Ironbridge Institute Research Paper No. 41

Duncote Farm
Atcham

An Archaeological Evaluation in advance of the A5 Bypass.

by

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and

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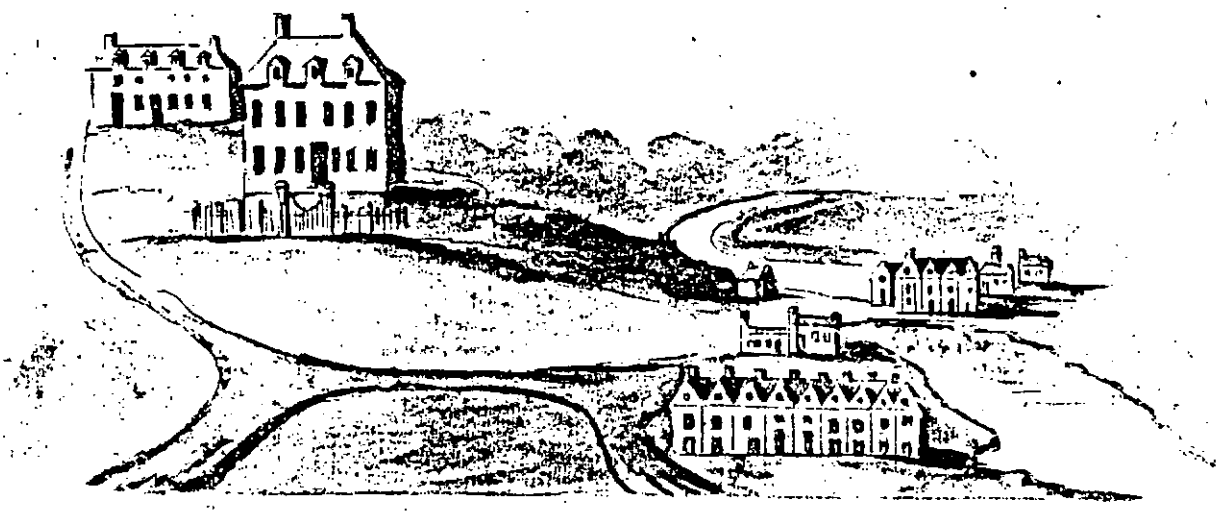
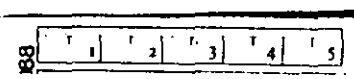
March 1989.

The Ironbridge Institute
Ironbridge Gorge Museum
Ironbridge
Telford TF8 7AW.



View of Tern House and Mill. Ve. 1700.



MS. Top Salop c. 2 fn. 616RA

Frontispiece: "View of Tern House and Mill c. 1700" (Bodleian Library MS Top Salop c. 2 fn 616RA, courtesy of P.Stamper).

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Acknowledgements

This work was undertaken as a field exercise by students of the Ironbridge Institute. Mr and Mrs Jerald Griffiths of Duncote Farm kindly allowed access to their farm, as did Mr Holmes of Upton Forge Farm. Mr Jeremy Milln set up the project, through his concern that the archaeological survey of the road route by Shropshire County Council / BUFAU did not cover the known industrial sites on National Trust land. Michael Watson, the County Archaeologist and Paul Stamper of the Victoria County History provided further information and assistance. Nicola Smith prepared the illustrations for publication.

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Introduction

Duncote Farm is located on the river Tern, a tributary of the Severn, about 6 km to the east of Shrewsbury at 573114. In March 1990, work on the A5 London/Holyhead Trunk road, will begin (S.C.C. 1988). The route will pass east/west across the farm, parallel and just to the south of the present Shrewsbury to Birmingham railway line. The aim of this survey was to assess the impact of the new road on the archaeology of the area.

Duncote Farm lies on a terrace, 8m above the river Tern on the south bank. The river flows south west by the farm across a floodplain between 60 and 200 m wide. On the NW bank of the river there is smaller terrace, with the ploughed land sloping gently to the river. The flood plain is very low lying, and before river management was "liable to flood" (1882, 25in OS map). Upton Forge Farm sits on the north terrace of the river. The railway line crosses the floodplain on a high embankment, and the river itself on a brick bridge of three arch spans. The line of the new road will therefore cross the floodplain adjacent to the railway line, cutting off Duncote and Upton Forge Farms from the railway line and fields to the north.

There were two principal areas of interest. The first was at Duncote Farm itself, where the course of the river Tern has been modified, and, for which there is documentary evidence for a mill site, from at least the 12th century. Surface distribution of iron slag also suggested industrial activity. Archaeological survey suggests that the southern limit of the road will cut across the area of this mill. PRN 04321

The second major site lies on the north bank of the Tern, where the road will destroy a substantial ironworking site situated on the terrace,. The site was fed by a leat that takes off from the river higher up, and which was the main water source for Upton Forge. Surface pottery, 18th century bricks and "stamping and potting" slag fragments indicate that this ironworks was in operation in the late 18th century, and formed part of the ironworking complex associated with Upton Forge. Upton Forge was one of the largest forges in the country, with, in 1711, an annual output of 200 tons, and which gained particular fame as the works which forged the iron links used in the construction of Telford's Menai Bridge. PRN 04320 (PRN 01613)

Figure Two: "Carte Topographique de la Comte de Salop ou Shropshire" by John Roque, 1752 (SBL).

Section One: Historical background

PRN 00066

The Roman road between Wroxeter and Chester crossed the River Tern at Duncote. The road can be traced from field evidence, from Wroxeter through Norton and Uckington. It then heads due north, crossing the river Tern, following the river bank for a short distance and then continuing north along the line of the Withington / Upton Magna parish boundary (VCHi). There is no archaeological evidence for the nature of the river crossing - either as a ford or bridge. However, it was a major road, and a substantial auxilliary fort is located 500 m to the north east of Duncote , brief records of which are held by the National Trust.

PRN 04321

The present course of the River Tern in the area of Duncote farm is recent, dating to c. 1930 when the river was diverted to the west, thus cutting off the earlier bend. This earlier course of the river ran due south (almost south east) from the railway bridge, turning due west at the island. The sharpness of the bend in an otherwise flat, alluvial landscape suggests some artificial diversion of the river from a natural alignment perhaps similar to the present route. However, as the parish boundary follows the earlier bend in the river, it is likely that this alignment dates to at least the twelfth century and almost certainly from late Saxon times.

There was certainly a mill at Duncote by the twelfth century. Before 1180, the watercourse between "Ardif's fishery at Uckington and the abbot of Lilleshall's mill at Duncote" was subject to an agreement whereby the Abbot paid 12d per year for the use of the water (Eyton viii:237). The Domesday survey listed a mill at 16s and "a fishery which pays what it can" at Upton Magna (Thorn 1986:4,3,24), that may have been either at Upton Magna Forge or Duncote.

By 1650 there were two mills at Duncote which Robert Lister of Duncott Millne, Yeoman, leased from William Berker of Adbright Lee esq. and Thomas Berker, his son and heir. The lease was for,

"a messuage or dwelling house with orchard adjoining within the township of Uckington and two water corn mills called Duncott Mills, with all land situate in the township of Uckington - viz. two parcels of land called the Tam tree (?) Leasowes adjoining grounds called Warren; parcel of land called the Broomey Knobl; parcl of ground called the Moore banck; parcel of ground called the Moore meadowe adjoining on the south side to a river called Tearne; meadow called Mill Meadowe adjoining side of said river;.. parcel of land called the slang adjoining the said house; parcel of land called the lane extending to the Alveley Heath, in free liberty to dig, get, take and carry away turffe and Furres for the reparation of the dammes belonging to the said mills, in and upon Alveley Heath during the term hereafter mentioned, and all buildings, millstones, wheels, mulcture, dammes, stankes, pondes etc belonging to the said mills... to hold from Ladyday last for a term of 99 years or lives of the said Robert Lister and his sons Thomas and George" at a rent of £16". (SRO Turnbull Collection, 1502/12)

The river Tern, and its tributaries, the Meese and the Roden, provided a source of water power for numerous eighteenth century ironworking enterprises. Details of these come from several lists, compiled in 1717 and 1720, 1736 and 1750 (Hulme 1928). The list for 1717 for Shropshire gives the following sites (those on the Tern are in italics).

Cleobury (Teme)
Longnor (Cound Brook, Severn)
Upton (Tern)
Shenton (Severn?)
Colbrookdale
Withy ford (Tern)
Morton (Moreton Corbet, Roden)
Kaynton (Meese)
Sambroke (Tributary of Meese)
Norton
Winnington (?Tern)
Prescott

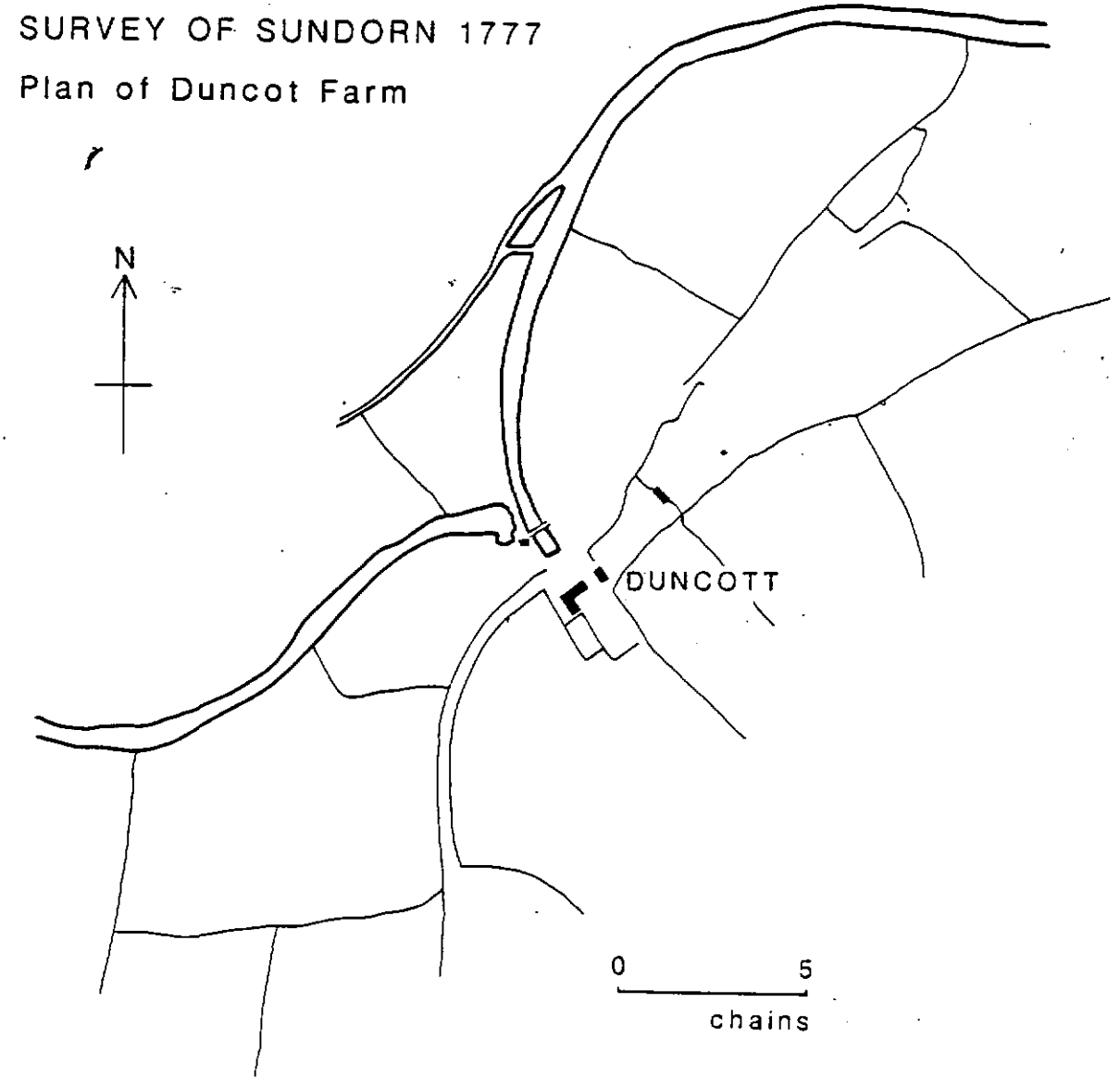

Figure Three: 1777 A survey of the Sundorn Estate , "Plan of Duncote Farm in the Township of Uckington" (SRO 3182/1 Br V1 9.1. 6)

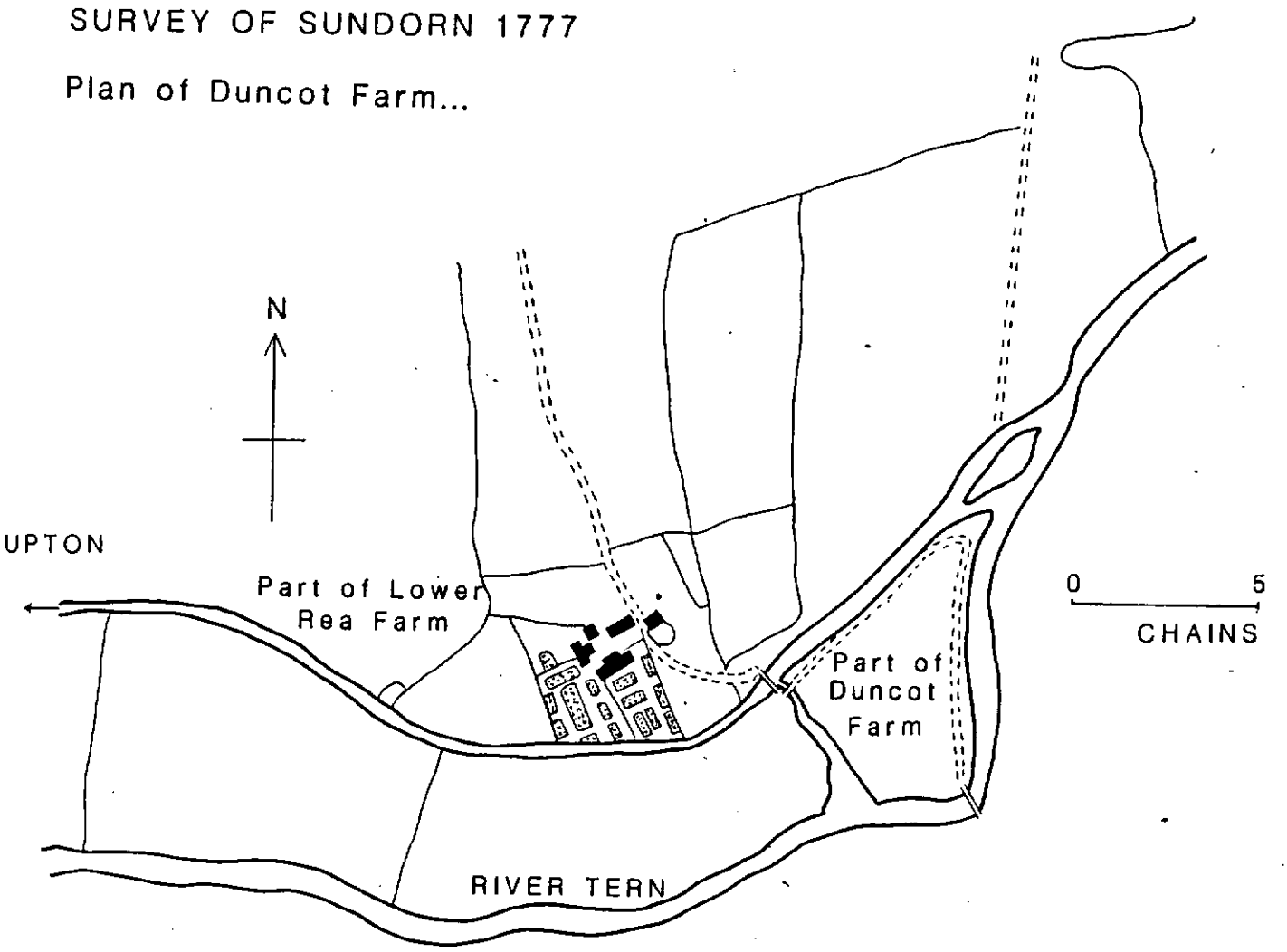

Figure Four: Survey of Sundorn Estate, 1777. (SRO 3182/1)

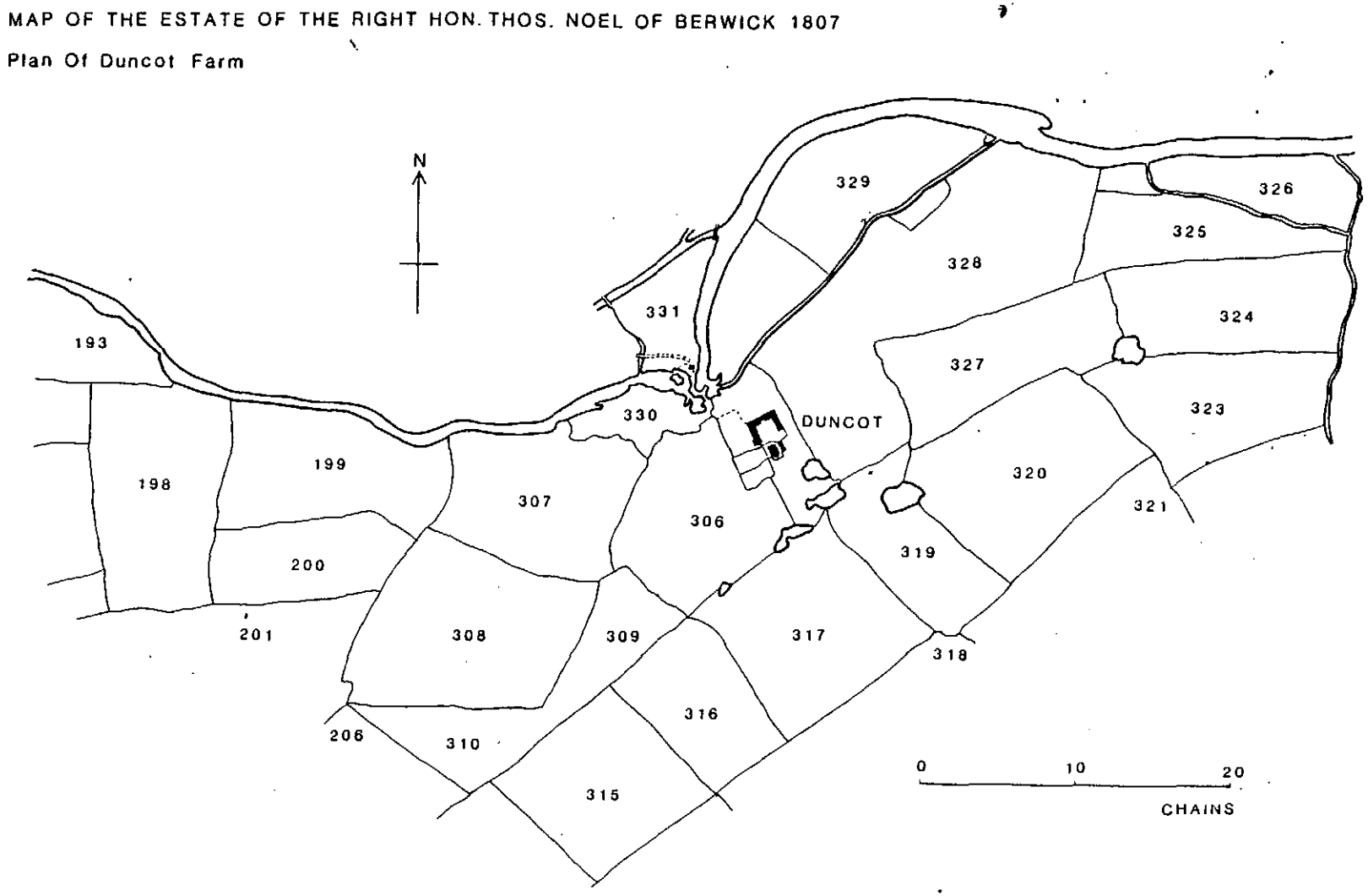

Figure Five: "Map of the Estate of the Rt. Hon. Thos. Noel, Lord Berwick, in the township of Atcham ....." 1807 (SRO 112/ Map and Salt (add) Coll 3651).

Pitchford

None of the lists give Duncote as a forge or ironworking site. However Duncote mill was on several occasions leased with Upton Forge, and it is likely that the two sites were considered as one. Upton Forge began operations in 1654, and by the 1680s was part of a group of ironworking sites which included Leighton Furnace. Both Upton Forge and Duncote mill belonged to the Corbett family, and were worked in the 1730s and 40s by Joshua Gee of Tern Forge, in 1750 by Francis Dorsett, later by the Hallens and c. 1800 by William Hazeldine (Denton & Lewis 1977:58). One source implies that there were associated ironworking buildings extending 2 miles upstream of Upton Forge, and this would include Duncote. PRN 01613 PRN 04320

The section of the Shrewsbury canal leading to Berwick wharf, opened in 1796, runs east west across the area, to the north of what is now Rea Farm (Trinder 1981:85). The Shrewsbury to Birmingham which cuts through Duncote farm, opened in 1849.

MapEvidence

We have been able to locate a number of county, estate and parish maps that provide detailed information on the course of the river, and the location of associated buildings.

1752 Roque's Map of Shropshire

Upton forge is marked, as is Duncote. The Roman road still remains in use, and crosses at Duncote. Four buildings are shown at the crossing, but these are certainly idealized.

1777 A survey of the Sundorn Estate (SRO 3182/1 Br V1 9.1. 6)
"Plan of Duncote Farm in the Township of Uckington"

PRN 04324

This is the first available detailed map of Duncote. It shows the river is the same position as in 1882 OS map, with a sharp turn at Duncote. There is a solid dam across the river, linking the two islands. It also shows a bridge, presumably the present arched bridge, and a small building on the site of the "White Cottage". Two leats are shown, one to Duncote and another on the north bank to Upton Forge with a return to the Tern close to Duncote.

Untitled

This shows the holdings on the north bank. The leat to Upton Forge is shown, with a return to Duncote. The triangle of land formed was part of Duncote Farm (and this continues to be part of Duncote to this day). On the north side of the leat to Upton Forge is a group four buildings with gardens (mentioned in the apportionment as tenements and gardens). Two buildings are shown as "T" shaped structures.

1807 "Map of the Estate of the Rt. Hon. Thos. Noel, Lord Berwick, in the township of Atcham ....." (SRO 112/ Map and Salt (add) Coll 3651). PRN 04324

A very detailed map, that shows the two leats on either side of the river. Of interest is the arrangement at Duncote, where the two bridges are clearly shown is their correct relationship, with a pool banking up behind a dam south of the river, fed by the southerly leat. There is a building on the north bank, on the site of the White Cottage, recorded in the 1882 OS map.

c.1808 Robert Baugh's Map of Shropshire

Highly idealised, the map marks Upton Forge and a single building at Duncote, but gives no hint of a forge on the other side of the river.

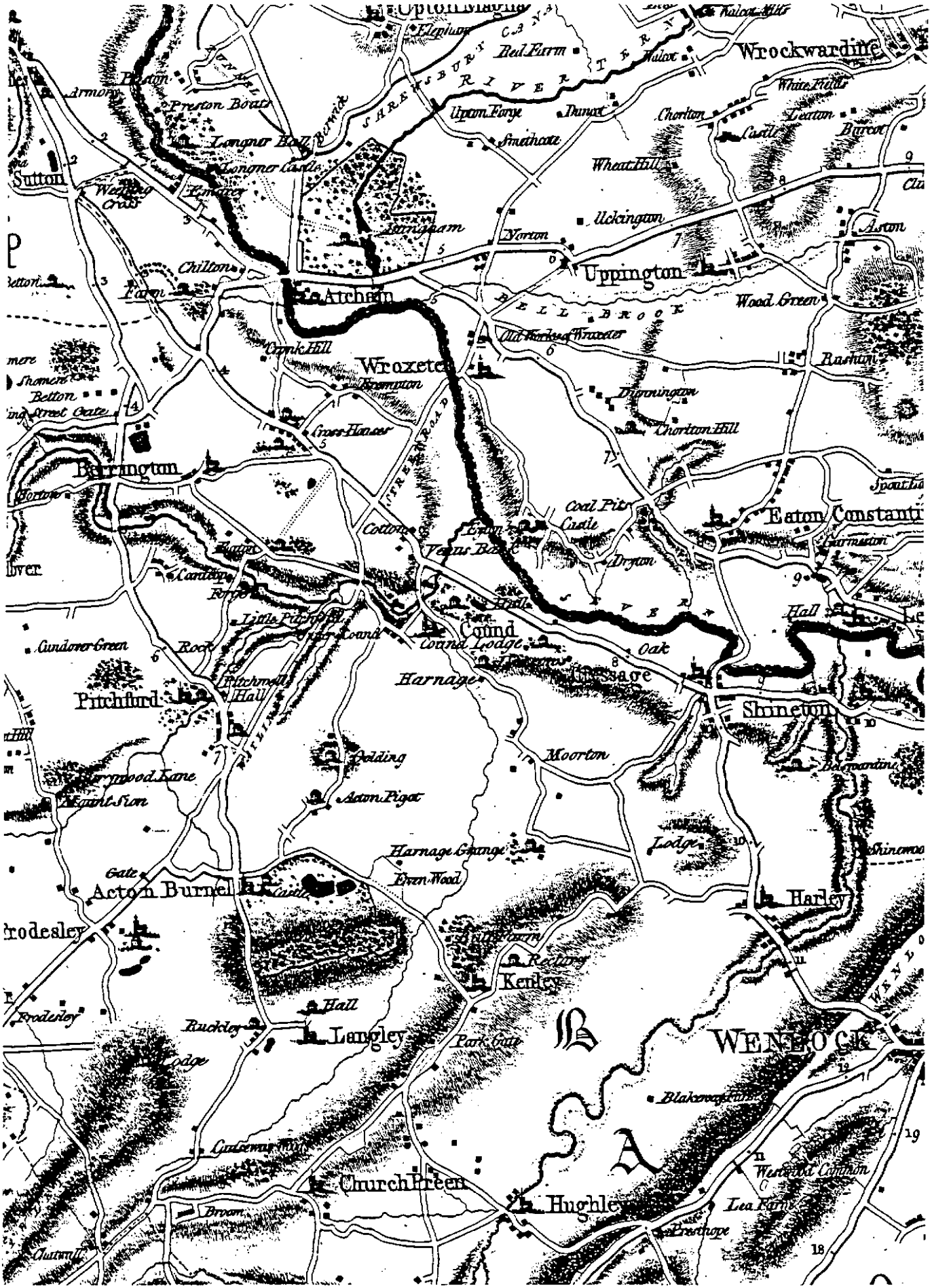

Figure Six: c.1808 Robert Baugh's Map of Shropshire (SBL).

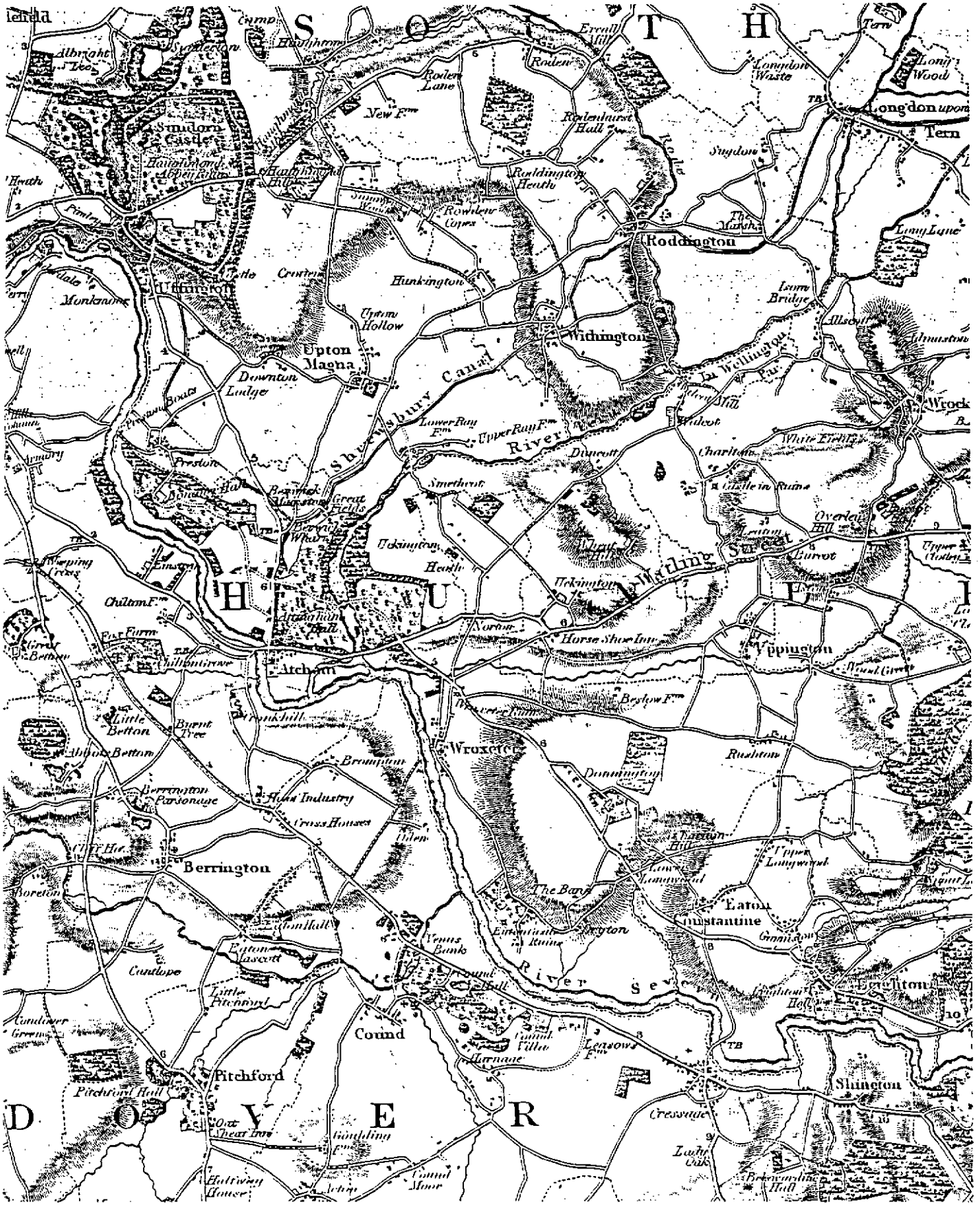

Figure Seven: "Map of the County of Salop from an Actual Survey made in the years 1826 and 1827". J & C. Greenwood. SRO/SBL.

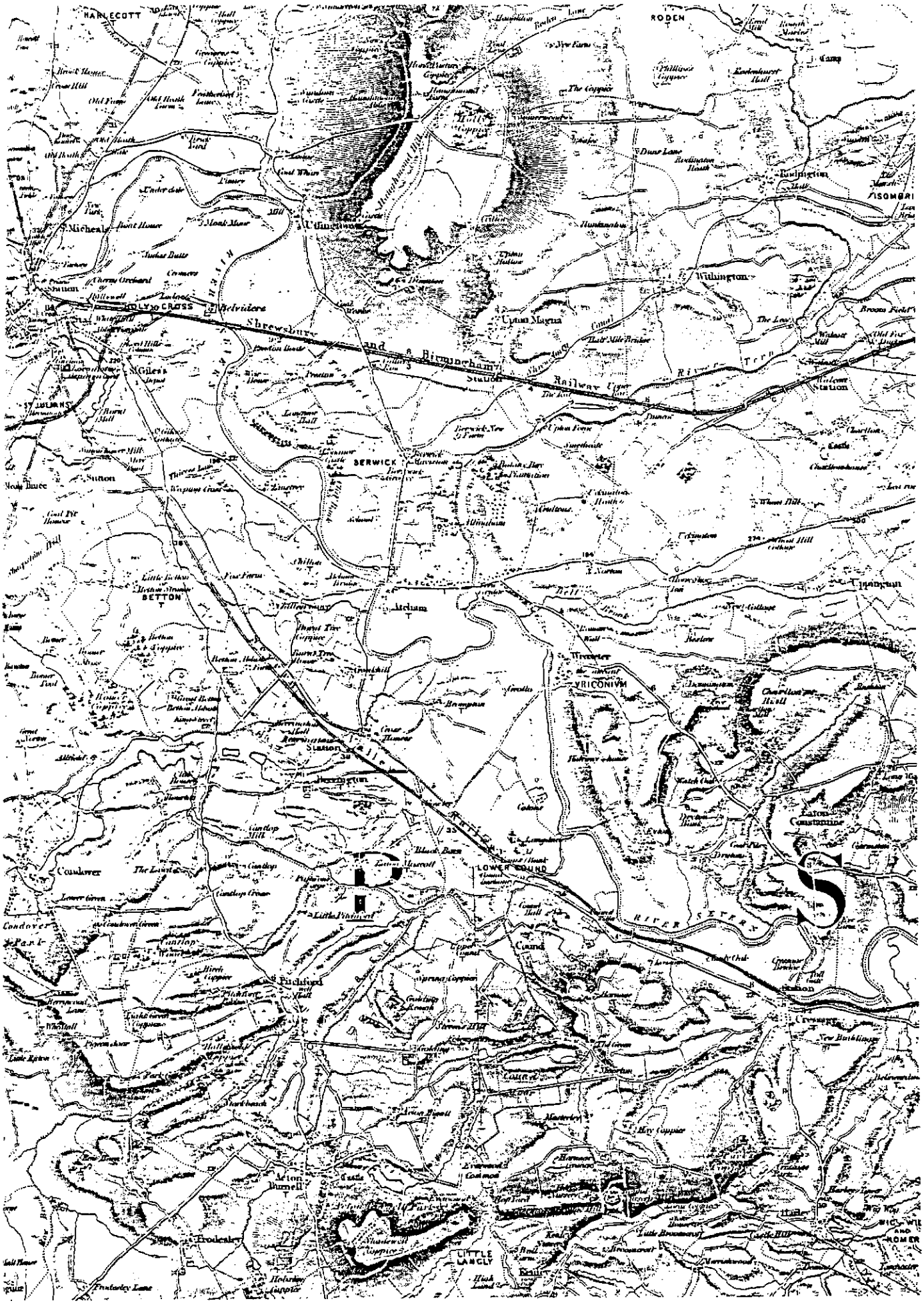

Figure Eight: 1833 First Edition Ordnance Survey Map 1": mile. Shrewsbury, sheet 41.

1817 First Edition 2 1/2": mile O S draft.

This is at a smaller scale, but provides useful details of the buildings on the northern leat. Three are shown some distance away from the leat, and a fourth on the leat itself. There is also some indication of a small pool by these buildings. The group are called Upper Rea.

1833 First Edition OS Map 1": mile.

Later altered to include the railway, this map shows Upper Rea and The Rea on the north side of the river. Both are just discernible as groups of buildings linked by a water course which continues as far as Upton Forge. No indication of the other leat is given.

1842 Upton Magna Tithe Map. 6 chains: inch.

This shows the northern part of the river only, but clearly shows a leat (described as a "fleam or feeder") which seems to stop just before the group of buildings and may have been out of use. The line is continued with dots. Two small bridges cross this leat, and it is divided by an island where it leaves the main river. A second smaller leat runs off the river parallel and to the south east of the main leat, turning south east and feeding back into the river.

The bend in the river is shown in detail, with an island and two bridges. Just north of the first bridge is a small building on the island. The river seems to have a further extension to the south east.

The group of buildings, labeled "Upper Rea", are described as "House, Pit, Buildings, Fold, Stackyard, Gardens", and consist of three large buildings and three smaller ones, with gardens or yards . One building has an unusual semicircular extension, as does another at Lower Rea (now Upton Forge Farm) to the west. A road runs across the two river bridges, over the main leat, past the buildings and on northwards. The line of this road is now preserved as an arch under the railway bridge.

1848 Atcham Tithe Map

The leat on the east side of the river is shown, and also the road crossing the river at the island. The island is shown as a barrier across the river. The Shrewsbury to Birmingham Railway is also depicted, although the line did not actually open until 1849.

1881 1st Edition OS Map, 25": mile, sheet 35.10

All of the buildings of Upper Rea have disappeared. The leat on the north west side still leaves the river, passes under the railway (where it is still marked by an arch) and seems to turn south east back to the river. The line of the leat to Upton (Lower Rea) survives only as a field boundary, and the former pool is marked as an area of marsh. A small foot bridge and short length of water marks the remains of the second leat on this side of the river.

The island and arched foot bridge can be seen in the river. The second bridge is obscured, but two buildings are shown on the White cottage site. A second island is shown to the south. A path or road still crosses the river via the arched bridge, the island and presumably the second bridge, but continues north along the riverbank, rather than towards the site of the buildings. The leat on the west side of the river can still be traced.

UPTON MAGNA TITHE MAP 1842

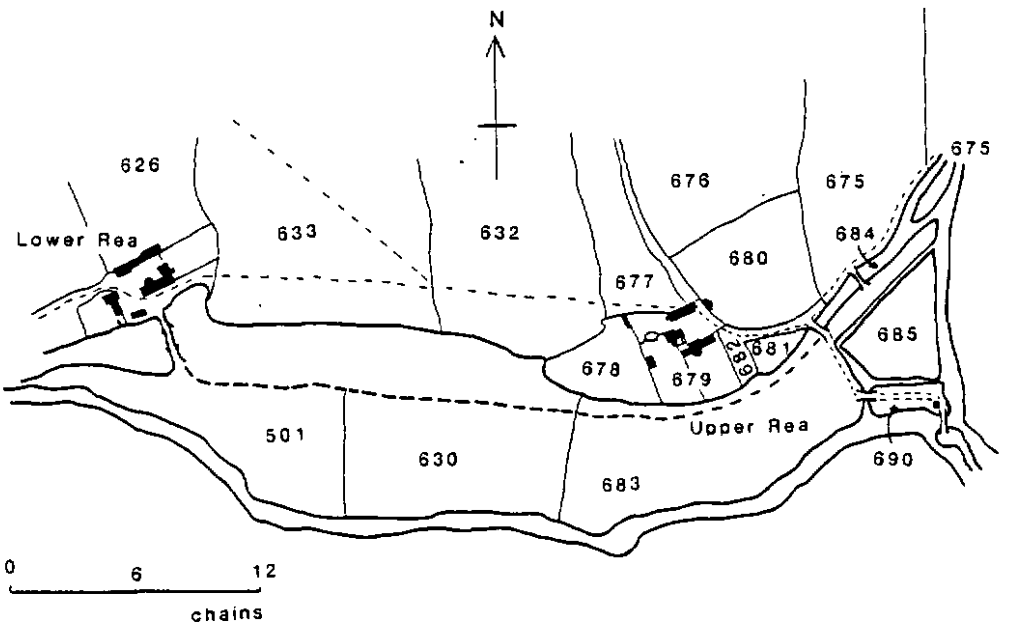

Figure Nine: 1842 Upton Magna Tithe Apportionment Map. 6 chains: inch. (SRO)

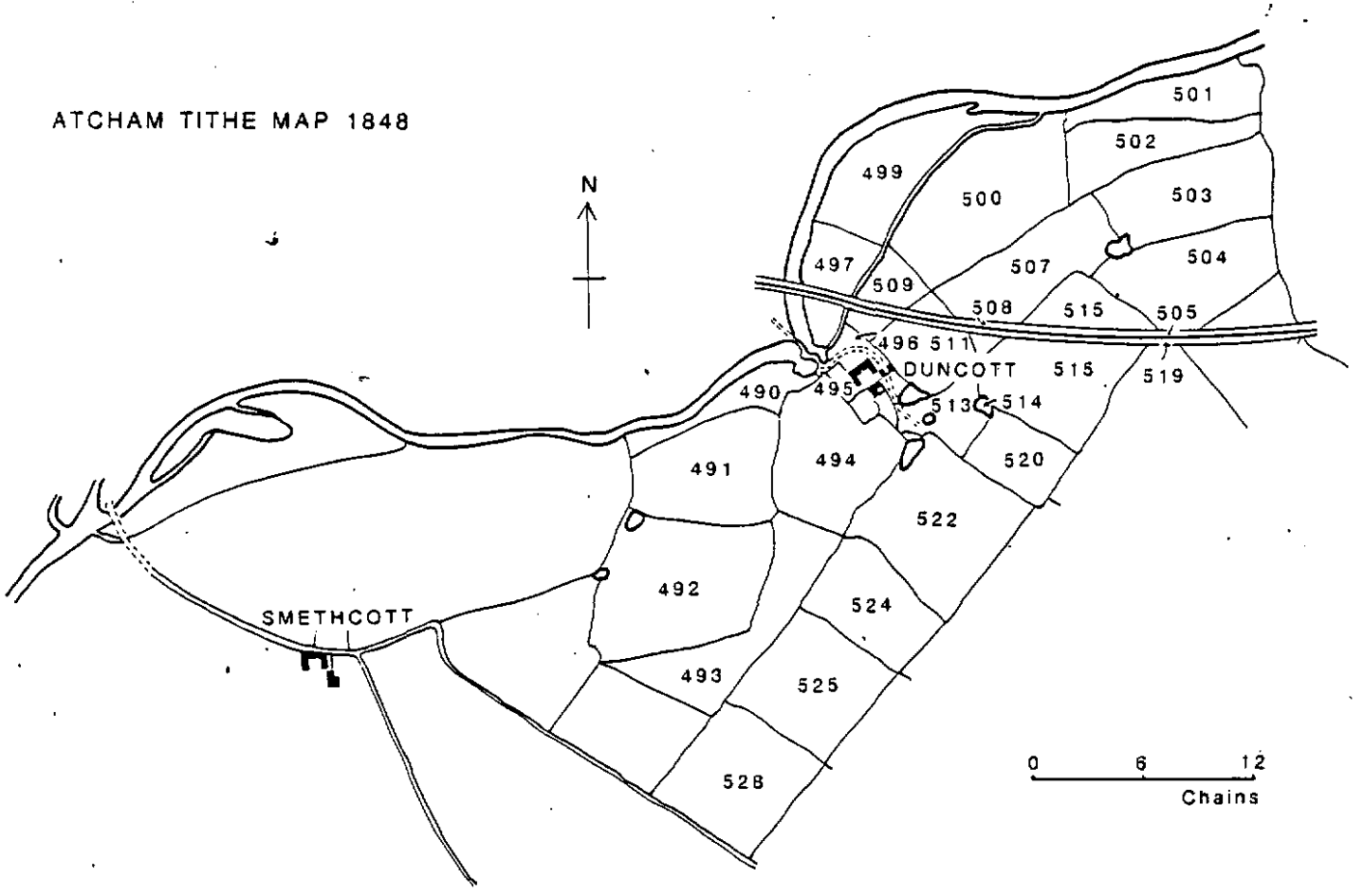

Figure Ten: 1848 Atcham Tithe Map (SRO).

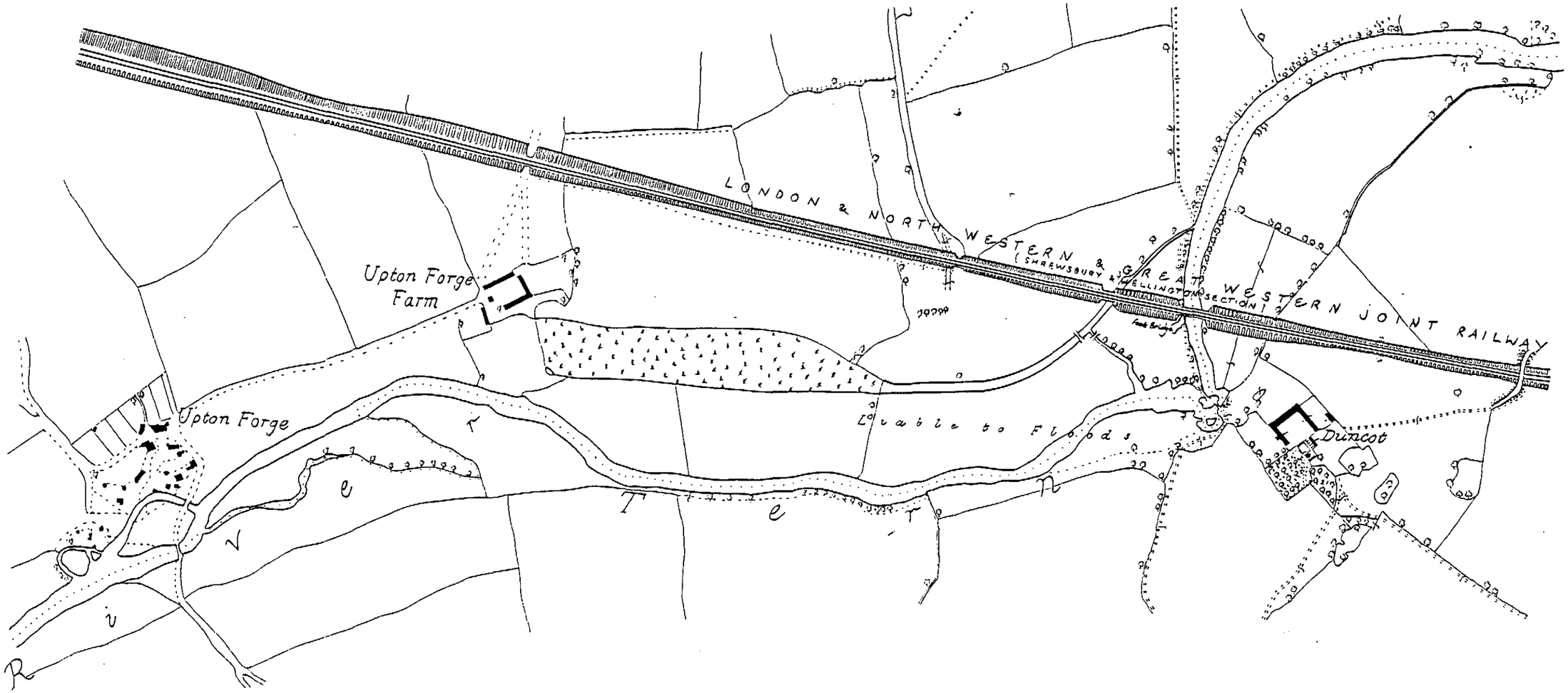

Figure Eleven: Tracing of 1881 1st Edition Ordnance Survey Map, 25": mile, sheet 35.9 and 35.10.

1901 2nd Edition Ordnance Survey, 25": mile, sheet35.10.
16

NT RAILWAY

ILLINGTON

530
3·217

531
18·174

532
·923

533
·794

534
3·188

535
6·426

536
7·843

537
2·213

538
1·821

539
·140

12
5·494

14
1·954

15
·161

16
·269

18
·143

Liable to Floods

Duncot

F.P.

F.B.

C.R.

M.P

P

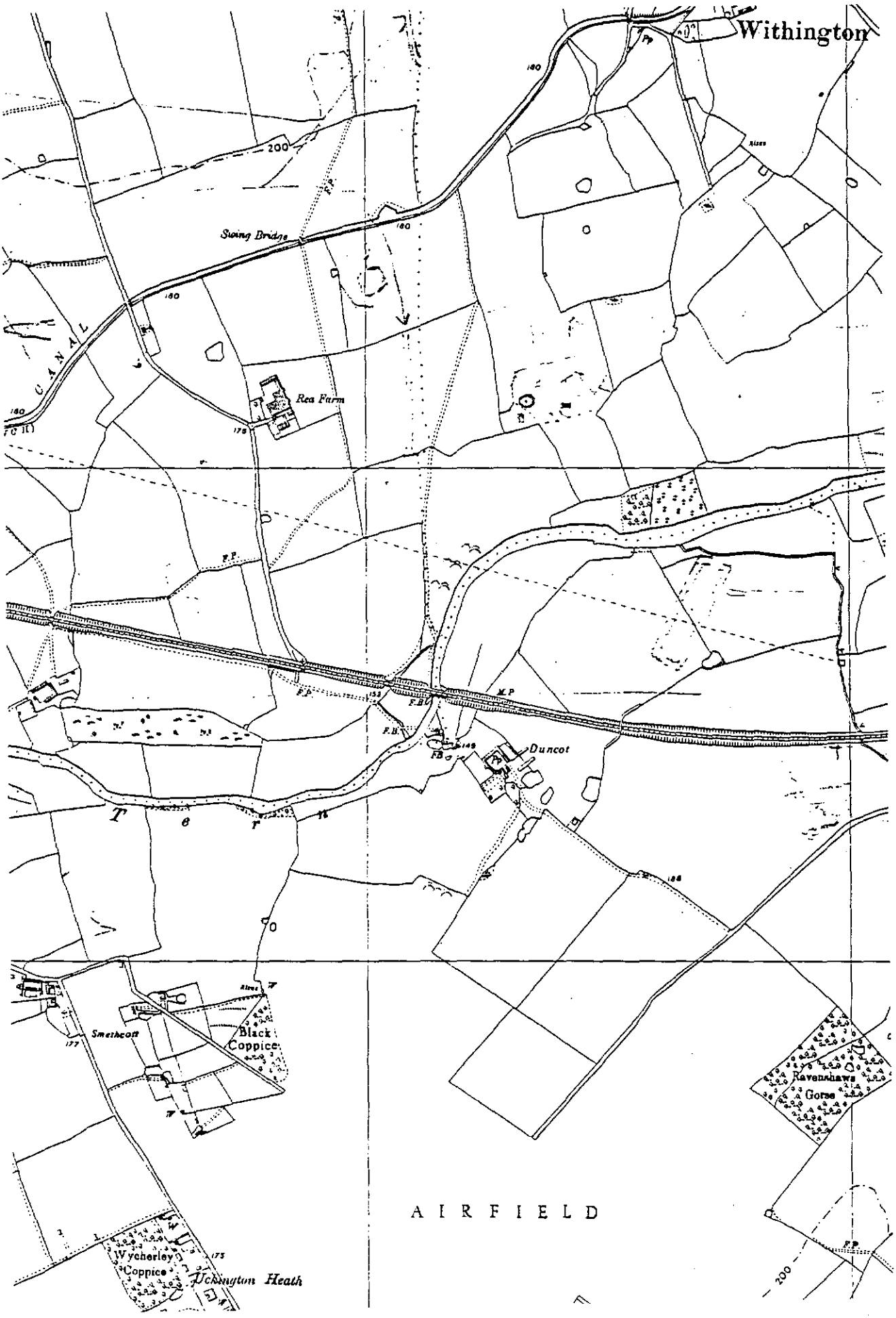

Figure Twelve: 1954 Revised Edition Ordnance Survey map, 6": mile

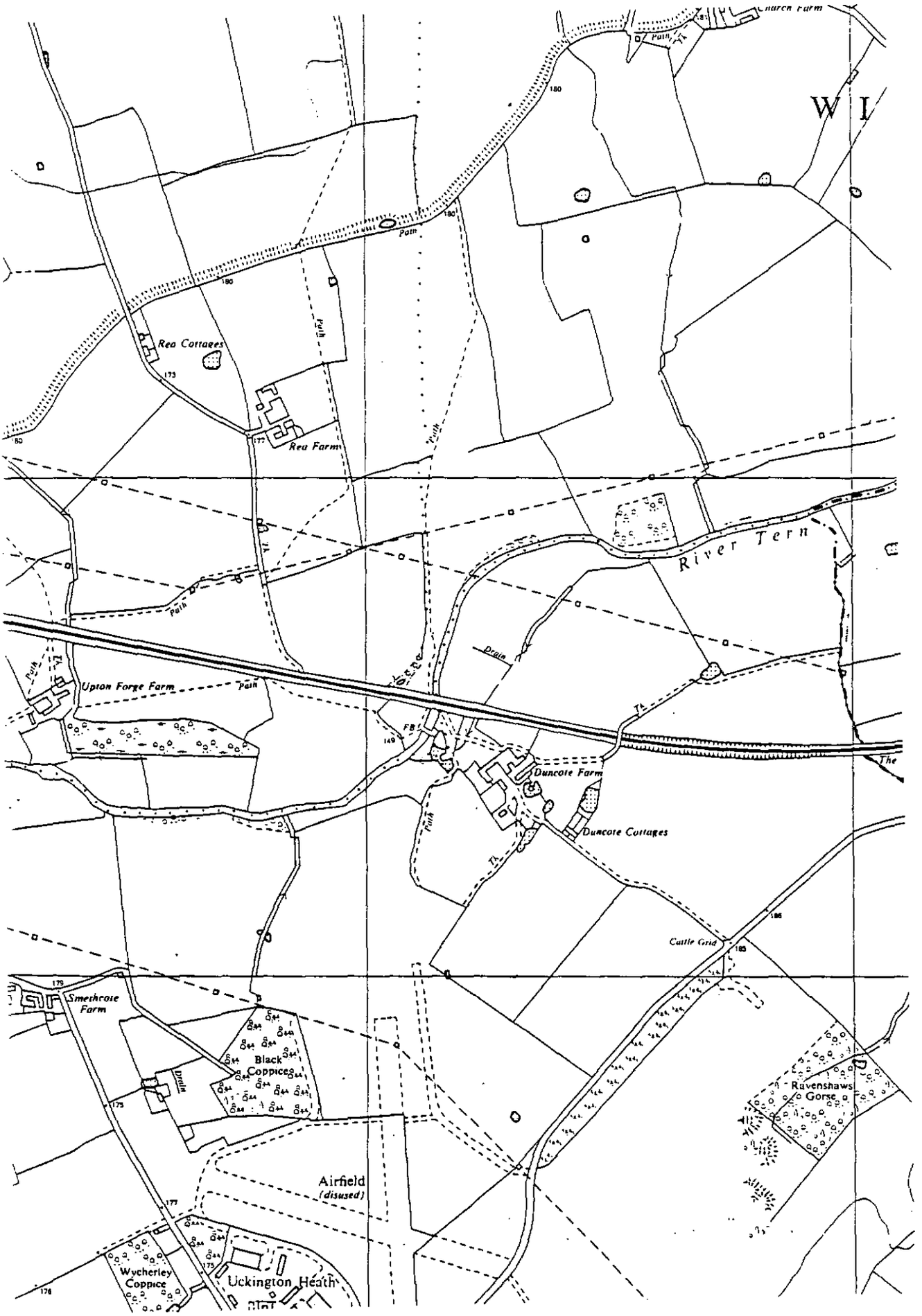

Figure Thirteen: 1970 Revised Edition OS map 1:10560

1902 2nd Edition OS map 25": mile Sheet 35.10

Little has changed, except that the buildings on the White Cottage site are larger, and a path now leads east from this site, crossing the old leat and turning north west towards the railway line.

1954 Revised Edition OS map, 6": mile Sheet 35 SW

The whole course of the river has been altered towards the west, leaving two small islands and a foot bridge. There is still a building on the White Cottage site. The leat to the east of the river is shown as a field boundary, and the water courses on the west side are unchanged. No river crossing is shown.

1970 Revised Edition OS map 1:10560

A foot bridge has been built across the river. The old bend remains isolated as a pool, and no buildings are shown. The leats on the north west side of the river have disappeared.

Section Two: The Archaeology of the Eastern Bank

To the east of the modern line of the river , and south of the railway is a low lying area of marshy land, traversed by three ditches. The land is all part of Duncote Farm, owned by the National Trust, excepting the site of the White Cottage, which is in private ownership. The original course of the river survives as a series of water filled ponds. A small arched bridge of red brick remains at one end of an embankment. From this bridge, a short path leads to the stone and brick abutments of a second bridge that before diversion, was the original crossing of the main river. Further remains of a demolished building (the "White Cottage") and a modern concrete river crossing were also visible. The very artificial nature of the river course suggested that this was the site of the medieval mill, while finds of slag suggested possible ironworking. The aim of the study was to establish the extent and nature of archaeological remains, and the potential impact of the road across them.

As part of this project, this area to the south east of the present river course was mapped in detail at 1:500. The present arched bridge and bridge abutments were recorded in detail and selective clearance of the tops of visible walls was undertaken by the wall leading to the bridge. Resistivity survey was conducted by the bridge, and in the area of the White Cottage site.

Contexts

As a result of excavation and survey, the following archaeological features were identified:

020 Brick "Dam" wall

A three brick thick wall, of hand made bright red bricks, extends from the surviving bridge to the present fence line, where it clearly stops. Excavation showed that the wall survived to a height of at least 6 courses and most likely more. The structure acted as a retaining wall to the path leading across the bridge. However, as no corresponding wall was found on the other side of the path, where the earth fell away to a pool, it is suggested that this was a dam wall, supporting an earth dam to the south, with a pool to the north.

021 Part of Bridge

An L-shaped length of 3 brick thick wall, surviving to a height of at least 13 courses on the south side. The wall crosses the path and is not keyed into the main arch structure of the bridge. The bricks are bright orange/red, with no scar and are set in a thick pinkish mortar with white flecks.

022 Small Bridge

Brick arch for bridge, three bricks thick and topped by a row of bricks set on edge. Scar bricks, bright orange, and set in thick white mortar (notably paler than 021). The south face survives to a height of 26 courses. There are straight joints on the east and western ends, suggesting a distinct construction from 021. The north face of the bridge is linked by an arch to the south, but is not symmetrical.

023 Surface of bridge

Red sandy fill with many small pebbles. Occasional large pieces of slag (40-60cm in diameter, c.10cm thick) set into the surface, as well as fragments of brick, some vitrified fire brick. Some fragments of modern brick.

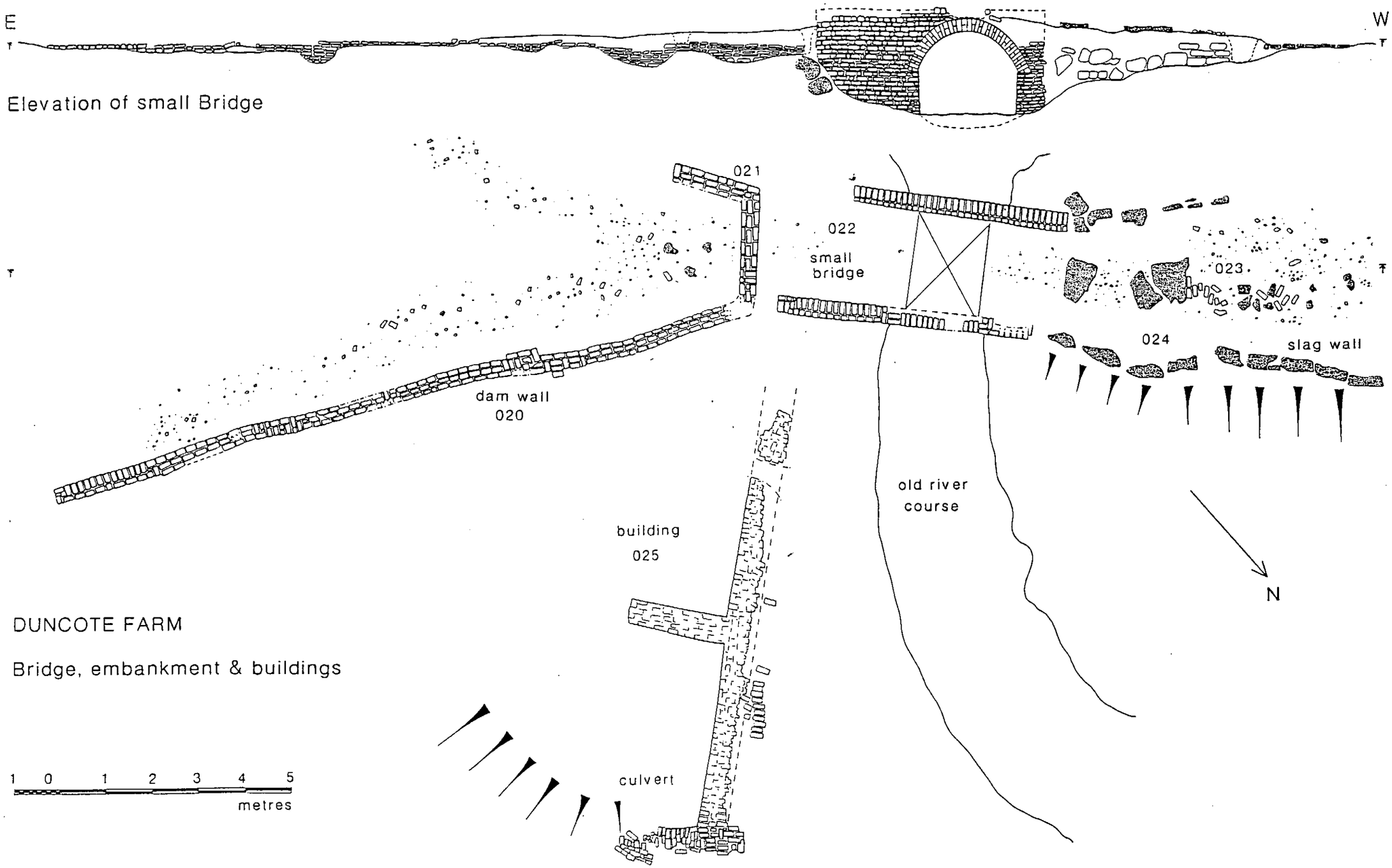

Figure Fourteen: Plan and elevation

024 Slag wall, north abutment of bridge

Remains of coursed slag wall, now much collapsed. Peters out as a line of smaller pieces of slag to the west. Some fragments of brick in collapse, but no evidence for a substantial wall corresponding to 020. Possibly stamping and potting slag.

025 Brick Building

Group of walls to north of dam, with the tops visible at present ground level. Main wall runs roughly north south, four bricks thick of bright orange hand made brick set in sandy white mortar. The outer brickwork is collapsing. Cross wall has been robbed out at the eastern end, and suggests the rest of the structure originally lay to the east. At the north end, part of an arched culvert springs from the corner of the wall, but the eastern section is now lost. The arch was the thickness of the wall (four bricks), and c. 1m across.

These walls were the western portion of a substantial, non-domestic building of the 17th/18th century, with a water supply. The structure was at an angle to, and probably earlier than, the dam wall.

026 Ditch

Ditch, now dry, about 2m wide, 50cm deep, between two rows of mature, pollarded trees. Runs north east towards railway line, with a slight bend suggesting a change of direction. Can be traced on the north side of the line as a ditch, with very large (>1m diameter) hedge sp. lining it on the eastern side. Meets the river about 500m to the north east.

Clearly a leat bringing water from off the river to a site on the east bank of the river, probably the mill.

027 Ditch

Shallow ditch about 2m wide, now water filled. Runs north, under railway line. Very straight. Agriculturaldrain.

028/029 Bridge abutments

Two bridge abutments, supporting present bridge over old course of river. 4 courses of large, (c.30cm x 80cm) stone blocks, rusticated, some with tongues to fit neighbouring blocks. Several spaces between blocks have been infilled with machine made bricks, suggesting that the abutments were largely rebuilt late 19th/early 20thC. The north abutment turns slightly north to follow the old river course. Traces of hand made red brick on the south abutment suggest earlier construction. The present footbridge is carried on a modern machine made red brick abutment resting on the older stonework.

030 Timber footbridge

Modern wooden bridge, one plank wide with v-shaped hand rails, carried on two central supports set in concrete, and old bridge abutments (028/9).

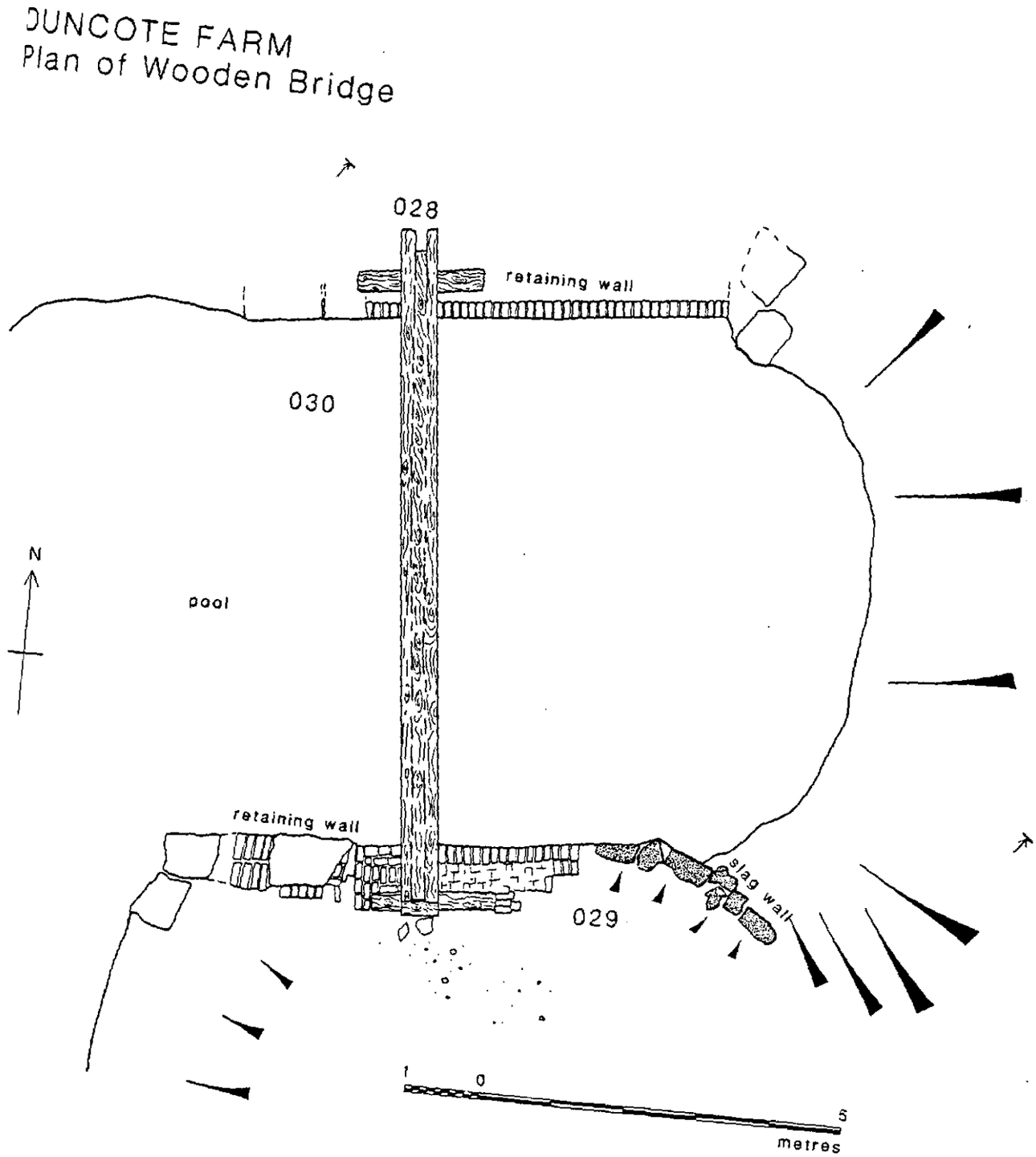

Figure Fifteen: Plan of abutments for large bridge.

031 Wooden hut

Small hut, constructed of old railway sleepers, single door, galvanised iron roof. A patch of older brickwork set in one wall.

032 "White Cottage"

Foundation of building, shown on OS maps as White Cottage. Demolished c. 20 years ago. Rectangular brick footings, 2 bricks thick, red hand made bricks, with occasional overburnt blue bricks and a scatter of hand made quarry tiles. Present owner of farm remembers building as being stone. Brown glazed ceramic sink presently lying over circular brick well.

033 Concrete bridge abutments

Remains of two shallow U-shaped abutments for foot bridge over present course of river. Constructed c. 1930s, collapsed after recent dredging of river. Several large diamond shaped concrete blocks nearby.

034 Old course of River Tern

Now visible as a shallow depression running north/south beside White Cottage, and marked by young hedgerow growth. 3-4m wide, filled with brick waste and rubble. Now dry.

035 South Pond

Present water filled pond to south of bridge, represents the former bend in the river Tern. Now considerably infilled, with a different shape to that shown on 1882 OS. East end and south side are largelyunchanged.

036 Course of Roman Road

RN 00066

Across the flood plain there was no apparent evidence for the Roman Road, however, there was a cutting through the eastern bluff of the river which marks the line of an early road, presumably on the site of the Roman Road. On the north bank all traces of the road have been obliterated with the recutting of the river.

Resistivity Survey

Two surveys were undertaken in order to investigate further potential remains in the areas where buildings were known to survive. A Geoscan resistivity meter was used, and readings taken at 50cm intervals over the survey area.

White Cottage Site

An east/west strip 10m x 6m was surveyed from the south east outside corner of the White Cottage to the line of the former course of the River Tern. An area of high resistivity was noted along the building and may form part of the platform for this building or part of an earlier building. A second area of high resistivity ran north-south, 7.5 m to the east of the White Cottage. This is probably part of a a substantial wall, running along the west bank of the Tern, and suggests that canalisation took placehere.

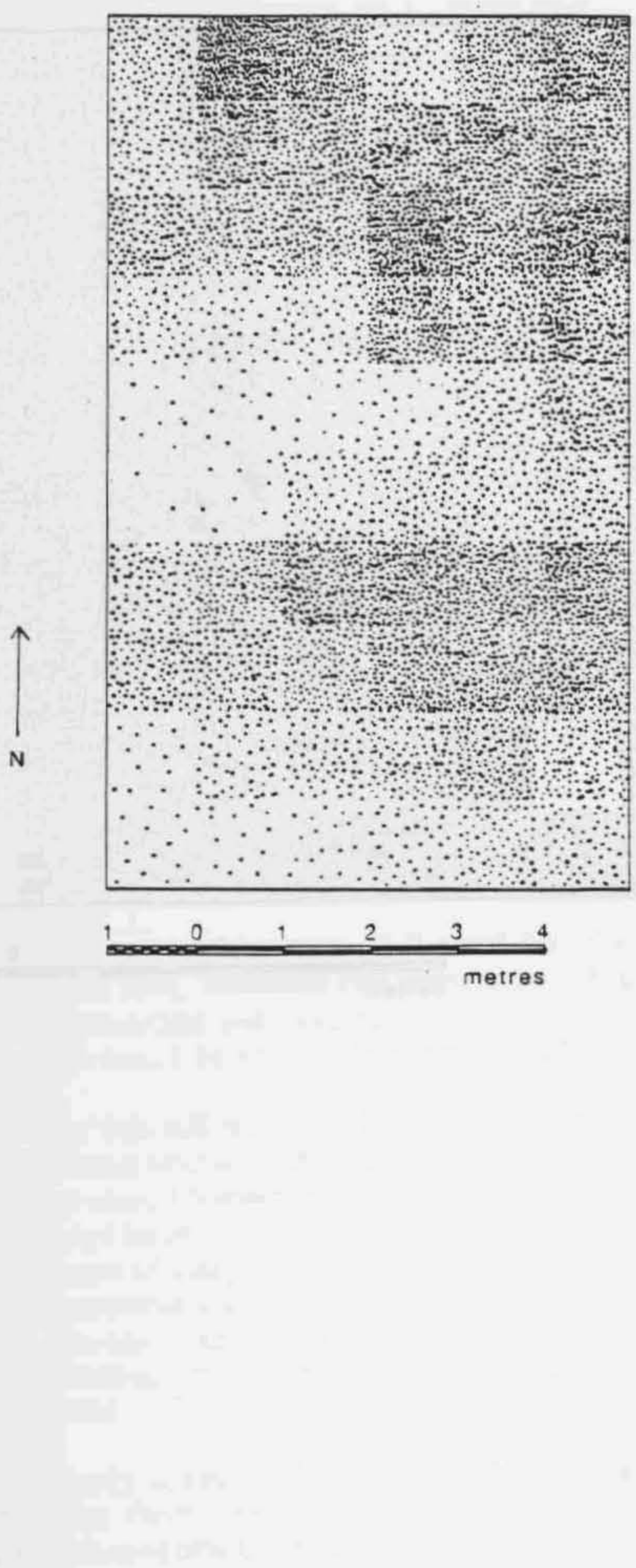

Figure Sixteen: Plot of resistivity survey, White Cottage Site.

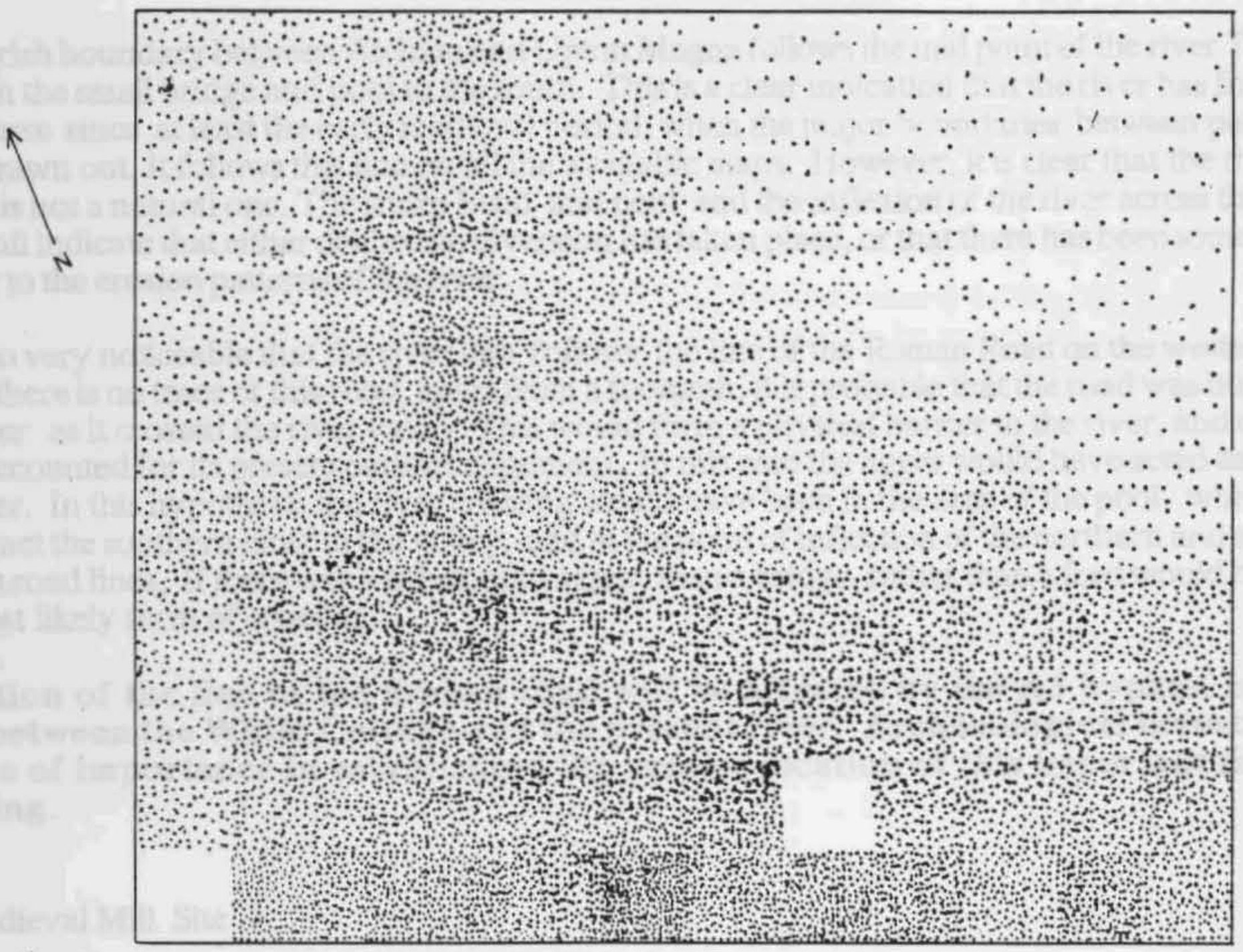

Figure Seventeen: Plot of resistivity survey, Small Bridge Site.

Small Bridge Site.

A second area of survey was undertaken on the north side of the small bridge and embankment. This ran parallel to the embankment for 12m and northwards for 10m along side the leat. This survey showed two clear features. An area of high resistivity along the line of the dam may have been caused by the rubble dump against it. A second area of high resistivity runs at right angles to the embankment, on a different alignment to the existing exposed walls. Again this may suggest that there is an underlying structure at a different alignment, to that on the surface.

InterpretationandRecommendations

a) Roman Road Crossing. PSV 00066

The parish boundary between Atcham and Upton Magna follows the mid point of the river Tern, through the small bridge and pool to the south. This is a clear indication that the river has followed this course since at least the early medieval period, when the major boundaries between parishes were drawn out. It follows this line on all the available maps. However, it is clear that the river course is not a natural one. The sharp bend and pool and the inflexion of the river across the flood plain, all indicate that either deliberate diversion has taken place, or that there has been some physical barrier to the erosion patterns of the river.

It is also very noticeable that the river line follows the line of the Roman Road on the western bank. While there is no trace of this road, apart from a footpath, it is probable that the road was built up on an *agger* as it crossed the river valley. This would form a physical barrier to the river, and could have accounted for its present curious alignment. In this case the agger would have acted as a dam to the river. In this hypothesis the river crossing would have been in the area of the pool, where the agger met the southern bluff to the valley, and at the point of inflection of the northern and southern Roman road lines. If there was a substantial agger, then a bridge, rather than a ford would have been the most likely form of crossing.

A section of the line of the Roman road will be affected by the A5 bypass, in the area between the White Cottage and the present river. Archaeological investigation will be of importance in establishing the precise location of this important river crossing.

b) Medieval Mill Site

Documentary evidence for a mill at Duncote in 1180, and the possibility of the Upton Magna Doomsday mill being located here, indicates that there is an early medieval mill on the Tern at this point, that may possibly be in origin late Saxon in date. If the agger of the Roman road formed a dam for the Tern, then this would be an ideal location for such a mill site. PSV 04321

Evidence for the location of this mill can again be suggested from the line of the parish boundary - which passes through the small bridge, rather than the larger bridge, and the main course of the river in 1882. The larger bridge would therefore be across a later cutting, reducing the corner of the river. Without this cutting there is a large peninsula of land that jutts into the river, and a mill would be most likely located at the north end of that peninsula, where a leat could be cut through the river to power an undershot (or even a horizontal) wheel. Such a leat is shown on the 1842 Upton Magna tithe map. A building is shown on this site from at least 1777 (map). On the ground, this would be around the site of the White Cottage and adjacent area to the north. Resistivity survey suggested there are substantial buried walls here.

This area will be directly affected by the A5 bypass, especially as this is the area of bridge works across the Tern, requiring considerable plant movement and earth moving. We believe therefore that the site of a well preserved medieval mill will be substantially disturbed by the A5 bypass.

c) Second Duncote Mill. 0432(

In the lease of 1650, reference is made to two mills at Duncote as well as leats and dams. One mill may be on the White cottage site, presumably close to the line of the medieval mill. The second would appear to be on the east bank of the river, fed by the leat that takes off from the river 1km higher up, in existence by 1777 (map) and joins the river by the small bridge. Adjacent are the foundations of a massively constructed brick building (four bricks thick). At its south end is a brick culvert, suggesting that water passed through the building at this point. It was however a very simple two room building, and the position of a wheel pit was not immediately clear. We think that was a mill, probably that mentioned in the 1650 lease, but out of use by 1777. It probably was powered by a breast shot wheel.

At the south of this building is a large dam wall (020), faced with bricks on the north side. It ends in an abuttment for a bridge. If this functioned as a dam, then the river would have been channelled through this narrow opening. Alternatively it could have been for the tail race to the mill (025). It is significant that the walls and buildings are on different alignments, use different bricks, and are apparently unrelated. This suggests that the mill 025, had gone out of use, when the dam wall - or causeway was constructed.

The small bridge is a later insertion to the dam wall 020, the walls clearly butting the earlier abuttments. Characteristic mid 18th century scar bricks are used in its construction. The large bridge with its massive ashlar blocks may also date to the same time, when a cutting was made through the White Cottage peninsular. This arrangement was clearly in place by 1807 (map) and probably by 1777 (map) and represents the end of milling on the site. The slag used in the construction of this bridge probably does not indicate in site ironworking, but reuse of this material from an adjacent site.

This whole complex of walls, dams and bridges is of great interest. It lies extremely close to the A5 bypass line, especially as major bridging of the Tern will take place here. We feel that the exact fence line of the road should be precisely established, and that the small bridge and associated walls should be listed by the Secretary of State, to ensure preservation.

Section Three: The Archaeology of the West Bank of the River

The west bank of the present river Tern, south of the railway, comprises water meadows (owned by the National Trust) and a large field, at present ploughed to take potatoes, which forms part of Upton Forge Farm. Between the two is an open ditch filled with pollarded trees. The water meadows are very overgrown, and without limited excavation and clearance it is very difficult to establish the presence of any archaeological remains. The field however has been recently ploughed, yielding large quantities of brick and pottery, and iron working residues.

Contexts.

001 Area of dark grey soil with concentrations of scar bricks, coal, and burnt areas, much domestic pottery. There are traces of a large depression in the area of this scatter, suggestion the location of a ploughed out building.

002 Lighter brown soil, with scatters of bricks and pottery and slag. On the west side were considerable quantities of cobbles

003 Area of scattered scar bricks, roof tiles, gravel and some slag. The resistivity survey suggested that there was a building in this area. A small excavation, indicated 30cm of dark grey, plough disturbed soil, containing much pottery and slag, with a layer of brick and tile rubble overlying natural subsoil.

004. Large depression, filled with scattered brick and tile, slag and coal. Again probably location for a building.

005. A very large concentration slag in dark brown soil. There was very little pottery or bricks, suggesting a deposit of discarded ironworking waste, rather than structural evidence. Excavation identified 50 cm of deposit containing only slag, overlying subsoil.

006. Area of scattered scar bricks, gravel and some slag.

007 Dense concentrations of slag in large pieces, some with stamping and potting residues. Some fire bricks. The area is marked in a larger area of brown soil.

008 A small excavation in 007, provided stratified evidence for a dense larger of compacted slag. As this was a stratified deposits, the excavation did not proceed deeper.

009 Ploughed out line of road from a bridge under the railway, running diagonally across the field ending at 007. Its surface was marked by concentrations of orange clay, and in places by cobbles, especially at its south end.

010 Ploughed out line of a clay bank. This formed the south side of a leat that curves across the field following the contour. At its northern end, it has been blocked off by a small bank.

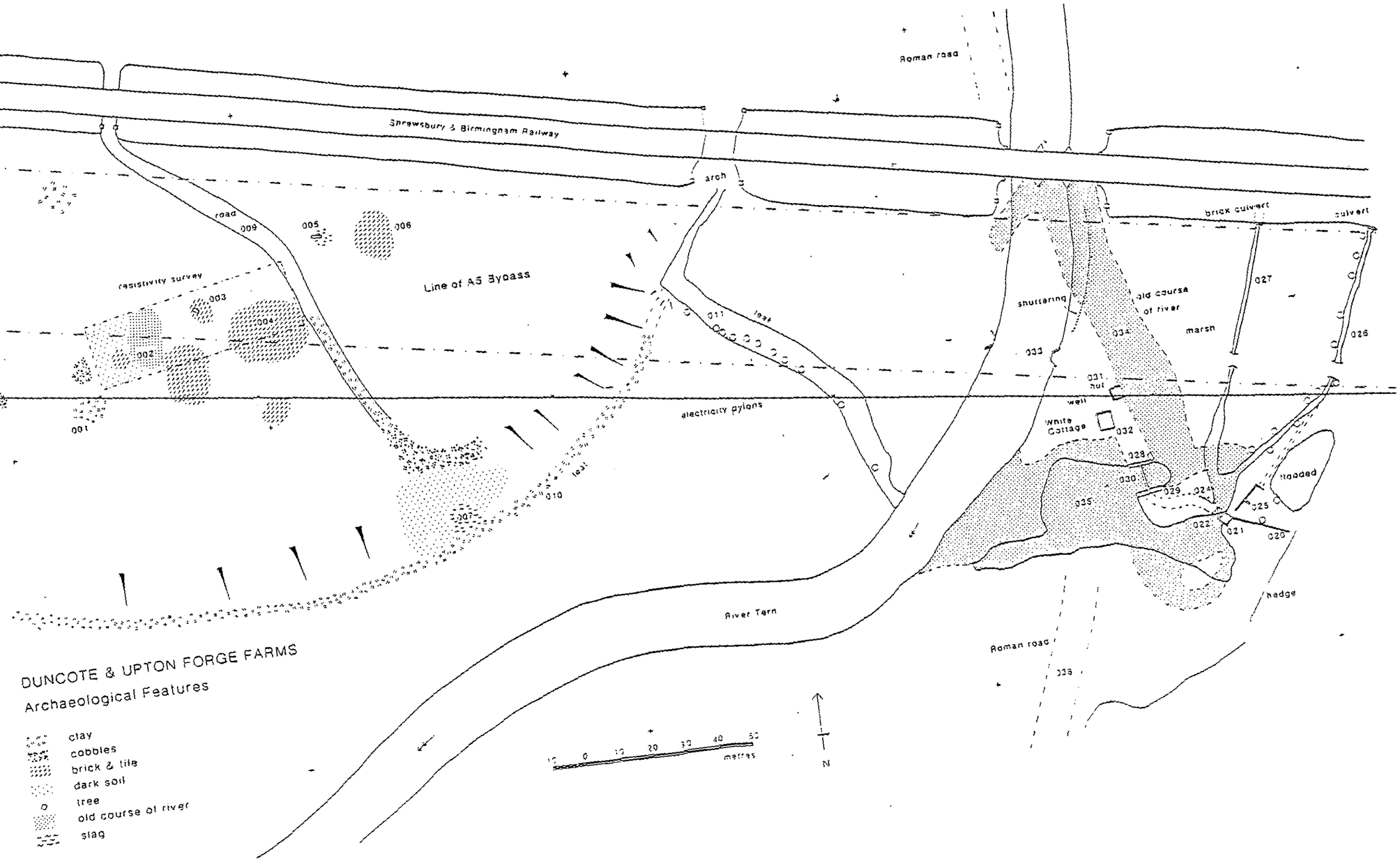

Figure Eighteen: Archaeological Features on Duncote and Upton Forge farms.

011 Ditch that runs across the field to the river, forming bypass to the leat 010, but which now takes all the water from the intake upstream. It passes under the railway by a wide bridge, with a cobbled base.

Resistivity Survey

A resistivity survey was undertaken along a strip 12 m wide and 60m long, across the area of densest brick and slag concentration. This showed that there was considerable variation in this area, although the precise pattern of buildings was masked by large deposits of brick rubble.

Three particular features were noteworthy. The first was a roughly square area of high resistance, 32 m from the western origin. This corresponded to brick rubble on the surface 002. From the survey the building would be about 5m square. A second wall runs westwards from this building to about 8m from the origin, along the northern side of the surveyed area. A third group of buildings are suggested at the extreme western end.

InterpretationsandRecommendations

a)EarlierOccupation

Two pieces of worked flint were found during fieldwalking, suggesting Neolithic or early Bronze age occupation. Three sherds of 13th century medieval pottery were also found.

b) Ironworking Sites.

PRN 04320

Quantities of ironworking debris, slag as well building remains suggests that there was a substantial ironworking site on the west bank of the Tern known as Upper Rea. This site lies adjacent to the leat which ran to Upton Forge Farm (known in the 19th century as Lower Rea Farm) and Upton Forge, and which took off from the Tern north of the railway line. This land formed part of the estate of Upton Forge during the 18th/19th centuries, and almost certainly formed part of this large ironworking complex, explaining why it was not individually mentioned in the sources.

Upton Forge was in existence from the late 17th century, and the earliest map surviving (1777) shows the leat already there, together with a group of five buildings, where the archaeological survey suggests were structures. Four of these same structures are also shown on the 1842 Tithe Map. The road is also shown, with a bridge over the leat, and a bypass leat running to the river. The 1777 map gives only domestic use for these structures, while the archaeological evidence suggests quite extensive ironworking activity, although domestic pottery and a malting tile were also found. Their plan does not suggest that they were tenements, but substantial structures. Finds of scar bricks of mid 18th century date does indicate date. It is probably that these buildings represent a short-lived ironworking complex, on the terrace, some distance away from the main leat, and therefore not directly water powered. They go out of use in the later 18th century and are converted to domestic use.

The water-powered forge site lies directly adjacent to the leat. It was apparently timber framed, as there is very little evidence for bricks on the surface. It is only shown on one map - the 1817 OS draft, and it had gone by the 1842 tithe map. Stamping and potting slag suggests that this forge was worked during the late 18th century.

The A5 bypass will totally destroy the archaeological remains of the northern group of buildings. Resistivity and small scale excavations suggests that there are buried structures, although they will be inevitably plough damaged. There is compelling evidence to suggest that they are industrial in origin, later converted to domestic use. They are of considerable interest, as they represent industrial buildings without evidence for water power - structures which are very rarely investigated, as they are so difficult to identify.

The southern building, the ?forge will not be directly affected by the A5 bypass, but its existence should be noted and protected.

c) National Trust Meadow

Little direct survey could be undertaken here, because the area was covered with vegetation. This plot of land has since the 18th century been part of the Attingham Estate, and is thus distinct from the sites to the west. While none of the available maps show buildings in this plot, a number of ditches cross it, suggesting a possibility of water diversion for water power.

One leat is a bypass for the main Upton forge leat, running back into the Tern. This is in place by 1777 (map) and is still there today, marking the boundary to the plot. The possibility that a mill was located at the junction between leat and bypass should be considered, otherwise it is difficult to explain why this bypass was placed here. Three very large pieces of slag were found at this point.

A second ditch is shown on the 1882 OS map as a backwater to the main river, underneath the railway bridge. It is also shown on the 1842 Upton Magna tithe map, although all trace has since disappeared. This links back to the other leat, and it may be a drainage feature.

Whilst it is possible that there was industrial activity in this plot, the documentary evidence and the pattern of land ownership are against it. Full scale excavation cannot be justified but careful observation should be made during road construction.

Section Four Surface Finds.

The following is a list of archaeological finds from surface contexts found during the survey. The finds were collected during field-walking and were only a small sample of the material which could be observed on the surface. The farmer has indicated his intention to use a stone-picker on the field prior to planting potatoes, which would substantially affect the archaeological record.

Ceramics

Medieval - grey body, with fine sand temper, unslipped and unglazed, part of a flat based jug.
- red body, illsorted sand temper, internal bead rim.

001: 1 base grey ware
1 body sherd coarse, dark brown
1 body sherd hard fired grey, slightly burnished
1 plain rim very coarse, purplish interior, mica inclusions

Tin glaze - thick buff coloured fabric, hand painted blue decoration on blue white glaze. Imported from Holland, and made in Britain from mid 17th century onwards.

001: 1 rim

Salt-glazed stoneware

001: 1 base fine white salt-glazed stoneware, a bowl with foot. Made in Britain from 1720s onwards but largely replaced by creamware in the late 18th century (Draper 1984). 1 rim of neck of jug with broken handle, grey fabric, moulded decoration, blue and blue-tinged white glaze. Turned decoration. German Westerwald 17th/18th century import (Brown 1979:38).

Black glazed coarse earthenware - red body with white inclusions, red slip with clear or iron-rich glaze on inside providing a dark reddish brown glaze. Forms are generally very large, wheel-thrown large bowls or straight sided vessels with everted rims. Generally mid 18th/early 19th century in date.

001 : 22 rims, 16 bases, 24 body sherds
002: 2 body sherds
003: 1 body sherd
006: 1 rim

Black-glazed fine earthenware - dark red/black body with glossy black glaze on interior and exterior. Notably finer than the black coarse wares. Similar to "Jackfield" wares found in the Gorge. Forms mainly small wheel thrown cups or small jugs. Very fine rims. Mid 18th century.

001: 2 rims, 2 bases, 1 body sherd.

Press-moulded slipwares - buff coloured body, red slipped with yellow trailed decoration and clear lead glaze. Pie crust and plain edging, mainly shallow dishes. Two fragments slightly turned on internal face. Late 18th century.

001: 15 rims, 27 body sherds
002: 1 rim, 2 bases, 3 body sherds.

006: 1 rim
003: 3 body sherds, 1 rim
001: One fragment red bodied slip ware with thick white trailed slip and clear glaze. ?earlier type of slip ware.

Wheel thrown slipwares - buff or red earthenware fabric, yellow trailed slip, dark iron rich glaze. Small pots or cups. Late 18th century.

001: 1 base, 1 rim, 1 body sherd, 1 handle.

"Manganese mottled" Earthenware - buff body, streaky brown iron-rich glaze, inside and out, not covering foot of piece. Forms mainly wheel thrown bowls. Mid to late 18th century.

001: 5 bases, 6 body sherds, 2 rims.

Creamware - white earthenware fabric, white glaze, undecorated. Made from 1750s onwards (Draper 1984:47). Shallow plates or bowls.

001: 4 bases, 2 rims, 2 body sherds. 1 rim blue feathered edge. 1 base turned with blue hand painted decoration.
002: 1 rim
003: 1 circular base 5cm diameter, 1 rim of dish.

Lustreearthenware - Fine earthenware fabric, lustrous mid brown glaze on exterior, slipped inside, turned decoration.

001: 2 body sherds.

Banded Mocha-ware - buff coloured earthenware fabric, blue mocha decoration on white slip, bands of dark brown and areas of light brown slip, clear glaze. Late 18th/early 19th century.

001: 2 rims, 6 body sherds.

Banded ?creamware - white fabric, incised decoration, filled with bands of dark brown and blue slip, clear glazed.

001: 1 rim, 1 body sherd.
002: 1 body sherd, brown blue and green bands on white ground

Victorianearthenware - yellow fabric, clear glaze. Kitchen wares.

001: 2 body sherds.

Stoneware - Off white fabric, dirty yellow salt glaze. Straight sided vessels. Victorian.

001: 1 base, 1 body sherd.
003: 1 sherd fine brown stoneware, turned

Blue transfer printed ware - white fabric, blue transfer printed decoration. 19th century.

001: 1 rim of bowl, 1 rim of shallow dish, one body sherd.

Porcelain- ?hard paste white porcelain. Manufactured from late 18th century onwards in Britain.

001: 1 rim white porcelain with thick blue band on edge

GlazedEarthenware

001: 1 rim, 1 body sherd high fired grey fabric, purplish sheen to glaze

Glass

001:
1 frag greenish window glass, slight vitrification.
1 base thick green bottle glass, hand blown
1 neck green bottle, hand blown
1 body sherd hand blown green bottle glass

002:
1 base green/brown hm bottle base, very thick 15cm diameter
2 frags green window glass

003:
1 base thick green bottle glass
1 frag green glass

Clay Pipe

001: 1 stem

BuildingMaterials

Clay roof tile - hand made, coarse red roof tile, with hand-made nibs

001: 6 frags (one with nib)
002: 1 frag
003: 2 frags, 1 frag dark blue.
006: 1 frag

Light red/buff with many small inclusions:

001: 15 frags (3 with nibs)
003: 1 frag with nib

Field drain - red clay, small hand made, 21/2" diameter.

003: 1 frag
002: 1 piece coarse red field drain, large diameter
1 piece coarse red, small diameter

Malthouse Tile - hand made red fabric, hand impressed pointed holes on underside with single holes pierced through to top surface.

001: 2 fragments.
003: 1 frag

Fire Bricks

001: 1 large vitrified fire brick
003: 4 frags, two with extensive vitrification, one iron stained
007: 4 frags, 2 vitrified
008; 2 frags

House Bricks

001:4 bits. 3 pieces mortar
003: 8 bits
005: 1 frag
006: 6

Flint

001: 1 frag grey flint with small area of patina, much battered but possible small flakes removed.
003: 1 flake with clear bulb of percussion, and some plough damage. Dark brown colour.

Fuel

001: 1 piece coal
003: 1 piece coal
006: 1 piece coal
008 : 1 piece coal

Ironwork

001: 1 square section iron nail, c. 6cm long, square head.
006: 1 " " " " > 6cm long, round head
002: 1 rectangular section iron nail, 20cm long, rectangular head.

Slag

Grey slag - very dense, some long even bubbles rising vertically to upper surface, glossy smooth grey globular surface. Very dense and heavy. Iron rich. Probably stamping and potting slag.

001: 7 pieces.
002: 5 pieces
003: 35 pieces
005: 1
007: 10 pieces
006: 22
008 : 7 pieces

Aerated Grey slag - very light bubbly, grey, rough surface. Many large air bubbles. Very similar to Grey slag and probably from same process.

001: 6 frags
003: 19 pieces
005: 21
007: 11 pieces
008 : 19 pieces

Blast Furnace slag - blue and green, glassy cold blast furnace slag. Dense, few bubbles, low iron content, no inclusions.
002: 5 pieces
003: 6 pieces

Iron pan - iron rich mess of charcoal, occasional stones, brick, mortar, all very red iron stained. Loosely held together.

003: 4 pieces
005: 9
007: 8
006: 4
008 : 16 pieces

Coarse slag - very rough, coarse exterior surface. Cross section shows many small bubbles, crystalline grey and slightly fibrous structure.
001: 4 pieces
006: 12 pieces
008: 6 pieces
002: 1 piece

Crucible: highly fired, almost quartz grey fabric, 1cm thick. Traces of slag adhering to surface of pot.

007: 13 pieces
008: 16 one with piece of slag attached

Discussion

The finds indicate that there was a period of domestic occupation in the area of context 001. There is slight evidence for medieval and earlier occupation, but the bulk of the pottery suggests a broadly late 18th century occupation extending into the 19th century. This confirms the evidence of the 1777 map, which suggests that former ironworking buildings are now in domestic occupation.

Little evidence for domestic occupation were found in the other contexts. However, large quantities of slag were found. These were of three types - blast furnace slag probably imported as ballast for the railway or road metaling, and generally found near the railway line, dense grey "Stamping and potting" slag, and another type of slag indicative of general ironworking.

"Stamping and Potting" was a process patented by Richard Jesson and John White in 1773. It involved heating broken pieces of pig iron in clay pots. It was one of the earliest methods of producing wrought iron using coal, and was popular in Shropshire until the early 19th century, which it was replaced by the puddling process (Trinder 1981:35). Slag and crucible fragments have been found at Wright & Jesson's own works at Wrens Nest on the River Severn by Richard Terry,

and these closely resemble the grey slag and crucible fragments found in contexts 008 and 007. Finds of coal also support this view.

Clearly ironworking was taking place *in situ* on the areas of 007 and 008. The slag is highly localised and not of the type normally used as railway ballast. The date of this working must have been somewhere between 1773 and about 1800. There is little evidence for building materials here, suggesting temporary or timber-framed structures (perhaps open-sided sheds).

Section Five: The Impact of the A5 bypass.

We feel that the A5 bypass will truncate an important landscape as it crosses the River Tern flood plain. Important evidence for the Roman road crossing at this point, a series of medieval and post medieval mills, and a large 18th century ironworking complex are likely to be destroyed. We propose that:

a) Consultations take place with the DOT to establish the precise line of the bypass and that every attempt be made to minimise damage to identified archaeological features.

b) Further excavations take place on those sites which will be destroyed by the road. In particular, the **White Cottage mill** site and **Upper Rea** site should be investigated. We consider both these sites are of importance to justify National funding.

c) The **small bridge** is included on the statutory list by the Secretary of State to ensure its preservation.

d) A watching brief is undertaken during road construction itself along the whole valley and terraces.

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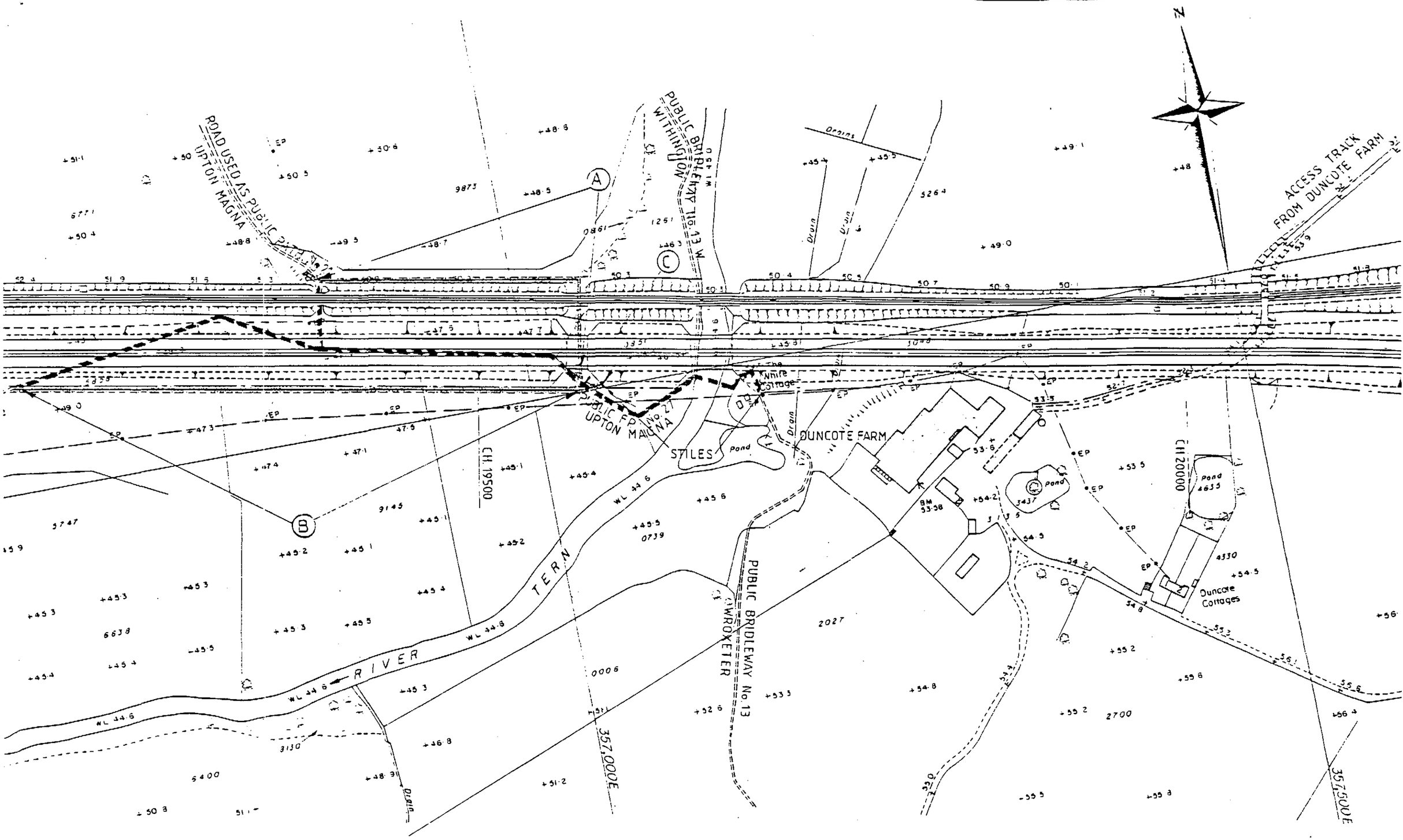

Figure Nineteen: Area affected by A5/Holyhead Trunk Road.