further trenching to establish the further limits of the settlement. A sufficient sample of the features revealed would then be hand excavated to establish the character, chronology and phasing of the various elements of the settlement. These features would be recorded using a recognised archaeological recording system, plans and section drawings at an appropriate scale and monochrome and colour photography.

12.2.2 Programmes of artefactual and environmental sampling would also be carried out to elucidate the functional layout, material culture, natural environment and agricultural economy of the settlement. The main emphasis would be on collecting representative assemblages of pottery and other artefacts and on sampling for charred remains. A programme of phosphate sampling would also be carried out to investigate the zoning of activities across the site if conditions proved suitable. Investigation of any waterlogged features found would be given a high priority.

12.3 Because of the lower significance of the medieval settlement a lesser scale of excavation would be required. Limited sample excavation would be accompanied by artefactual and environmental sampling. The aim of the work would be to recover evidence for the occupation sequence of the property, building plans, if possible, and for the economic activities and material culture of the inhabitants.

12.3.1 Two areas, c.7.5m x 20m, one covering the frontage area, the other to the east in the centre of the property, would be stripped of topsoil by machine. A sufficient sample of the archaeological features revealed would then be excavated by hand to establish their character, chronology and phasing. These features would be recorded using a recognised archaeological recording system, plans and section drawings at an appropriate scale and monochrome and colour photography.

12.3.2 The sampling would be designed to elucidate the agricultural economy, natural environment and material culture of the settlement. Representative assemblages of pottery, other artefacts, faunal and charred plant remains would be collected. Should waterlogged features be encountered particular attention would be paid to them.

12.4 Following the completion of the fieldwork stage of the excavations and the preparation of the site archives, an interim report would be produced along with recommendations, devised in consultation with English Heritage, and costings for a programme of post excavation work to lead to appropriate publication of the results of the excavations.

12.5 The archaeological site archives from the excavations, together with the finds (subject to the agreement of the landowners) would be deposited in an appropriate local institution.

12.6 Restrictions would be written into contract documents to prevent the contractor using either the land outside the improvement area to the north of the Late Bronze Age/early Iron Age settlement in Field E or the western part of Field A for site compounds, spoil heaps or quarries or other purposes which would disturb archaeological remains.

Acknowledgements

The Warwickshire Museum is grateful to Mr M.C. Fetherston-Dilke, Mr J. Newton, Mrs L. Pugh and Warwickshire County Council, the landowners and tenants, for their toleration of the disruption caused by the fieldwork.

The earthwork survey was carried out by Peter Moore and excavation by Peter Moore, John Thomas and Kevin Wright under the direction of Stuart Palmer and Christopher Jones. The medieval pottery was examined by Stephanie Ratkai and the flintwork by Dr A. Brown. This report was written by Christopher Jones and Nicholas Palmer with illustrations by Andrew Isham and Peter Moore.

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APPENDIX A: GEOPHYSICAL SURVEY

REPORT ON GEOPHYSICAL SURVEY

RYTON-ON-DUNSMORE

Report number 93/41

Work commissioned by :



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Thornton, Bradford BD13 3EL
Telephone (0274) 835016
Fax (0274) 830212

SITE SUMMARY SHEET

93/41 Ryton-on-Dunsmore

NGR: SP 3874

Location and topography

The survey area lies on the eastern edge of Ryton-on-Dunsmore, Warwickshire, between St Leonard's church and the Vicarage. The area covered by the survey was relatively flat, with the ground cover being short grass.

Archaeology

There are a number of earthworks within the field where the survey was carried out. A linear earthwork is positioned just within the eastern edge of the grid, and is aligned approximately north-south. Other low earthworks may exist within the area covered by the survey. Beyond the eastern edge of the grid there appears to be extensive ridge and furrow.

Aim of Survey

It was hoped that the use of resistance and gradiometer survey would indicate the extent of any archaeology surviving within the survey area.

Summary of Results*

The gradiometer data set is relatively noisy, due to the presence of modern pipes and debris. However, some possible anomalies have been indicated. The resistance data appear to reveal greater evidence for possible structural detail. This is especially true within the northern part of the survey area.

*** It is essential that this summary is read in conjunction with the detailed results of the survey.**

TECHNICAL INFORMATION

The following is a description of the equipment and display formats used in **GEOPHYSICAL SURVEYS OF BRADFORD** reports. It should be emphasised that whilst all of the display options are regularly used, the diagrams produced in the final reports are the most suitable to illustrate the data from each site. The choice of diagrams results from the experience and knowledge of the staff of **GEOPHYSICAL SURVEYS OF BRADFORD**.

All survey reports are prepared and submitted on the basis that whilst they are based on a thorough survey of the site, no responsibility is accepted for any errors or omissions.

Magnetic readings are logged at 0.5m intervals along one axis in 1m traverses giving 800 readings per 20m x 20m grid, unless otherwise stated. Resistance readings are logged at 1m intervals giving 400 readings per 20m x 20m grid. The data are then transferred to portable computers and stored on 3.5" floppy discs. Field plots are produced on a portable Hewlett Packard Thinkjet. Further processing is carried out back at base on computers linked to appropriate printers and plotters.

Instrumentation

(a) Fluxgate Gradiometer - Geoscan FM36

This instrument comprises of two fluxgates mounted vertically apart, at a distance of 500mm. The gradiometer is carried by hand, with the bottom sensor approximately 100-300mm from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is conventionally measured in nanoTesla (nT) or gamma. The fluxgate gradiometer suppresses any diurnal or regional effects. Generally features up to one metre deep may be detected by this method.

(b) Resistance Meter - Geoscan RM4 or RM15

This measures the electrical resistance of the earth, using a system of four electrodes (two current and two potential.) Depending on the arrangement of these electrodes an exact measurement of a specific volume of earth may be acquired. This resistance value may then be used to calculate the earth resistivity. The "Twin Probe" arrangement involves the pairing of electrodes (one current and one potential) with one pair remaining in a fixed position, whilst the other measures the resistance variations across a fixed grid. The resistance is measured in Ohms and the calculated resistivity is in Ohm-metres. The resistance method as used for area survey has a depth resolution of approximately 0.75m, although the nature of the overburden and underlying geology will cause variations in this generality. The technique can be adapted to sample greater depths of earth and can therefore be used to produce vertical "pseudo sections".

(c) Magnetic Susceptibility

Variations in the magnetic susceptibility of subsoils and topsoils occur naturally, but greater enhanced susceptibility can also be a product of increased human/anthropogenic activity. This phenomenon of susceptibility enhancement can therefore be used to provide information about the "level of archaeological activity" associated with a site. It can also be used in a predictive manner to ascertain the suitability of a site for a magnetic survey. The instrument employed for measuring this phenomenon is either a field coil or a laboratory based susceptibility bridge. For the latter 50g soil samples are collected in the field.

Display Options

The following is a description of the display options used. Unless specifically mentioned in the text, it may be assumed that no filtering or smoothing has been used to enhance the data. For any particular report a limited number of display modes may be used.

(a) X-Y Plot

This involves a line representation of the data. Each successive row of data is equally incremented in the Y axis, to produce a stacked profile effect. This display may incorporate a hidden-line removal algorithm, which blocks out lines behind the major peaks and can aid interpretation. Advantages of this type of display are that it allows the full range of the data to be viewed and shows the shape of the individual anomalies. Results are produced on a flatbed plotter.

(b) Dot-Density

In this display, minimum and maximum cut-off levels are chosen. Any value that is below the minimum cut-off value will appear white, whilst any value above the maximum cut-off value will appear black. Any value that lies between these two cut-off levels will have a specified number of dots depending on the relative position between the two levels. The focus of the display may be changed using different levels and a contrast factor (C.F.). Usually the C.F. = 1, producing a linear scale between the cut-off levels. Assessing a lower than normal reading involves the use of an inverse plot. This plot simply reverses the minimum and maximum values, resulting in the lower values being presented by more dots. In either representation, each reading is allocated a unique area dependent on its position on the survey grid, within which numbers of dots are randomly placed. The main limitation of this display method is that multiple plots have to be produced in order to view the whole range of the data. It is also difficult to gauge the true strength of any anomaly without looking at the raw data values. This display is much favoured for producing plans of sites, where positioning of the anomalies and features is important.

(c) Contour

This display joins data points of an equal value by a contour line. Displays are generated on the computer screen or plotted directly on a flat bed plotter / inkjet printer.

(d) 3-D Mesh

This display joins the data values in both the X and Y axis. The display may be changed by altering the horizontal viewing angle and the angle above the plane. The output may be either colour or black and white. A hidden line option is occasionally used (see (a) above).

(e) Grey-Scale

This format divides a given range of readings into a set number of classes. These classes have a predefined arrangement of dots or shade of grey, the intensity increasing with value. This gives an appearance of a toned or grey scale.

Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. While colour plots can look impressive and can be used to highlight certain anomalies, grey-scales tend to be more informative.

SURVEY RESULTS

93/41 Ryton-on-Dunsmore

1. Survey Area (Figure 1)

1.1 The approximate position of the survey area can be seen in Figure 1.

1.2 The survey grids were positioned by Geophysical Surveys of Bradford (GSB). Tie-in information has been lodged with Warwickshire County Council (WCC).

2. Display

2.1 The results are displayed at 1:500 in dot density, grey-scale and X-Y formats. These display formats are discussed in the Technical Information section at the end of the text.

3. General Considerations - Complicating factors

3.1 Survey conditions were good, the field being relatively flat and containing no physical obstacles. The ground cover was pasture.

3.2 General debris, including bricks and ferrous material were noted at the field edge. This has produced a high level of noise, especially in the gradiometer data set.

4. Results of the Gradiometer Survey

4.1 The gradiometer results indicate a relatively noisy data set. The disturbance is in part due to a ferrous pipe as well as stray surface and buried material. It is not known if any of the high noise level is due to archaeological material.

4.2 The narrow western section of the survey is particularly disturbed. This high level of noise coincides with an increase in general debris within the survey.

4.3 Two different types of possible archaeological anomalies have been noted, both are to the north of the pipe. While a single pit-type anomaly has been located, two faint linears were also identified. The latter may be the product of ridge and furrow.

5 Results of the Resistance Survey

5.1 Four anomalies have been highlighted on the interpretation diagram. The letters in parenthesis refer to the anomalies noted on the interpretation diagram (Figure 5).

5.2 A north-south linear, low resistance anomaly (A) has been identified and correlates with the earthwork noted above. There are no other similar anomalies within this data set.

5.3 Directly to the west of the linear is a broad area of increased resistance. It is possible that some of the increased resistance may indicate a possible stone structure (B) and an associated rubble spread (C). Filtering of the data has revealed no linear anomalies within the supposed rubble spread.

5.4 It is thought that the gradual increase in resistance in the core of the survey area is geological in origin (D).

6. Conclusions

6.1 The magnetic data set is very noisy and few anomalies of archaeological interest have been identified.

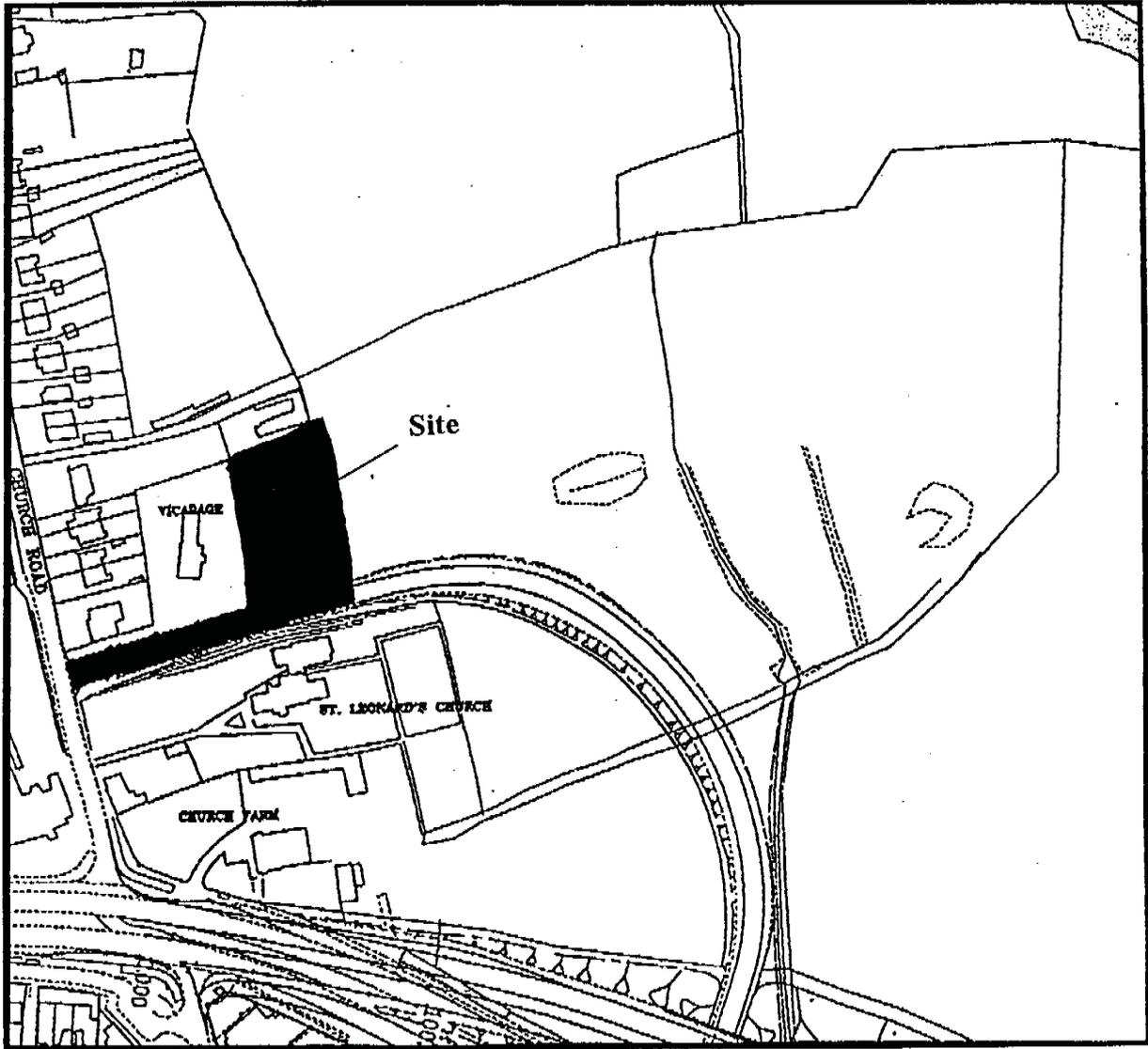
6.2 A number of possible anomalies that may be the product of former structures have been found within the resistance data. The evidence for this interpretation lies within the northern part of the survey.

Project Co-ordinator: Dr C F Gaffney
Project Assistants: N Nemcek and A Shield

Geophysical Surveys of Bradford
19th April 1993

RYTON-ON-DUNSMORE

Approximate Location of Survey Area



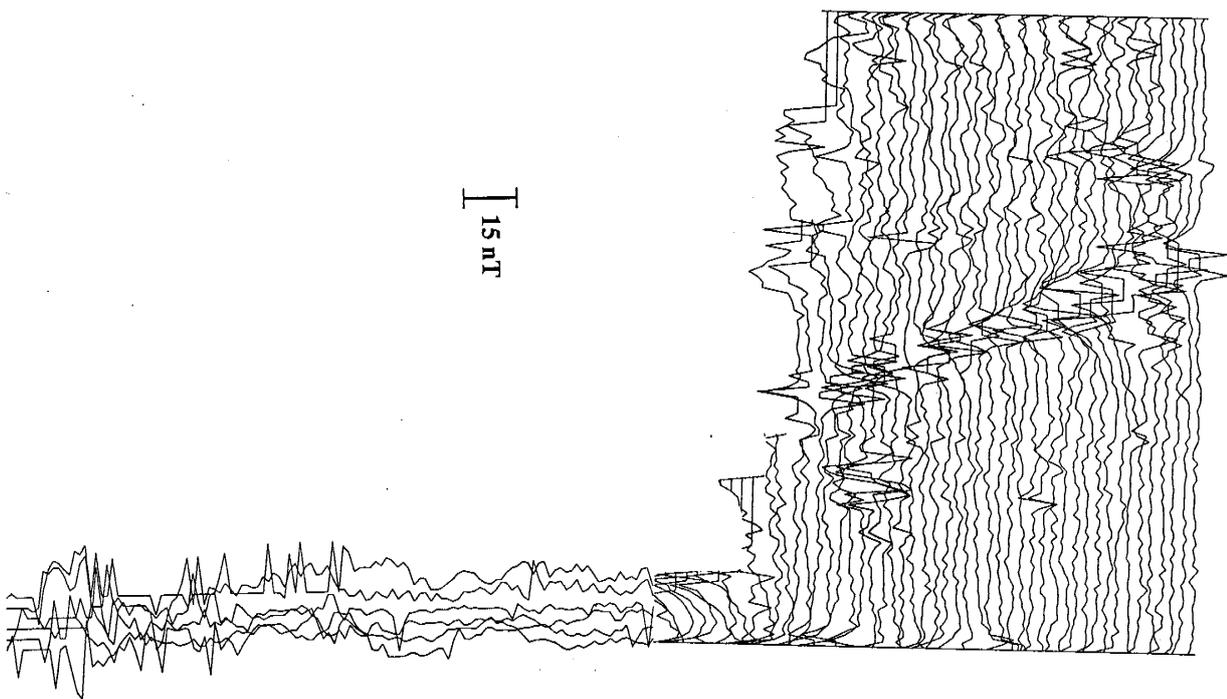
BASED UPON THE ORDNANCE
SURVEY MAP WITH THE PERMISSION
OF THE CONTROLLER OF HMSO
CROWN COPYRIGHT



1:2500

Figure 1

RYTON-ON-DUNSMORE Magnetic Data



15 nT

0
m
20

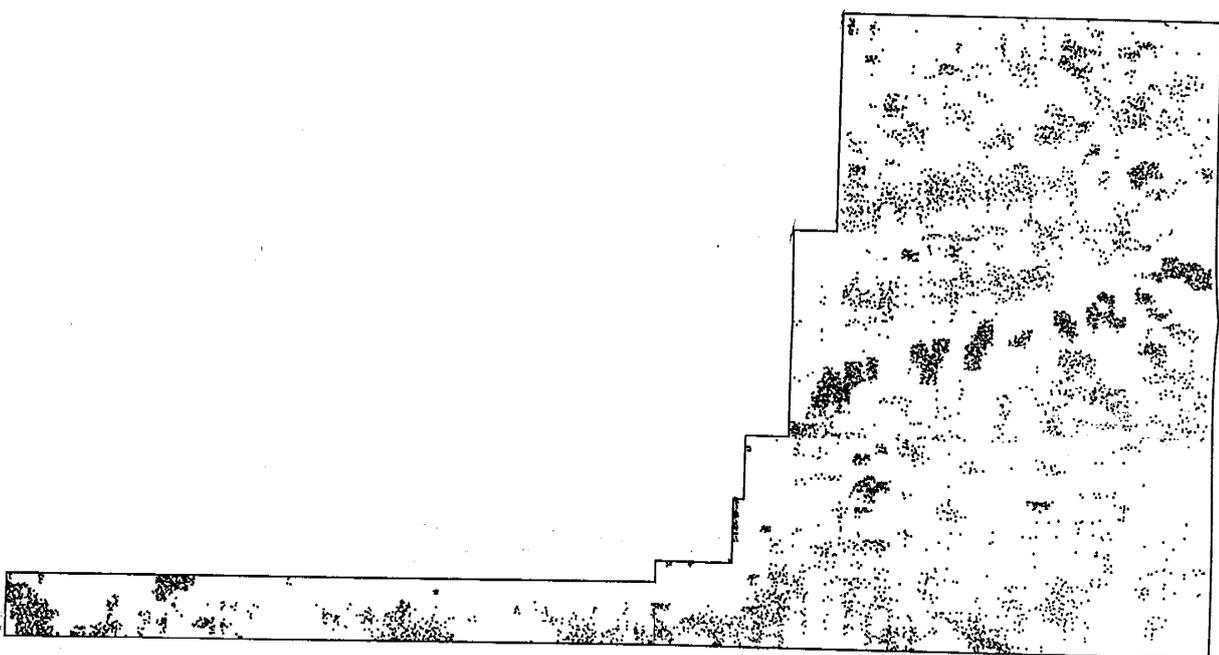


Figure 2

RYTON-ON-DUNSMORE

Magnetic Data

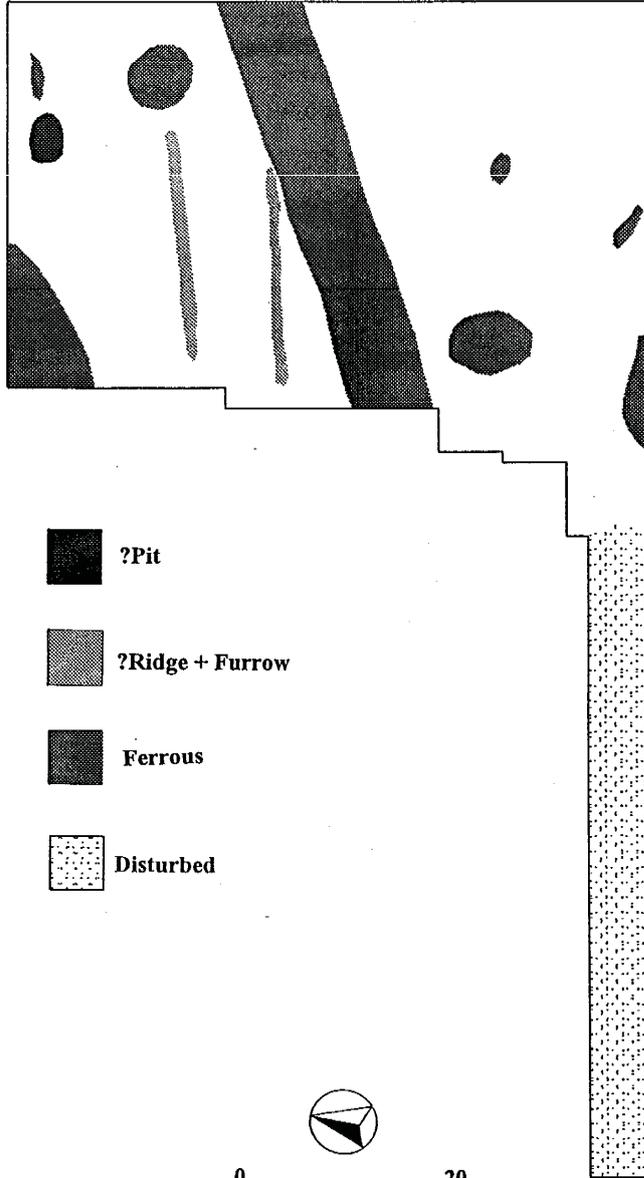


Figure 3

RYTON-ON-DUNSMORE Resistance Data

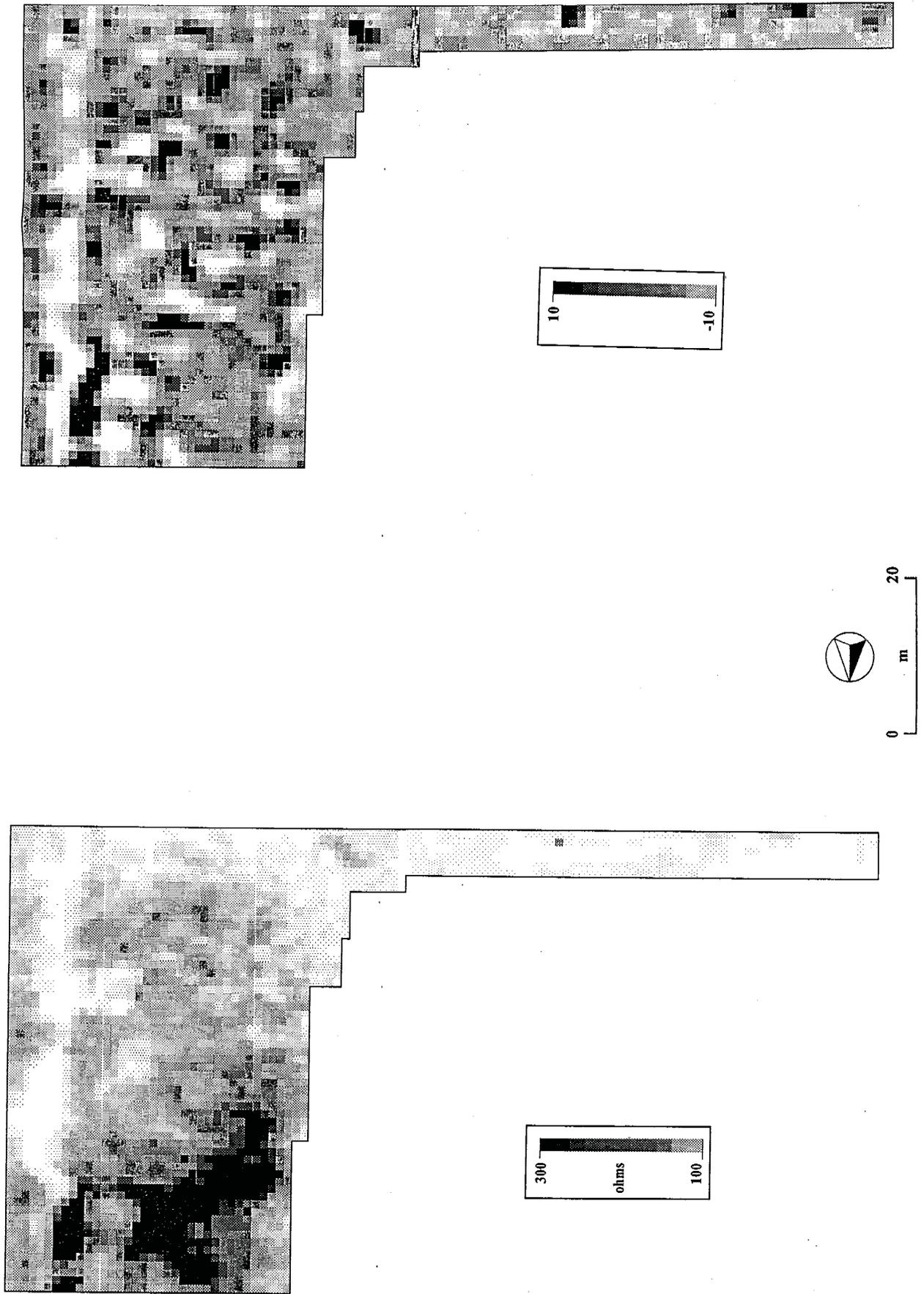


Figure 4

RYTON-ON-DUNSMORE

Resistance Data

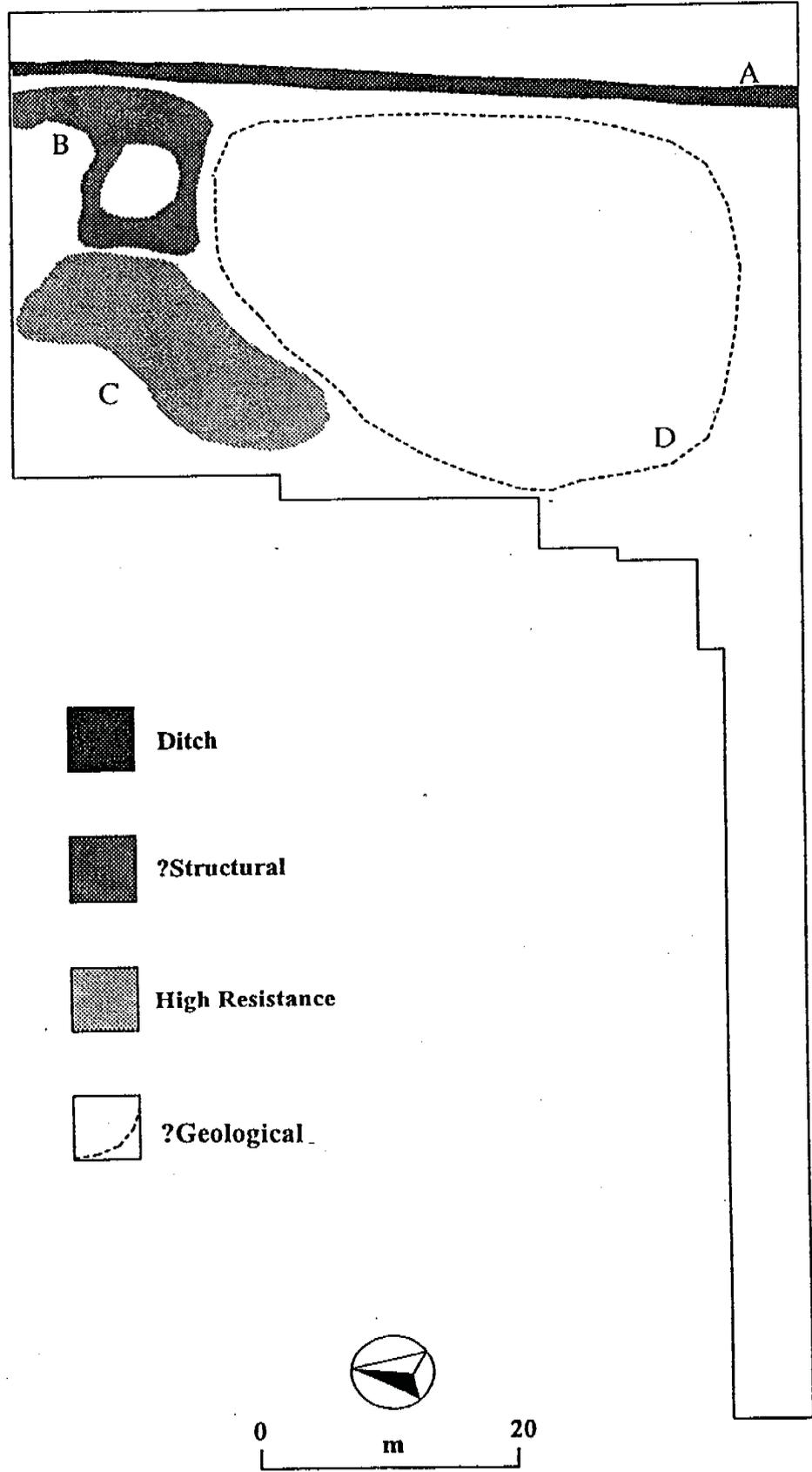


Figure 5

APPENDIX B: LIST OF EXCAVATED CONTEXTS

Appendix B: List of Excavated Contexts

FIELD A

No.	Type	Length	Width	Depth	Description
Trench 1					
100	Topsoil			0.14	Turf and topsoil, dark yellowish brown (10YR3/4) sandy loam.
102	Layer			0.30	Layer of strong brown (7.5YR5/6) sandy loam with 5% gravel in top of ditch 103.
103	Ditch			1.30	Steep sided ditch with V-shaped bottom.
103/1	Ditch fill			0.25	Grey (5Y5/1) clay with some gravel in bottom of ditch.
103/2	Ditch fill			0.30	Dark brown (7.5YR4/3) clay with mottles of grey clay and some gravel.
103/3	Ditch fill			0.18	Dark brown (7.5YR4/4) (sandy) clay loam with 1% gravel.
103/4	Ditch fill			0.60	Brown/dark brown (10YR4/3) sandy clay loam with 5% gravel.
103/5	Ditch fill			0.17	Brown/dark brown (7.5YR4/4) (sandy) clay with 10% gravel.
104	Furrow			0.14	Ploughfurrow?, running E-W, gently sloping sides and flattish bottom.
104/1	Furrow fill				Brown/dark brown (7.5YR4/3) sandy loam with c.5% gravel.
105	Gully	0.60		0.18	Gully with steep sides and U-shaped bottom.
105/1	Gully fill				Brown/dark brown (7.5YR4/3) sandy loam with some gravel.
106	Gully	0.40		0.08	Gully running N-S, gently sloping sides and flattish bottom.
106/1	Gully fill				Brown/dark brown (7.5YR4/4) sandy clay loam with sparse gravel.
107	Gully	0.75		0.09	Shallow gully/hollow.
107/1	Gully fill				Dark yellowish brown (10YR4/4) sandy loam with sparse gravel.
108	Hollow			0.03	Amorphous very shallow hollow. Not fully excavated.
Trench 2					
200	Topsoil			0.22	Dark brown (7.5YR3/2) loam.
201	Layer			0.25	Brown/dark brown (10YR4/3) sandy loam with 10% sandy mottling and some gravel. Subsoil, only present east of ditch 207.

No.	Type	Length	Width	Depth	Description
202	Hollow			0.16	Irregular, sub-rectangular feature with undulating bottom, shallow sloping sides.
202/1	Hollow fill				Dark brown (7.5YR3/2) sandy loam with sparse gravel.
203	Hollow				Hollow with gently sloping sides.
203/1	Hollow fill				Olive brown (2.5Y4/3) clay with 2-3% gravel.
203/2	Hollow fill				Dark greyish brown (10YR4/2) sandy clay loam with some gravel and charcoal flecks.
204	Posthole			0.08	Small rounded posthole with moderately sloping sides and flat bottom.
204/1	Posthole fill				Dark greyish brown (10YR4/2) sandy clay loam.
205	Posthole			0.08	Rounded posthole with moderately steep sloping sides and flattish bottom.
205/1	Posthole fill				Dark greyish brown (10YR4/2) sandy clay loam.
206	Pit				Large square pit with steep, near vertical, sides and flat bottom.
206/1	Pit fill				
206/2	Pit fill				Very dark greyish brown (10YR3/2) sandy clay loam with sparse gravel.
206/3	Pit fill				Very dark greyish brown (10YR3/2) clay with mottles of brown/dark brown (10YR4/3).
207	Hollow				Hollow with steep sloping sides to east, more gentle to the west, irregular bottom.
207/1	Hollow fill				Dark yellowish brown (10YR4/4) sand.
208	Layer				Layer of strong brown (7.5YR5/6) gravel and sand.
209	Gully				Gully with sloping sides and a flat bottom.
209/1	Gully fill				Greyish brown (10YR5/2) gravel and sandy clay loam (40%).
210	Natural				
211	Posthole				Circular posthole. Unexcavated.
211/1	Posthole fill				Very dark grey (10YR3/4) sandy clay loam with charcoal flecks and sparse gravel.
212	Gully				Narrow, shallow gully with very gently sloping sides and rounded bottom.
212/1	Gully fill				Brown/dark brown sandy loam (10YR4/3) with sparse gravel.

No.	Type	Length	Width	Depth	Description
213	Pipe trench				Water pipe trench running NE-SW.
214	Gully				Narrow gully with fairly steep sloping sides and flat bottom.
214/1	Gully fill				Very dark greyish brown (10YR3/2) sandy clay loam.
215	Postbase				Post pad comprising three medium-large (0.14-0.18m) sandstone rubble blocks.
216	Hollow				Very steep sided, sub-oval hollow with U-shaped bottom.
216/1	Hollow fill				Dark brown (10YR3/3) sandy loam with 1% orange clay mottles and 1% sandstone fragments.
217	Cobbles				Linear spread of cobbling.
218	Layer				Yellowish brown (10YR5/6) sandy gravel with mottles of dark greyish brown (10YR4/2) sandy loam.

Trench 3

300	Topsoil				Topsoil
301	Layer				Ploughsoil.
302	Ditch	2.40		1.00	Steep sided ditch with rounded bottom.
302/1	Ditch fill				

FIELD B

Trench 4

400	Topsoil			0.28	Topsoil
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Trench 5

500	Topsoil			0.27	Topsoil
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Trench 6

600	Topsoil			0.27	Topsoil
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FIELD C

Trench 7

700	Topsoil			0.20	Topsoil
701	Layer			0.10	Subsoil/ploughsoil
702	Field drain	0.13			Field drain running roughly N-S across trench; made up of rounded shaped tiles forming pipe.
703	Field drain	0.20			Field drain running roughly N-S across trench. Made up of shaped tiles with concave interior forming pipe. Damaged by recent ploughing.

No.	Type	Length	Width	Depth	Description
704	Natural				
Trench 8					
800	Topsoil			0.10	Topsoil
801	Layer			0.18	Lower ploughsoil, sandy clay loam with 5% gravel and 2% charcoal flecks.
802	Ditch	1.35		0.20	Shallow sided ditch with flat bottom.
802/1	Ditch fill				Very dark brown (10YR2/2) sandy loam with 30% coal and charcoal, 5% gravel.
803	Pit/hollow	0.77	0.49	0.18	Sub-circular pit/hollow with rounded sides and bottom.
803/1	Pit/hollow fill				Dark yellowish brown sandy clay loam with 5-10% gravel.
804	Natural				
Trench 9					
900	Topsoil			0.25	Topsoil
901	Layer			0.10	Ploughsoil/interface between topsoil and natural, sandy clay loam with 5% gravel and 2% charcoal.
902	Ditch	1.20			Ditch running NW-SE across trench. Continuation of 802, possible drain. Modern, not excavated.
902/1	Ditch fill				Very dark brown (10YR2/2) very sandy loam with 30% coal and 5% gravel.
903	Layer	1.30		0.13	Continuation of 904, initially thought to be fill of ditch. Sandy clay loam with 20% brick, 30% coal and cinders. Modern, mixed and disturbed by recent ploughing.
904	Layer			0.10	Layer of bricks (15%), coal and cinders (80%), appears to have been dumped. Modern, associated with 903.
905	Natural				
Trench 10					
1000	Topsoil			0.35	Topsoil
Trench 11					
1100	Topsoil			0.38	Topsoil
Trench 12					
1200	Topsoil			0.25	Topsoil, dark brown (10YR3/3) sandy loam with 1% gravel and 1% charcoal flecks.

No.	Type	Length	Width	Depth	Description
1201	Furrow	1.00			Furrow of ridge and furrow, shallow sided trench, not fully excavated. Runs c.N-S, forming series with 1202-1204.
1201/1	Furrow fill				Sandy very clayey loam with 30% gravel and 1% charcoal (5YR 4/4).
1202	Furrow	1.25			Shallow sided trench, not fully excavated. Runs N-S, forming series with 1201 and 1203-4.
1202/1	Furrow fill				Sandy very clayey loam with 30% gravel and 1% charcoal (5YR4/4).
1203	Furrow?	2.00	0.10		Shallow sloping, irregular sided ditch. Probable furrow. Forms series with 1201-2 and 1204.
1203/1	Furrow fill				Sandy very clayey loam with 30% gravel and 1% charcoal.
1204	Furrow	2.35			Shallow sided furrow, not deep, running N-S. One of series with 1201-1203.
1204/1	Furrow fill				Reddish brown (5YR4/4) sandy clay loam with 30% gravel and 1% charcoal.
1205	Natural				
Trench 13					
1300	Topsoil			0.35	Topsoil
Trench 14					
1400	Topsoil			0.35	Topsoil
1401	Topsoil			0.35	Topsoil
1402	Pit	0.15	0.85	0.24	Sub-circular pit with shallow sides and rounded bottom.
1402/1	Pit fill				Yellowish red (5YR4/6) sandy loam with 10% gravel and 3% iron pan.
1403	Natural				
FIELD D					
Trench 15					
1500	Topsoil			0.50	Topsoil
1501	Layer				Subsoil/interface between ploughsoil and natural; dark reddish brown sandy loam with 15% gravel and 2% charcoal.
1502	Natural				
Trench 16					
1600	Topsoil			0.30	Topsoil

No.	Type	Length	Width	Depth	Description
1601	Pit/ditch			0.32	Shallow sided pit/ditch with flat bottom.
1601/1	Pit/ditch fill				Dark reddish brown (5YR3/4) sandy loam with 15% gravel.
1602	Pit/hollow	1.25	0.65	0.12	Sub-circular pit/hollow with shallow sides and flat bottom.
1602/1	Pit/hollow fill				Dark reddish brown (5YR3/4) sandy loam with 10-15% gravel.
1603	Pit/hollow	0.60	0.50	0.16	Sub-circular pit/hollow with gently sloping sides.
1603/1	Pit/hollow fill			0.16	Dark reddish brown (5YR3/4) sandy loam with 10-15% gravel.
1603/2	Pit/hollow fill			0.08	Yellowish red (5YR4/6) sandy loam with 20% gravel (redeposited natural).
1604	Layer			0.12	Subsoil/interface between ploughsoil and natural, covering 4m at north end of trench. Sandy clay loam with 20% gravel.
1605	Natural				
Trench 17					
1700	Topsoil			0.30	Topsoil
Trench 18					
1800	Topsoil			0.20	Topsoil
1801	Layer			0.10	Lower ploughsoil/Subsoil. Sandy clay loam.
1802	Pit	16.05		1.60	Shallow sided pit with rounded V-shaped bottom. Modern, possibly a gravel quarry or associated with road drainage as 2002.
1802/1	Pit fill				Dark brown sandy loam with 10% gravel and 2% charcoal, with occasional lumps of sand, gravel and clay natural mixed in.
1803	Natural				
Trench 19					
1900	Topsoil				Topsoil
Trench 20					
2000	Topsoil			0.30	Topsoil
2001	Topsoil			0.30	Topsoil
2002	Pit	4.45		0.95	Sub-circular pit with steep sides and flat bottom.
2002/1	Pit fill				Dark reddish brown (5YR3/4) sandy loam with 10-15% gravel.
2003	Natural				

<i>No.</i>	<i>Type</i>	<i>Length</i>	<i>Width</i>	<i>Depth</i>	<i>Description</i>
Trench 21					
2100	Topsoil			0.30	Topsoil
2101	Topsoil			0.30	Topsoil
2102	Ditch	5.60		0.80	Ditch with rounded sides and flat bottom. According to landowner dug c.1947 for road drainage on line of earlier field boundary.
2102/1	Ditch fill				Strong brown (10YR3/4) sandy loam with 10% gravel.
2103	Natural				
Trench 22					
2200	Topsoil			0.25	Topsoil
Trench 23					
2300	Topsoil			0.32	Topsoil
Trench 24					
2400	Topsoil				Topsoil
Trench 25					
2500	Topsoil				Topsoil

APPENDIX C: LIST OF FINDS

Appendix C: List of Finds

<i>Context</i>	<i>Material</i>	<i>Type</i>	<i>No</i>
FIELD A			
Trench 1			
100	Pottery		8
100	Tile		11
100	Brick		1
100	Glass		1
103/1	Tile		3
103/1	A.Bone		12
103/2	Pottery		2
103/2	Tile		4
103/3	Pottery		2
103/3	Tile		3
103/4	Pottery		4
103/4	Tile		25
103/4	Brick		2
103/4	Claypipe		2
Trench 2			
200	Pottery		1
200	Tile		7
202/1	Pottery		29
202/1	Tile		2
202/1	Slag		2
202/1	Coal		1
203/1	Pottery		4
203/1	Tile		8
203/1	Brick		1
203/2	Pottery		10
204/1	Pottery		1
206/1	Pottery		7
206/1	Tile		16
206/1	Brick		2
206/1	Flint		2
206/1	Claypipe		1
206/1	A.Bone		3
206/1	Mortar		12
206/2	Iron		1
206/2	Pottery		7
206/2	Tile		1
206/2	A.Bone		4
207/1	Pottery		6
207/1	A.Bone		2
208	Iron		2
208	Pottery		20
208	Tile		36
208	Brick		7
208	A.Bone		21
208	Glass		1
212/1	Tile		1
216/1	Tile		2

<i>Context</i>	<i>Material</i>	<i>Type</i>	<i>No</i>
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Trench 3

300	Tile		7
300	Glass		1

FIELD B

Trench 4

400	Pottery		1
400	Tile		3

Trench 5

500	Tile		3
500	Pottery		1

Trench 6

600	Tile		3
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FIELD C

Trench 7

702	Tile		1
703	Tile		2

Trench 8

802/1	Iron		5
802/1	Pottery		1
802/1	Tile		4
803/1	Glass		1

Trench 9

901	Pottery		1
901	Tile		1
901	Brick		1
902/1	Pottery		1
903	Pottery		1
903	Tile		1
903	Claypipe		1
903	Glass		2

Trench 11

1100	Tile		1
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Trench 12

1203/1	Pottery		1
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FIELD D

Trench 15

1501	Pottery		1
1501	Tile		4
1501	Flint		1

<i>Context</i>	<i>Material</i>	<i>Type</i>	<i>No</i>
Trench 16			
1600	Bronze	button	1
1601/1	Pottery		5
1601/1	Tile		1
Trench 18			
1801	Pottery		2
1801	Tile		2
1801	Claypipe		1
1801	Glass		1
1802/1	Pottery		2
1802/1	Tile		1
Trench 19			
1900	Tile		1
1900	Claypipe		1
Trench 20			
2002/1	Iron		1
2002/1	Pottery		4
2002/1	Tile		5
2002/1	Claypipe		2
2002/1	A.Bone		1
2002/1	Slag		1
2002/1	Glass		2
Trench 24			
2400	Tile		3
Trench 25			
2500	Glass		1

**REPORT ON GEOPHYSICAL SURVEY
AT
WOLSTON FIELDS, RYTON-ON-DUNSMORE
WARWICKSHIRE**

October 1990

A.D.H. Bartlett

B.Y. Turton

Wolston Fields, Ryton-on-Dunsmore, Warwickshire

Report on Second Geophysical Survey, October 1990

NG SP 3974

Introduction

This is the second survey commissioned by the Warwickshire Museum Field Archaeological Unit during their archaeological assessment of the the proposed ECC Quarries Ltd Wolston Fields gravel extraction site. The fieldwork for this survey was carried out on 19th October 1990.

The first survey, undertaken in September 1990, confirmed the presence of a cropmark enclosure close to Wolston Fields Farm at the north-eastern end of the area under investigation. Trial trenching by the Archaeological Unit has since shown an additional complex of archaeological features to be present at the south-western extremity of the total area affected by the quarrying proposals, and this second survey was therefore carried out to investigate these findings further.

Survey Procedure

The field procedure on this occasion was similar to that described in the report on the previous survey. Readings were recorded using a fluxgate magnetometer along lines 1m apart located on a 30m grid, and subsequently processed to correct for instrument instability, and to suppress small-scale noise in the recorded response. The results are presented for comparison at 1:500 scale both as graphical and half-tone plots (plans 2 and 3 enclosed). A manual interpretation, in which some of the potentially significant detected features have been marked by shading, has been added to plot 2.

The location of the survey is shown on the enclosed 1:2500 scale map extract (plan 1), where the area of the survey grid has also been shaded to indicate the magnetic susceptibility readings obtained from soil samples collected at the grid intersections. The rather irregular shape of the survey is the consequence of extending the area covered to include the surroundings of each of the backfilled excavation trenches. Details of the measurements taken to fix the grid in relation to the field boundaries can be supplied on request.

Results

Preliminary magnetic susceptibility tests carried out as part of the first survey indicated that the soils in this area, in common with other areas of relatively high ground towards the north-east and south-west of the total site, had considerably higher susceptibilities than those from the lower lying alluvial areas in the centre of the site. Samples previously collected from the 100m OS grid points in the vicinity of the present survey gave readings between 36 and 42 ($\times 10^{-8}$ SI/kg), compared with values of less than 20 from alluvial areas. More detailed sampling carried out at the 30m grid points during the present survey produced a number of higher readings in the range 36 - 85, with a mean of 45. This is only slightly less than the mean of 50 for samples from the previous detailed survey grid at Wolston Farm, and suggests that a similar level of magnetic response should be expected here. This can be seen to be the case in the plots of the magnetometer survey, where again a number of apparently archaeologically significant magnetic anomalies have been detected, although again they are weak, as is often the case on gravel soils.

Various of the detected anomalies are likely to represent man-made ditches or pits, but in some cases categorisation is difficult because there is a very similar response from features of natural origin. The magnetic susceptibility of some of the stones sieved from the soil samples was tested and found to be very much higher than the soils. It seems likely, therefore, that some of the larger stones in the gravel are responsible for many of the stronger and narrower magnetic anomalies seen in the chart (plan 2). Other anomalies, including some of the smaller of the shaded features, are wider and less pronounced and could well represent pits, although more deeply buried stones could in some cases produce similar effects.

A number of ditches appear to have been detected, notably a long curving feature towards the west of the site, which is clearly visible and marked as A on both plots. There is also a rather irregular but approximately circular cluster of strong anomalies at B, and another possible such feature at C, although the anomalies here are weaker, except at the north side. Strong anomalies as seen at B could well indicate ancient habitation, as could the pits. There are also various short fragments of ditch-like features, some of which have been shaded on plan 2. Similar fragmentary features were seen in the previous Wolston Farm survey, where the aerial photograph showed a background of periglacial frost cracking, or similar irregular polygonal disturbances. It is possible therefore that some of the weaker detected features at both sites are of natural origin.

There is a quite well-defined ditch-like feature towards the east of the survey at D, but it is in roughly the position of one of the recent trenches. It could well, however, be a genuine feature, given that deliberately back-filled excavations are rarely seen in magnetic surveys, and that none of the other trenches was detected. The ditch could therefore be archaeological, unless it relates to a former field boundary which is marked on the 1:10000 map (see plan 1 in report of previous survey). It is probably significant that evidence of burning, which is likely to be associated with ancient occupation or industry, was seen in the trench here, and that the highest susceptibility readings (which undergo enhancement in the presence of burnt material in the soil) were obtained from this end of the survey.

Conclusions

The survey detected a considerable number of magnetic anomalies, many of which appear to be archaeologically significant, although geological factors have also contributed to the overall findings. The gravel subsoil provides only a weak magnetic response, and so the plan of the observed features of potential archaeological interest as indicated by shading on plan 2 is likely therefore to be incomplete. The interpretation represents only a conservative selection of stronger features, and it could well be that other weaker anomalies, which cannot clearly be distinguished from the geological background effects, are also significant. The survey results are however fully consistent with the presence of a number of substantial man-made pits and ditches, as was demonstrated by the trial trenching, and the findings also indicate areas where such features may be particularly concentrated.

Surveyed by:

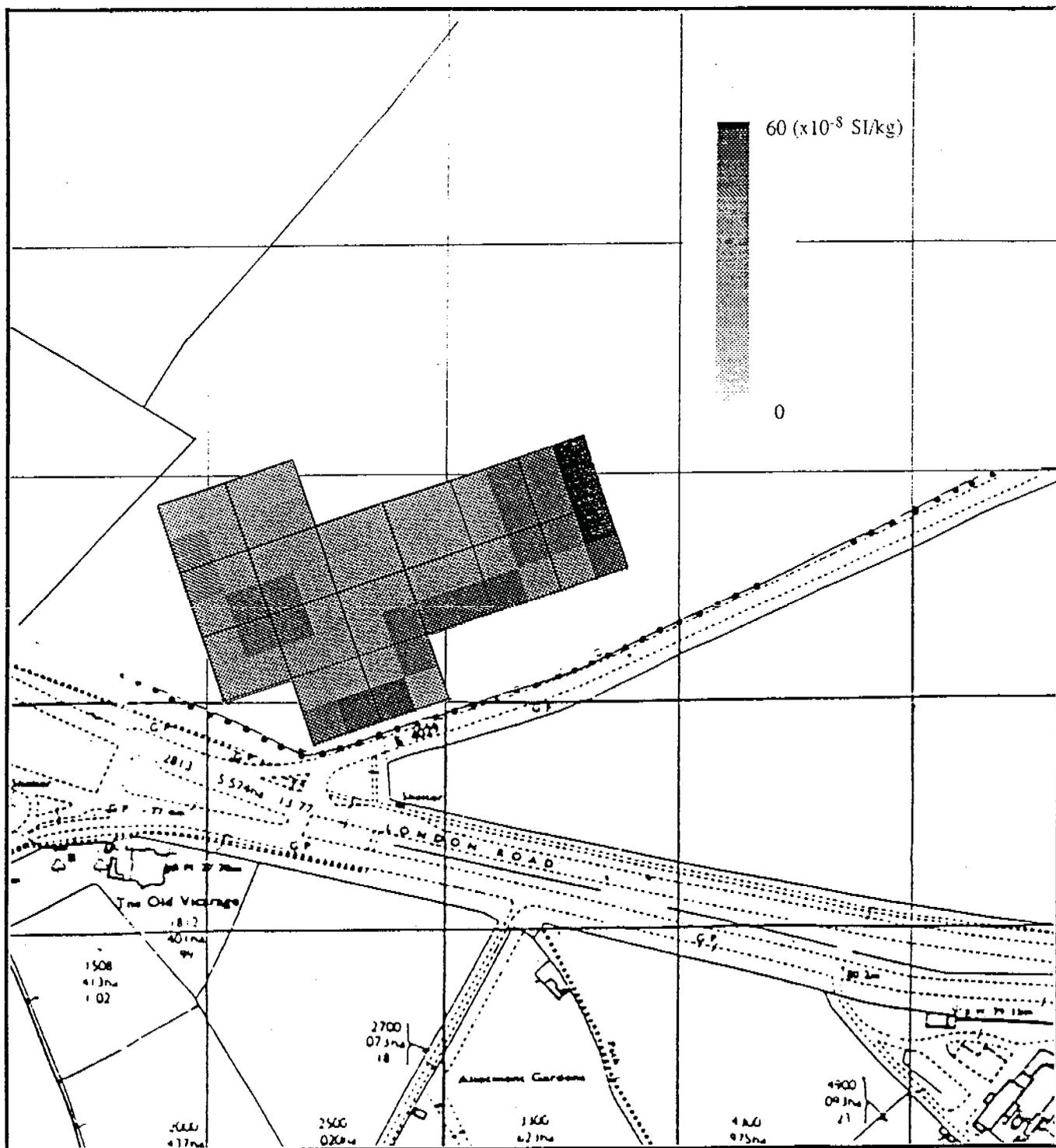
A D H Bartlett BSc MPhil
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with:

B Y Turton MA
47 Ducklington Lane
Witney
Oxon
OX8 7JE (0993 702863)

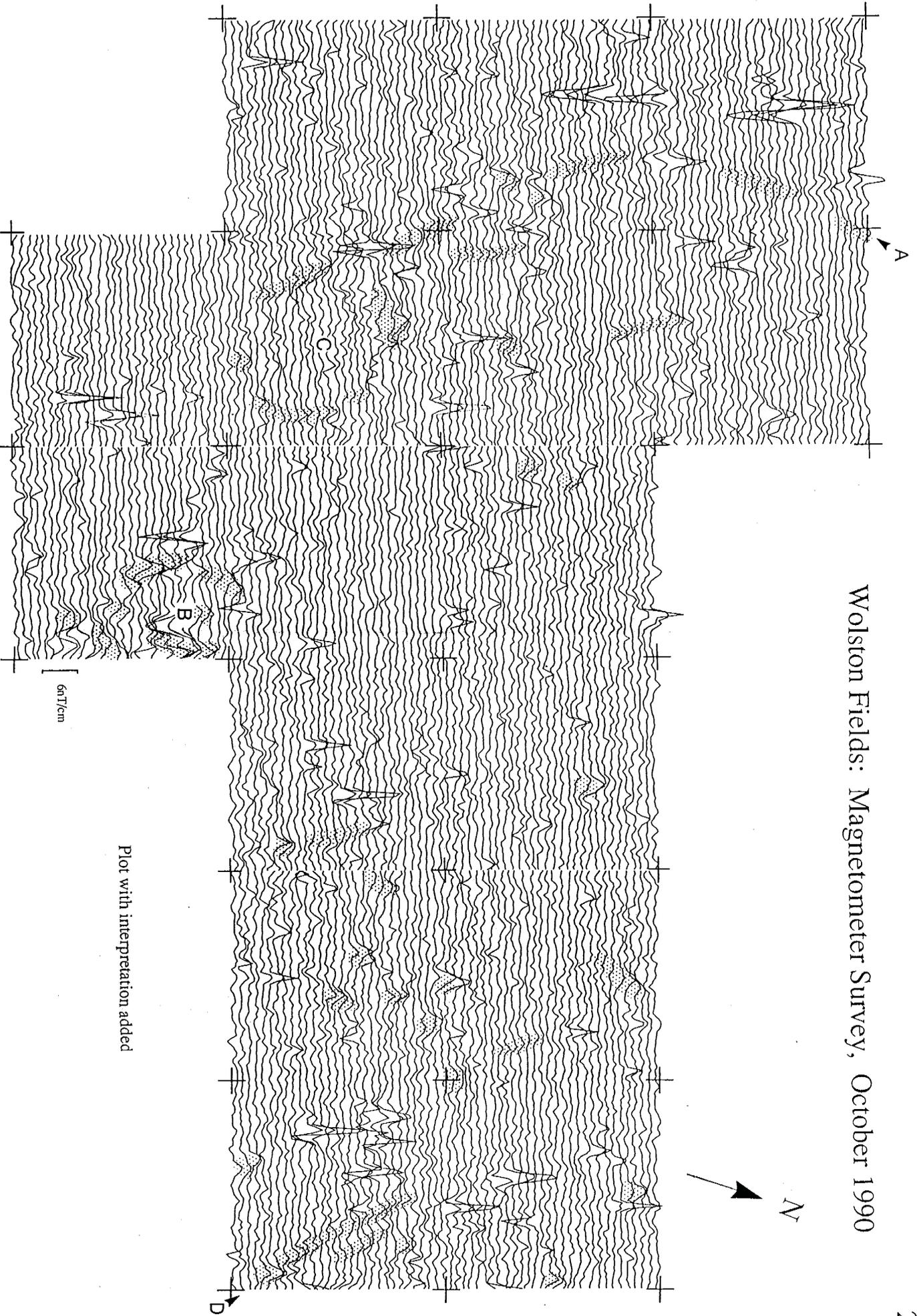
Date of report : 8th November 1990

WOLSTON FIELDS: MAGNETOMETER SURVEY, OCTOBER 1990



Location of magnetometer survey (with magnetic susceptibilities)

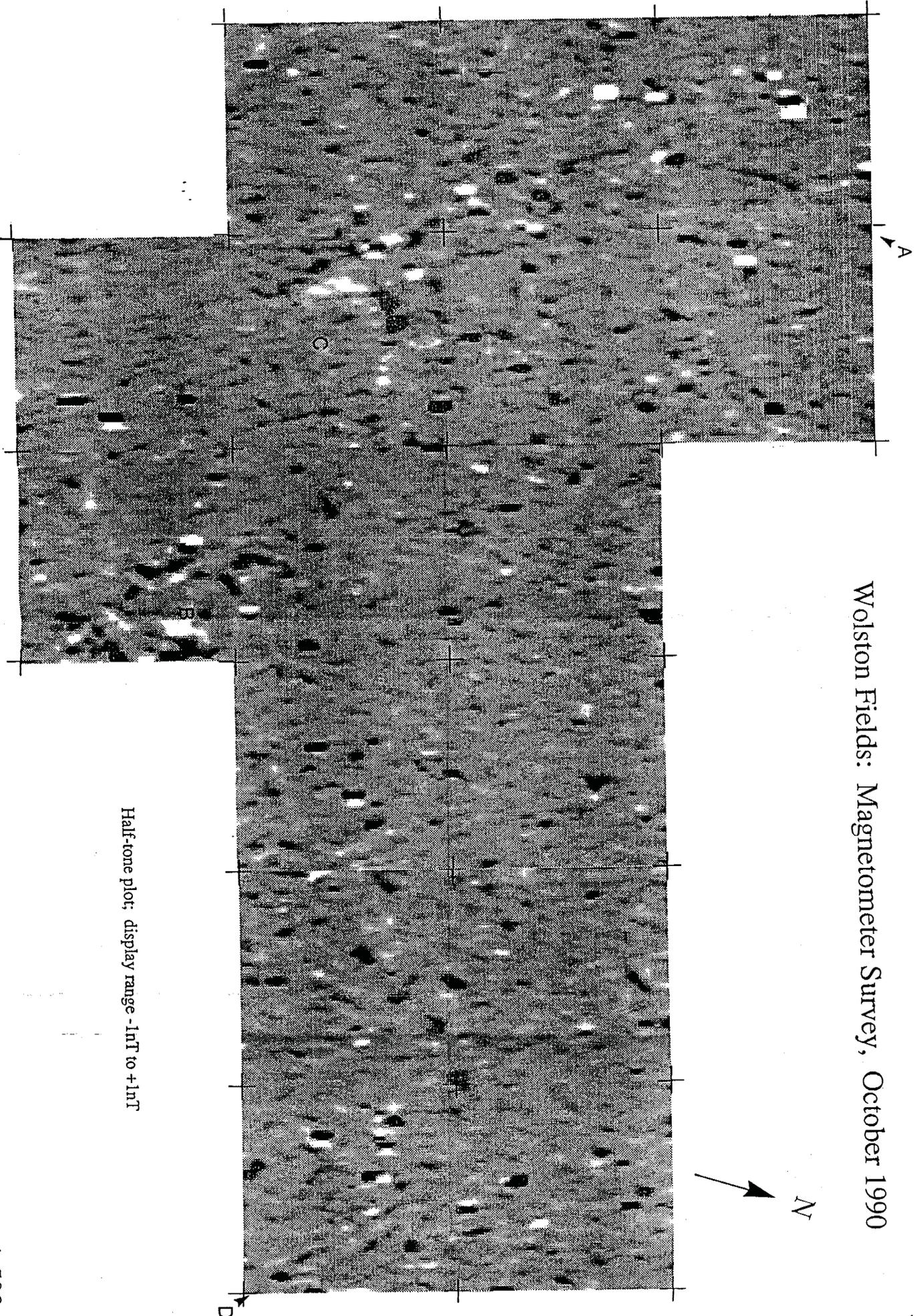
Wolston Fields: Magnetometer Survey, October 1990



Plot with interpretation added

AB

Wolston Fields: Magnetometer Survey, October 1990



Half-tone plot; display range -1mT to +1mT

AB

1:500

APPENDIX E: WOLSTON FIELDS EVALUATION 1990

TRENCHES WF19, WF21 AND WF 23

EXCAVATED CONTEXTS

Wolston Fields Farm 1990: Detailed Description of Features

Trench 19

Feature:	Dimensions:	Type:	Description:
1901	Length: 0.58 Width: 0.42 Depth: 0.00	Pit	Unexcavated. Large posthole.
1902	Length: 1.18 Width: 0.94 Depth: 0.00	Pit	Unexcavated. Length not fully exposed. Possible storage pit.
1903	Length: 0.94 Width: 0.64 Depth: 0.00	Pit	Unexcavated. Width not fully exposed. Possible storage pit.
1904	Length: 1.60 Width: 11.00 Depth: 0.00	Ditch	Unexcavated. Length not fully exposed. Large ditch, similar to 2102 and 2103 in Trench 21. Probably Iron Age.
1905	Length: 7.80 Width: 0.62 Depth: 0.00	Gully	Unexcavated. Length not fully exposed. Modern.

Trench 21

Feature:	Dimensions:	Type:	Description:
2102	Length: 1.80 Width: 2.20 Depth: 1.40	Ditch	Relationship with 2113, 2115, 2116. Length not fully exposed. Recut of Iron Age boundary ditch.
2103	Length: 1.20 Width: 0.88 Depth: 0.46	Pit	Storage pit with Iron Age finds. Width not fully exposed.
2104	Length: 0.60 Width: 0.62 Depth: 0.23	Pit	Small pit, might be related to 2106.
2105	Length: 1.00 Width: 0.50 Depth: 0.00	Layer	Width not fully exposed. Remains of floor/occupation layer.
2106	Length: 2.80 Width: 0.68 Depth: 0.28	Gully	Length not fully exposed. Might be related to 2104. Iron Age finds.
2107	Length: 1.52 Width: 0.00 Depth: 0.71	Pit	Beehive pit with Iron Age finds. Uncertain relationship with 2111.

2108	Length: 0.92 Width: 0.58 Depth: 0.00	Pit	Unexcavated. Width not fully exposed. Probable storage pit.
2109	Length: 1.00 Width: 0.92 Depth: 0.00	Pit	Unexcavated. Width not fully exposed. Probable storage pit.
2110	Length: 0.51 Width: 0.44 Depth: 0.11	Pit	Possibly a posthole dug during infill of ditch. Uncertain relationship with 2113, in which it is situated. Total depth = 0.79
2111	Length: 1.46 Width: 1.28 Depth: 0.00	Pit	Big storage pit, unexcavated. Cuts 2107, and is possibly of the same type. Width not fully exposed.
2112	Length: 0.34 Width: 0.34 Depth: 0.00	Pit	Animal hole ?
2113	Length: 1.60 Width: 0.00 Depth: 1.18	Ditch	Ditch - uncertain relationship with 2110, 2115, 2102 & 2114 (slot). Depth 1.18 (from NW bank to bottom) Depth 0.45 (from SE bank to bottom). Length not fully exposed. Recut of Iron Age boundary ditch.
2114	Length: 1.09 Width: 0.38 Depth: 0.34	Slot	Uncertain relationship with 2113. Length not fully exposed. At bottom of 2113 - possible cleaning slot.
2115	Length: 1.70 Width: 0.75 Depth: 0.26	Ditch	Uncertain relationship with 2113, 2102, 2116. Length not fully exposed. Recut of Iron Age ditch.
2116	Length: 1.60 Width: 1.45 Depth: 0.21	Bank area	Uncertain relationship with 2102, 2113, 2115. Length not fully exposed. Possible bank area.

Trench 23

Feature:	Dimensions:	Type:	Description:
2302	Length: 2.40 Width: 1.00 Depth: 0.13	Hollow	Amorphous feature containing Iron Age pot. Width not fully exposed.