

## **10.5 National Mapping Programme Report 2**

### **ASSESSING THE ARCHAEOLOGY OF WARWICKSHIRE'S AGGREGATES LANDSCAPES**

#### **AGGREGATES LEVY SUSTAINABILITY FUND**

#### **ENGLISH HERITAGE PROJECT 4861**

#### **SECOND INTERIM REPORT FOR AERIAL SURVEY COMPONENT**

#### **Report Author: Laurence Chadd**

This report has been reformatted by Magnus Alexander to conform to the main report. This has included some minor edits and resizing of some images. It should be read in conjunction with the first report above.

#### **Summary**

To inform Warwickshire County Council's Minerals and Waste Development Framework, Warwickshire Museum Field Services proposed a project to "Assess the Archaeology of Warwickshire's Aggregates Landscape" (English Heritage Project 4681) funded by the Aggregates Sustainability Levy Fund. Part of this project was to map archaeology in those areas likely to be subject to mineral extraction using aerial photographic sources. The mapping was done to NMP standards by a mapping officer located in the NMR at Swindon. This second report covers three blocks covering a total area of 75km<sup>2</sup> is a continuation of the work reported on in the first interim report. Two of these blocks were located in Warwickshire with one block in Solihull Metropolitan Borough. The choice of these particular areas was based on the history of gravel extraction and the likelihood of future work based on the presence of exploitable gravel deposits.

The project mapped in the region of 700 sites covering archaeological remains from the Neolithic to the mid-20th century. Medieval ridge and furrow constituted 65% - 75% of these sites. 118 new records have been created in the Warwickshire HERs and a further 86 modified; the majority of the new records also related to ridge and furrow.

#### **Acknowledgements**

The project was initiated and carried out in collaboration with Warwickshire County Council Museum Field Service (WCCMFC). I would like to thank Emma Jones, and the WCC MFS team for their advice and assistance throughout the survey. English Heritage staff members Fiona Small, Edward Carpenter, Helen Winton contributed to this project by providing training, knowledge, maps and encouragement.

The project team would also like to thank the National Monuments Record Enquiry and Research Service team for their assistance and patience in providing the aerial photographs essential for this survey. English Heritage would like to thank the Cambridge University Unit for Landscape Modelling (ULM) for the kind loan of photographs from their Air Photo Library. All maps (other than geology maps) are reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. WCC Licence no 100019520 (2007). The Geology Maps are reproduced under licence from the British Geological Survey.

#### **Introduction**

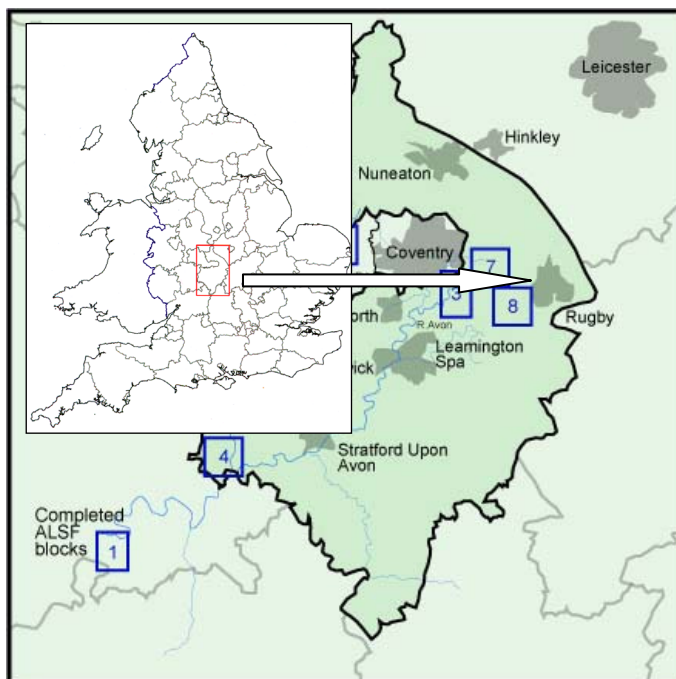
Warwickshire County Council (WCC) was required by central government to produce a Minerals and Waste Development Framework by 2007 to replace the existing Minerals Local Plan (WCC 1995). To inform this process Warwickshire Museum Field Services undertook a project to "Assess the Archaeology of Warwickshire's Aggregates Landscape". The project was funded by the Aggregates Levy Sustainability Fund (ALSF), which is distributed by English Heritage (EH) on behalf of the Department of the Environment Food and Rural Affairs (DEFRA).

The project design PD 4681 (Warwickshire County Council 2006) proposed that the archaeological evidence on all readily available aerial photographs should be surveyed to NMP standards (EH NMP Manual 2006).

Ten sample areas were identified for NMP survey, based on an assessment of those parts of the county likely to be affected by minerals extraction. The choice of areas to be considered and the rationale behind the choices made are described in the Archaeological Resource Assessment of the Aggregate Producing Areas of Warwickshire (Alexander 2007). The location of the areas is shown in Figure 1. Areas 1-3 were surveyed in between May 2006 and January 2007 and were reported on in an interim NMP report (Chadd 2007), which was incorporated into the report above.

Table 1: NMP Survey Block Locations

NMP Block	Location	Southwest Corner	Northeast Corner	Area Km <sup>2</sup>
4	Salford Priors	SP0550 405000 250000	SP1055 410000 255000	25
7	Brinklow	SP4075 440000 275000	SP4580 445000 280000	25
8	Ling Hall	SP4370 443000 27500	SP4875 448000 275000	25



Figures 1 and 2: Location of NMP Survey Areas

This interim report covers the second stage of ALSF funded archaeological mapping in Warwickshire and covers a further three blocks with a total area of 75 Km<sup>2</sup> (blocks 4, 7 and 8 in Figure 1). The survey includes large areas of superficial sand and gravel deposited by fluvial and glacial processes, and areas of hard rocks worked for crushed aggregates. Table 1 shows the location of the survey blocks in terms of OS grid references. The focus of block 4 is Bidford on Avon in the Avon valley and includes a small area in Worcestershire. Blocks 7 and 8 are adjacent to one another and are situated between Ryton on Dunsmore and Coventry. All the blocks include recently worked mineral extraction sites. (Marsh Farm, Brinklow and Ling Hall quarries).

The NMP survey work was carried out at the National Monuments Record Centre in Swindon to provide easy access to the EH aerial photographic collections and EH expertise. Photographs from the Cambridge University Collection (CUCAP) were also consulted. The Warwickshire and Solihull Historic Environment Record (HER) and its associated GIS mapping systems (MapInfo) were used to record the archaeology found on the aerial photographs. NMP block 4 (Salford Priors) includes parts of Worcestershire to the south of the river Avon between the A46 and Marcliff. The archaeology in this area was mapped and will be transferred to the EH AutoCAD based system, and monument records input into the EH NMR database, AMIE.

## Sources

### Photographs

All readily available aerial photographs from the NMR and University of Cambridge (CUCAP) collections were consulted. Table 1 below summarises the aerial photographs examined during this project. The RAF sorties of the 1940/50's, when combined, gave complete coverage of the survey areas. Sortie's flown by operators such as the Meridian Airmaps Limited in the 1960's and 70's do not provide complete coverage of any of the blocks but when combined with other sources an adequate coverage is achievable.

Although not taken for archaeological purposes the vertical photographs taken by the RAF provide a snapshot of the area in the 1940s capturing earthworks in a good state of preservation and crop mark remains of medieval ploughing in all the survey areas. The ephemeral archaeology of the Second World War was also present on these images particularly in NMP block 8. The later vertical photography taken mainly by the Meridian Airmaps Ltd and the Ordnance Survey document the increase in arable production in larger fields. A consequence of this is the destruction of the widely prevalent earthwork remains of ridge and furrow ploughing and hedge rows. The quality of the RAF coverage is variable from sharp and high contrast to unfocused, dull and nearly unusable. The latter case being infrequent and did not affect coverage. The post war photography is good quality. The first vertical photographs taken by the RAF date from 1946 there is no earlier M series photography available. In general there are images from every post war decade although the coverage of these images is not comprehensive. The earliest oblique photographs were two images taken of taken in 1930 of the crop marks beside the River Avon to the east of Bretford. These, plus one other, are the only pre-war photographs the remainder have been taken at uneven intervals, possibly to take advantage of particularly dry years, starting in the 1950's.

The oblique photography usually consists of multiple images taken over a number of years that when combined gave a full picture of each site. The main information on the oblique photography was crop marks occurring on the light soils overlying the sand and gravel prevalent in much of the survey blocks. James Pickering and Arnold Baker are responsible for taking a large number of the specialist archaeological oblique photographs of the Avon valley that are in the NMR collection. Without the efforts of these two enthusiasts the record would probably be a lot less complete. However some of their images were taken without considering the needs of transcription and lack control points, are often affected by noticeable grain and occasionally the focusing is less than pin sharp.

### Documentary Sources

The survey areas covered by this report are located in areas subject to quarrying, which is subject to planning controls. Under the terms of PPG 16 these sites and others like the A46 road improvements and the Newbold Pacey to Honeybourne gas pipeline have been subjected to archaeological investigation. The reports of these investigations published by Warwickshire Museum Services in a variety of forms including annual summary reports, an ongoing report series and as submissions to learned journals such as the Birmingham and Warwickshire Archaeological Society Transactions. Several of the sites mapped during this project have been partially investigated in this way and have provided some useful (if not comprehensive) dating evidence. The work by Hobley and Webster (Hobley and Webster 1965) that utilised many of the photographs taken by Pickering and Baker provided an overview of the distribution of monuments along the Avon valley similar to those mapped during the project.

	NMR Collection			CUULM Collection	
	Vertical Prints	Sorties	Oblique Prints	Vertical Prints	Oblique Prints
Block 4 Salford Priors	726	29	655	0	159
Block 7 Brinklow	425	31	493	53	44
Block 8 Ling Hall	315	30	781	1	22

Table 2 Print Quantity by Block

## NMP Block 4 - Salford Priors

### Geology

The rocks underlying the majority of the survey block are mudstones dated to the Jurassic / Triassic epochs. The Mercian Group, (sandstone) dominates the area with an abrupt change to Blue Lias formations along the valley of the Avon. The superficial geology has three main elements, which are illustrated in Figure 3. Firstly, the valleys of the two rivers, the Avon and Arrow, and their tributary streams have deposits of alluvium consisting of mixed sand, gravel and silts. In the same area there are potentially four river terraces deposited by geologically recent water movement. Secondly, there are large areas of sand and gravel deposited at the end of the last glacial event distributed throughout the centre of the block. Finally, the remaining areas have clay and silt soils derived from the underlying bedrock, which is predominantly mudstone in the west and limestone in the east.



Figure 3: Superficial Geology of NMP Block 4

### Landscape Character

The survey area bestrides the boundary between two Landscape Character Areas recognised by English Nature and exhibits attributes from both of them. For example; the higher ground to the west of the river Arrow valley is aptly described as an “ancient landscape pattern of small fields, winding lanes and dispersed, isolated hamlets” a category that is one of the key characteristics for the wider Arden landscape (English Nature 2008). However, within the same area, centred on Dunnington, there is a large area of fruit trees, which is a key feature of the Avon Valley landscape. The southern and eastern portions of the survey area, consisting of the land to the east of Arrow valley are dominated by settlement, particularly Bidford on Avon. Nucleated settlement patterns like this are again typical of Avon Valley Landscapes. The woodland in the northwest corner of the survey area is part of the landscaped park surrounding Ragley Hall, located 0.5 km outside the northern boundary of the survey.

### Summary of General Character, Dating and Distribution of Mapped sites

The presumably mobile lifestyles of early modern humans in the Avon Valley leave little or none of the monumental evidence that is usually visible on aerial photography but there are indications of their activities from other sources. A few Mesolithic flints were discovered during field walking. Excavations carried out prior to the realignment of the A46 found late Neolithic Grooved Ware pottery in a context suggestive of ceremonial activities (Palmer 1999 p34). These were thought to

be suggestive of peripatetic use. There are no definite large Neolithic monuments, such as Long Barrows, in the survey area and the environmental evidence from pollen samples to suggests that woodland clearance did not take place until the late Bronze Age (Palmer 2000 p41). This evidence and a general low level of Neolithic period stone axe finds throughout the West Midlands (Hingley, R 1996 p11) points to a lack of settlement before the early Bronze Age. The clearance of the woodland in the late Bronze Age seems to have been accompanied by a phase of land division, which continued into the late Iron Age and Roman periods (Hingley, R 1996 p12).

It is noticeable that all the crop marks mapped are located in areas of sand and gravel and not in the areas of clay soils (see Figure 4). Crop marks are a product of differential crop growth due to variations in soil moisture content (Mills J Palmer R eds 2007 page 16). In free draining soils on sand and gravel this phenomena becomes apparent readily as the soil moisture deficit increases quickly in response to dry weather conditions. Deep clay soils on the other hand retain moisture and an extended period of dry weather is required to raise the moisture deficit to the point where crops begin to be stressed and show changes in colour or height. A combination of an extended period without rainfall, a crop that responds to moisture deficit with physiological changes and an observer in the air at a time when the other criteria are present is required to spot crop marks on clay soils. This situation does not occur frequently and it is possible that there are other archaeological remains yet to be revealed. However the lack of evidence on clay soils could also indicate a preference in prehistoric times to take the easy option of working lighter soils where other factors such as population density allowed it. The excavated site to the east of Pophills Barn mentioned above (Palmer 1999 page 34), which left no visible signs of its existence is an example of the difficulties involved in predicting the presence of archaeology from aerial photographs.

The prehistoric crop marks mapped in this survey area are part of a wider distribution of prehistoric settlements, fields and funerary monuments that can be seen throughout the river terraces of the Avon. Webster and Hobbly have recorded many of these sites, including some of those within the study area (Webster and Hobbly 1965).

Compared to the other blocks in the survey there is less evidence of ridge and furrow ploughing appearing on the aerial photography of the 1940's. In this case about 15% of the land area is utilised in this way. In NMP Block 7 between the villages of Brinklow and Wolston the 1940 photographs show an almost universal ridge and furrow presence. The low level of evidence for medieval ploughing in this block may be a result of pre-war ploughing that not only reduced the earthwork remains but also removed the furrows that often remain as crop marks. Alternately, the location of the survey block in an area that has many of the characteristics of the Arden landscape may reflect the general pattern of mixed agriculture with more pasture and wood and less arable land (Dyer 1996 p 124).

### ***Prehistoric and Roman Sites***

There are about 30 sites within the survey area where crop marks that can be interpreted as prehistoric (see Fig 4). In general, these take the form of small (less than 1 hectare) rectilinear enclosures, usually solitary, separated from their neighbours and on differing alignments and are typical of late prehistoric settlements in the Midlands (Dark K and Dark P 1997) In contrast there are four areas where complexes of enclosures, tracks and pit clusters are found. The largest of these beside the River Avon covers up to 30 hectares. These complexes are comparable to numerous sites throughout the Severn and Avon Valleys, many of them described by Webster and Hobbly (Webster and Hobbly 1965). Excavated examples, such as those at Marsh Farm Salford Priors have proved to date to the Late Iron Age or Roman period (Palmer S. 1999).

Within the survey area there are several circular features many of which occur within the larger areas of crop marks described above and are possible domestic hut circles and small enclosures. There are however, three small circular ditches, MWA4984, MWA7074 and MWA12326 that are isolated from any other crop marks and share a uniform dimensions (13m-diameter, 1m wide ditches). All three are plausible as Bronze Age Barrows.

The most northerly of the extensive prehistoric sites in NMP block 4 is located to the north west of Pophills Barn (see Fig 5) and consists of two small rectangular enclosures, several incomplete ones, numerous pits and several ditches. The rectangular enclosures appear to be typical of small settlements dating from the late Iron Age with the circular elements possibly indicating the presence of huts, and some of the pits may be storage pits similar to those found at many excavated Iron Age sites. However a case could be put forward to place the curving ditches as

fragments of Bronze Age field boundaries like the gully found in the excavation in the field to east (Palmer S 1999). Field walking and excavation in the field to the east of this site, prior to the A46 road realignment, found evidence of activity dating from the Mesolithic to Early medieval. It is therefore probable that the origins of at least some of the crop marks seen at Pophills may be from within this broad date range.

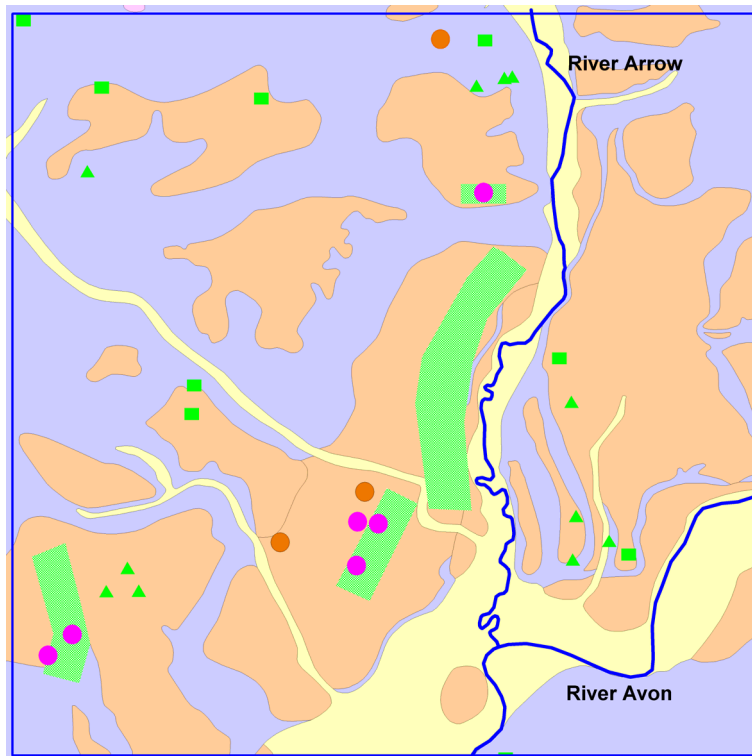


Figure 4: Superficial Geology and Distribution of Prehistoric Sites, NMP Block 4

- Key:
- Multiple Enclosures, Tracks and or Boundary Ditches
  - Single Complete Rectangular Enclosures
  - Single Partial Enclosures and/or Boundary Ditches
  - Pit Clusters
  - Ring Ditches

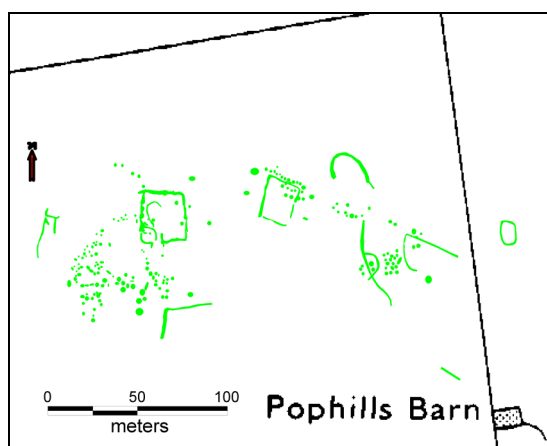


Figure 5: Crop marks at Pophills Barn MWA4908

At Salford Priors (MWA6291) the most noticeable feature is the substantial 400m long ditch flanked by numerous pits that extends across School Road to link with a partial enclosure (in the lower left of figure 6). Clusters of pits along boundaries like these are commonly seen in enclosures dating to the late prehistoric and Roman period. Similar examples can be seen within the enclosures at Lower Woodford (HOBUID 1344121) and Boscombe Down (HOB UID

1345647), which also display comparable broad enclosure ditches. The enclosures to the north of the road are also typical of settlements from the same period. The remains of huts within some of the enclosures are indicated by circular crop marks with appropriate dimensions, which would appear to support the assumption that they are parts of a settlement and associated fields.

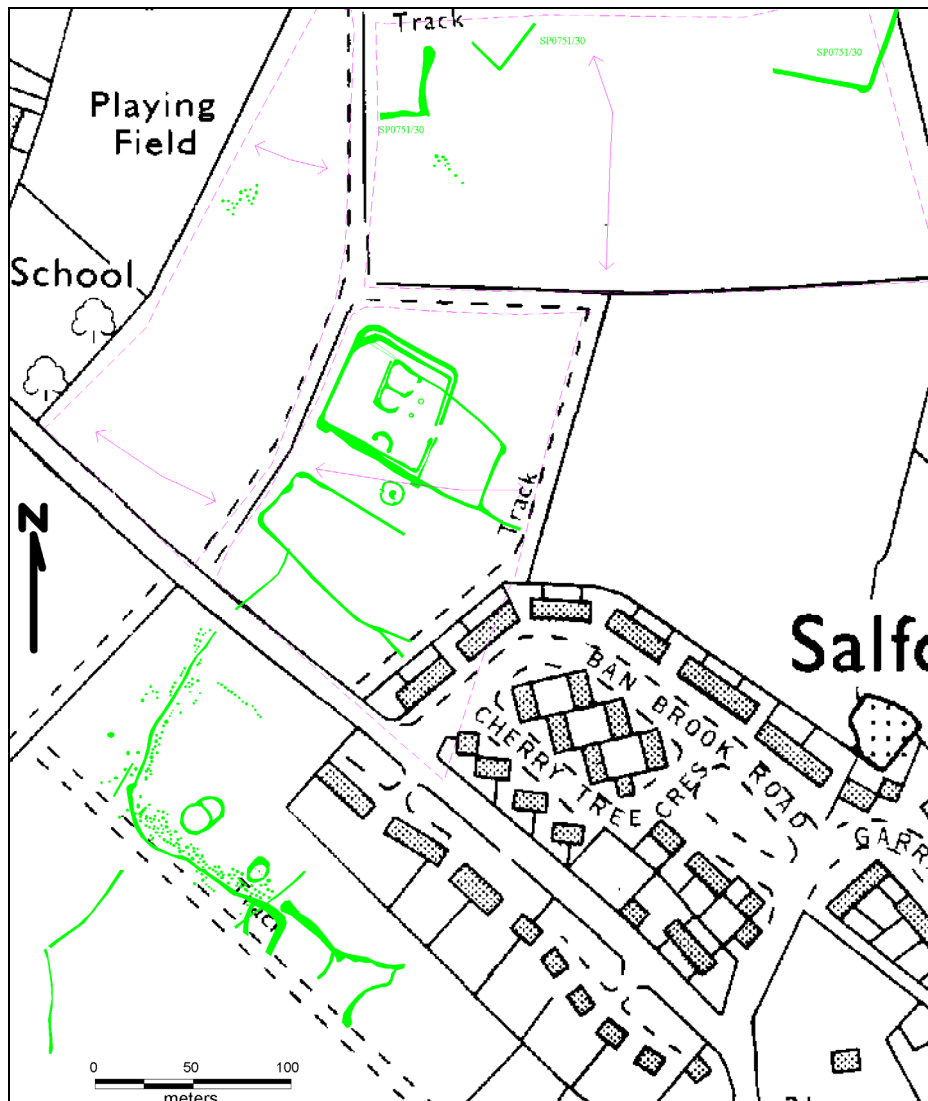


Figure 6: Crop marks at Salford Priors

The dense cluster of crop marks at Marsh Farm (Fig 7) have been partially excavated over a number of years in advance of gravel extraction and the construction of the A46 Norton Lenchwick bypass. The approximate extent of the road corridor and the Marsh Farm Quarry excavation areas are indicated by the broken lines (labelled A in Fig 7). The complex appears to be centred on a Roman villa (B Fig 7), which is a scheduled monument (SMA 162) and has not been excavated. A track way on the western edge of the crop marks (C Fig 7) is thought to be a drove way extending from the Roman Ryknild Street near Alcester (Roman *Alauna*) south across the River Avon near Bidford on Avon. The crop marks visible on aerial photographs, which generally align with this road and seem to represent the larger ditches associated with field boundaries, enclosures and track ways. The numerous houses, both circular in the Iron Age tradition and rectangular dating to the Roman period, which were uncovered during the excavations are not visible on available aerial photographs.

The settlement was in use for a long period from the late Iron Age into the fourth century AD. During this time the way the land was divided changed and the focus of settlement moved. An example of this can be seen in the excavations where a ditch was dug through the remains of an abandoned bathhouse in the late fourth century (Palmer 1999 p98). Several centuries of occupation has left the confused inter cutting crop marks seen today, which without the excavation

work, would be dated using morphological similarities to other known sites, a speculative process at best. Similarly the phasing of crop marks like these is difficult or impossible to decipher using only evidence apparent on aerial photography. The large curving ditch (D Fig 7) and the hedge line (E Fig 7), which mirrors its shape, when considered together could be construed as a large Neolithic henge. However, the ditch proved to be a short lived late, possibly post, Roman construction that was backfilled (Palmer 1999 page 99)

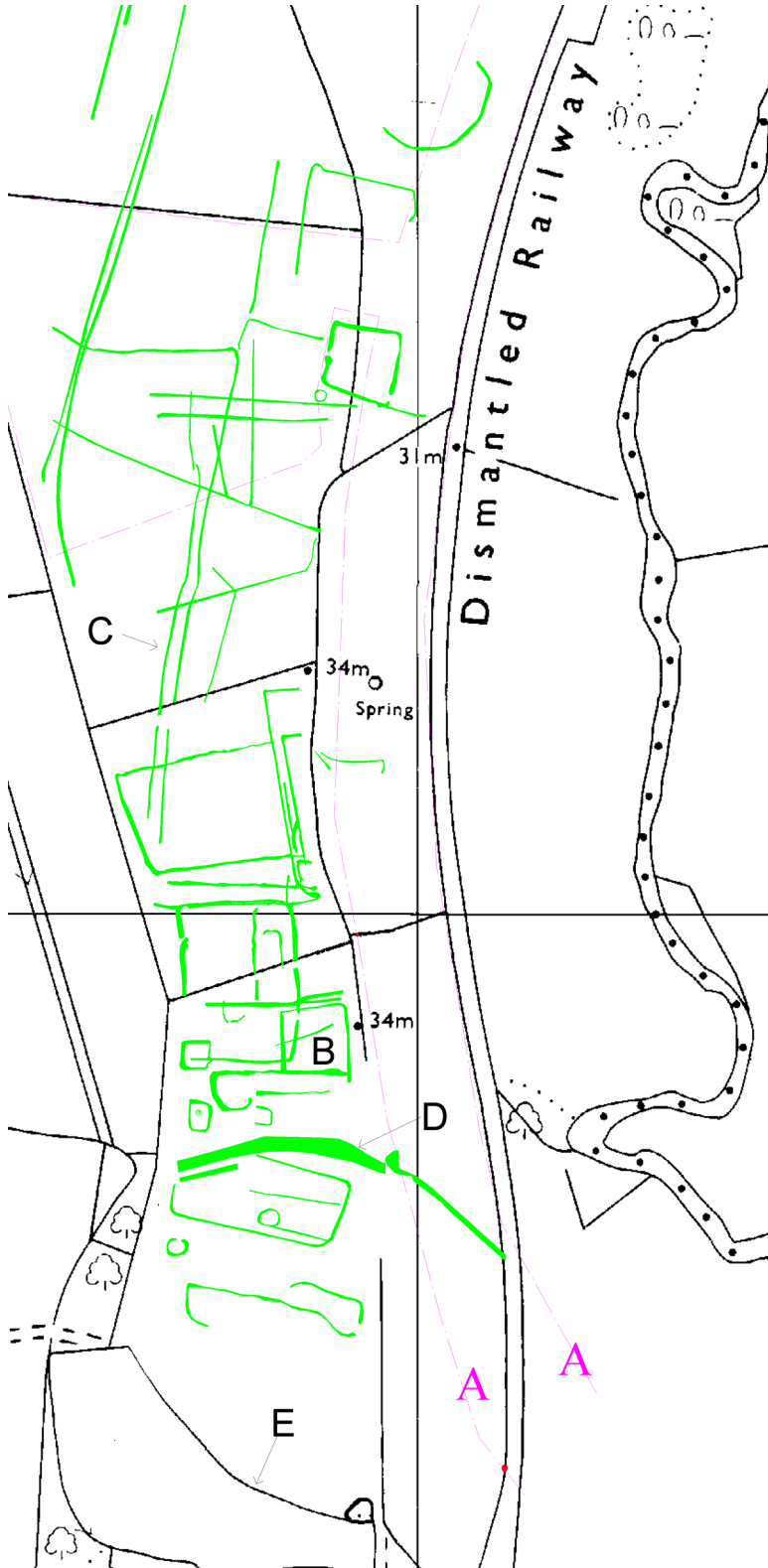


Figure 7: Crop marks at Marsh Farm, Salford Priors



At New Inn Farm an 8-hectare area (SP054507) appears to have much in common with the Iron Age/Roman Marsh Farm site having enclosures, tracks ways and circular crop marks of similar appearance, which also apparently share a common alignment. Although no pit clusters were recorded at Marsh Farm, the pit clusters found here are present at every other large site on the western side of the river Arrow within the survey area. Unlike the Marsh Farm site the area has not been subject excavation so the dating given in HER placing it in the Iron Age or Roman period is conjectural (MWA 1498) but is consistent with the appearance of the crop marks. A relationship between the complex of crop marks to the south of New Inn Farm and the smaller isolated enclosures to the north is possible. Woodland clearance appears to have started in the late Bronze Age when soil erosion caused by winter ploughing is evident in alluvial soil samples (Palmer 1999, 217). If woodland clearance continued over an extended period the enclosures may represent the prehistoric equivalent of medieval assarting although this must be speculation. The absence of further crop marks in the area between the known sites may also be due to the clay soils.

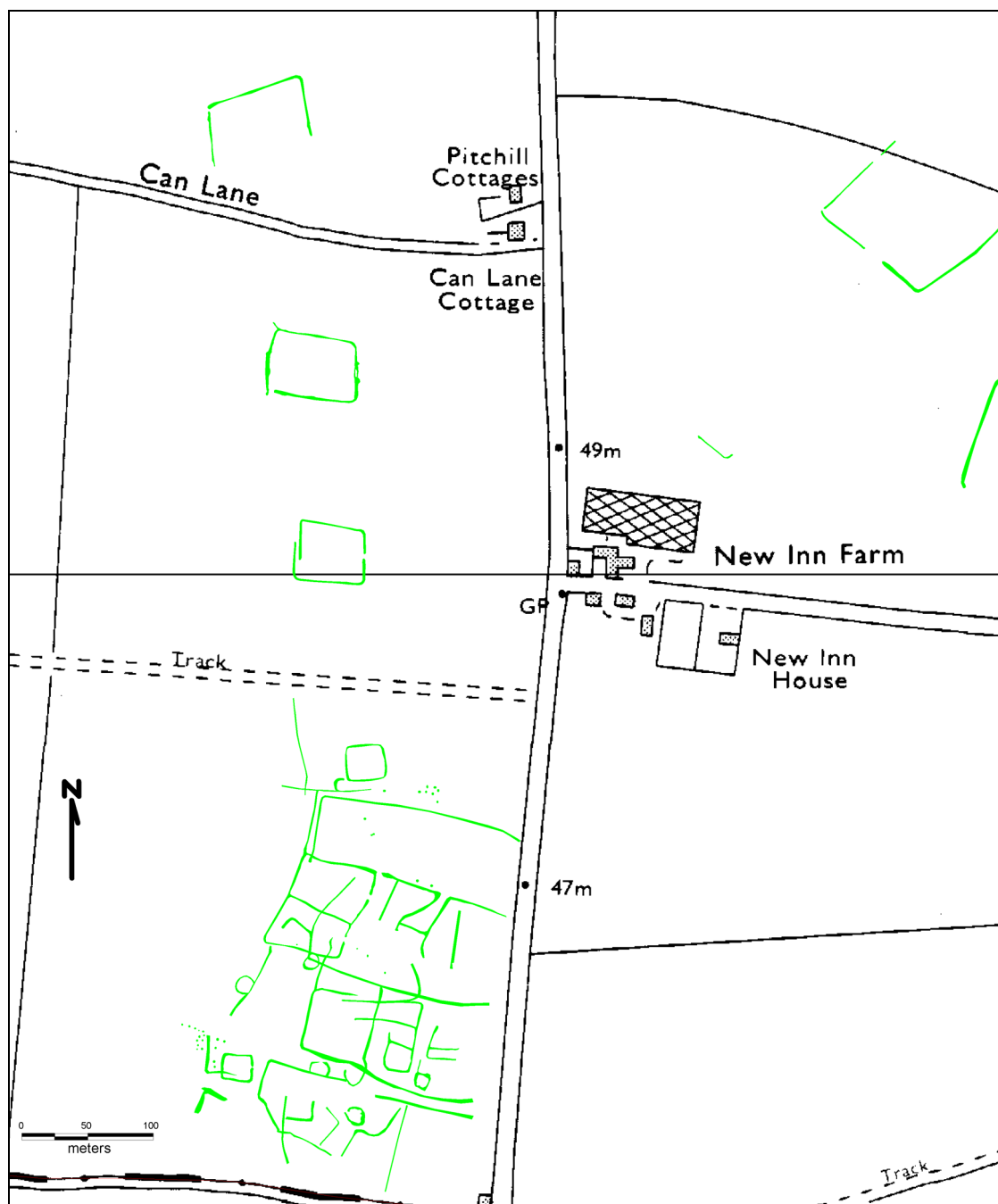


Figure 8: Crop marks at New Inn Farm (SP054507)

Crop marks beside the Small Brook to the southwest of Bidford on Avon and Salford Road represent the smallest of the complexes of crop marks in NMP block 4 (Fig 9). They occur on a ridge of gravel and some of them may be due to underlying geological features, such as ice wedges formed as the glaciers retreated. This may account for the rounded form of the partial enclosure in the south west (of Fig 9), although an early Bronze Age date would also explain the shape. The double ditched partial enclosure although incomplete appears to fit the pattern of Iron Age and Roman settlements found in the block and may even contain a villa. In contrast to the settlements on the western side of the River Arrow there is no evidence of associated field systems but in common with New Inn Farm smaller enclosures are evident nearby, although these too are incomplete.

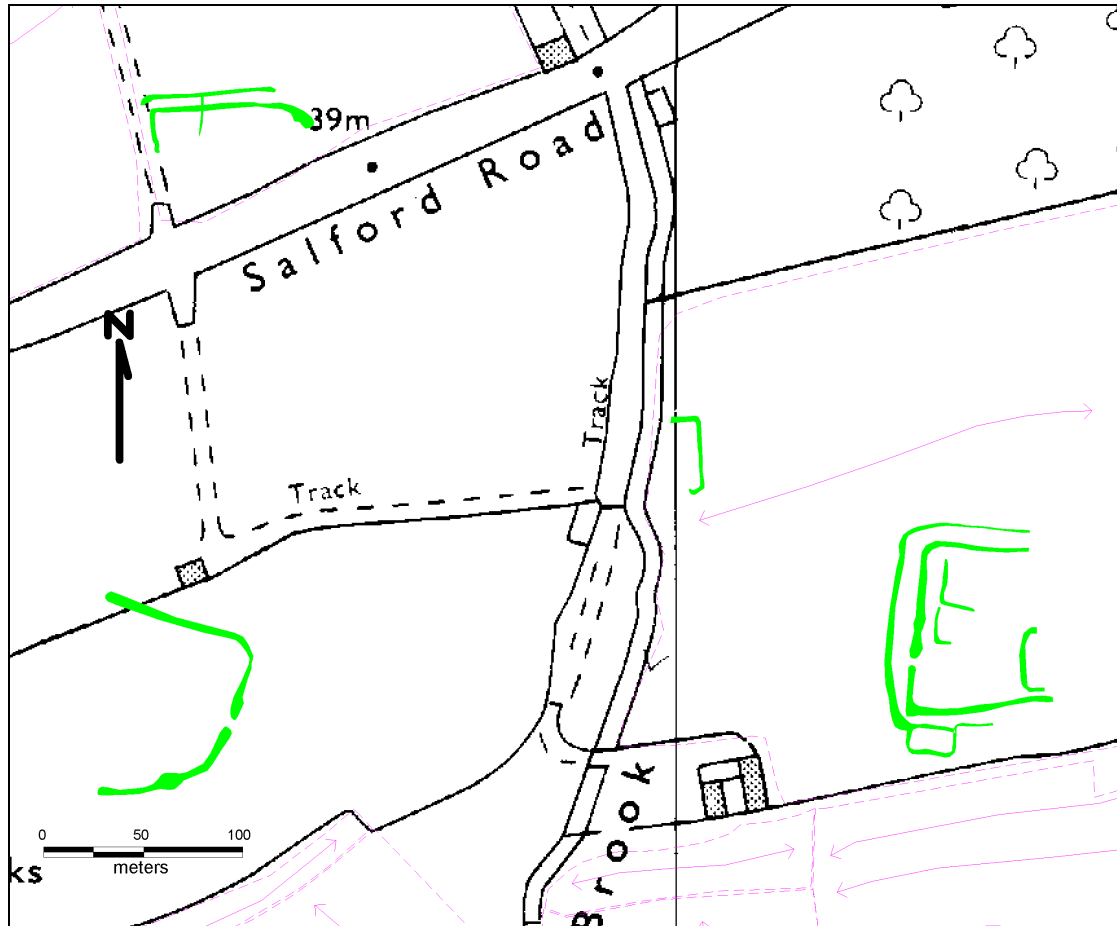


Figure 9: Salford Road. Mapping of Late Prehistoric / Roman Settlement Enclosures

### **Anglo Saxon**

The 1993 excavations (Palmer 1999 page 197) revealed three sunken-featured building and one post built structure as well as small quantities of pottery and metalwork from the 5/6 century. There are faint crop marks in the same field as the excavation but these appear to be the result of recent manure spreading.

### **Medieval**

The aerial photographs of the 1940's show that medieval ridge and furrow ploughing was practised in many of the fields within the survey area but there is a difference in the density of evidence depending on location. It is more frequent in the fields to the east of the block where, except in woodland and wet riverside meadow, the majority of the area was probably under plough in the 13th century, as was most of the land in the Feldon (Dyer 1996 p 122). The western side of the River Arrow has fewer fields with evidence of ploughing. There are indications that land making up the Arden Forrest was more heavily wooded with more pasture and meadow than the rest of Warwickshire (Dyer 1996 p 124), which may explain this. Alternatively, early use of mechanised equipment to plough the light soils over sand and gravel may have obliterated any

evidence of medieval ploughing that may have existed before the RAF photographed the area in the 1940's.

### **Post medieval**

The evidence of post-medieval activities such as brick works, windmills and railways is adequately represented on the various editions of OS mapping consequently little of post-medieval date was mapped. The exception to this is the early to mid twentieth century Women's Land Army Hostel at Park Hall, Salford Priors. This site was named on the 1955 OS maps but without any detail. A range of unusual linked cruciform temporary buildings was constructed in the grounds of the Hall. These appear to be dormitory buildings, which would have housed a large number of the 80,000 members of this organisation. There are also several other service buildings of a more typical form and emergency water supply tanks. The date of construction of these buildings must fall within the lifetime of the organisation, which was founded in 1915 and was not finally disbanded until 1950 (Powell and Westacott 1997). Some of the buildings were still standing in 1973 but in a derelict state. (AP SP0651/7).

### **NMP Block 7: Brinklow**

#### **Geology**

The underlying rocks in most of the area are uniformly Mercian Mudstones. In the southeast corner of the survey area a transition occurs with bands of clay, mudstone and shale, which eventually, in the very south eastern corner of the block, are replaced by Rugby Limestone. The superficial deposits described below have a greater impact on the landscape than the bedrock except in the Avon valley where the superficial deposits have been washed away by the river.

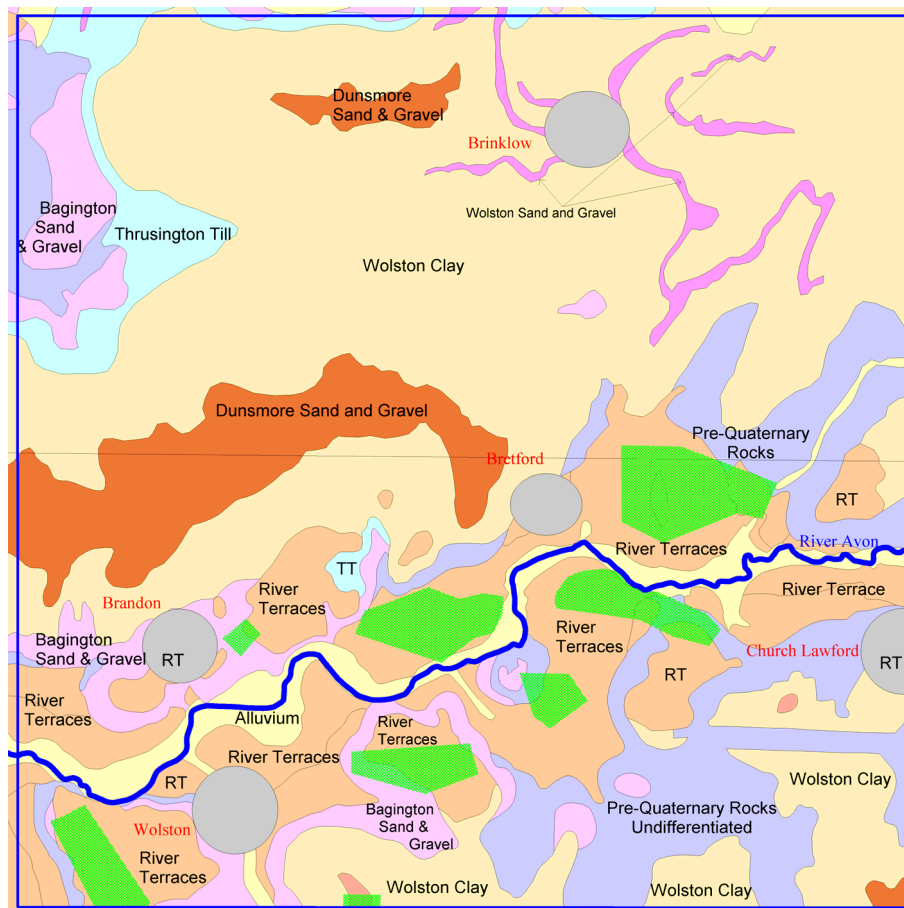


Figure 10: Superficial Geology and Distribution of Prehistoric sites, NMP Block 7 (The Green shaded blocks denote areas where concentrations of prehistoric sites have been mapped. Note that these blocks are all located in areas of sands and gravels on the River Avon's four terraces)

Deposits of glacial origin and re-disposition dominate the superficial geology of the block. To the north of the river Avon deposits of Wolston Clay are interspersed with areas sand and gravel. Alluvial deposits are apparent in a narrow band beside the river Avon and there are up to four

terraces identified. These terraces and the glacial sands and gravels such as the Bagington deposits produce free draining soils. In the south of the block the clays appear again although they appear to be more calcareous in nature.

### ***Landscape Character***

The place names in the surrounding area give a good clue to the past character of the area. "More" as in Ryton on Dunsmore and Stretton on Dunsmore points to the area being heath land, which it was. The "dun" in Dunsmore also suggests that this low plateau of glacial deposits ranging from Cubbington near Leamington Spa and Hillmorton, a suburb of Rugby, was a grey and brown landscape in Saxon times. The first edition OS map shows that most of the survey area was enclosed with hedged fields with an area of about 5 acres (2 Hectares). The fields were usually rectangular but did not always have straight field boundaries and many of them were long and thin. It is common for these skinny fields to be 200m long but a few exceed 500m. Very few of them are wider than 100m. Examples of rectangular fields containing several discernable parallel strips of ridge and furrow ploughing that could be traced into adjacent fields also existed. The picture presented appears to indicate that enclosure took place over a long period using a variety of mechanisms including Parliamentary Acts but without a rigorous surveyor. The northwest corner of the survey block has slightly different character having more woodland. This appears to be related to the presence of Combe Abbey, which became a residence after the Dissolution in 1540 and was subsequently enclosed as a park in the 17C (VCH Salzman, L F, (ed), 1951 page 72). Although there are remnants of the post medieval field pattern remaining today many of the small fields have been amalgamated to cater for modern agricultural practices using large machines.

### ***Summary of General Character, Dating and Distribution of Mapped Sites***

There are eight groups of crop marks, all located on the terraces of the River Avon that can be considered to be of potential prehistoric or Roman date. The crop marks mapped appear to have two elements to them. A number of them are early funeral monuments that date from Neolithic to the Bronze Age. The other category contains agricultural and settle evidence of the later prehistoric and Roman periods. The two types of monument often occur in the same area. The lack of evidence for domestic sites in the Neolithic period is not unusual (Hingley R 1996 page 11).

The northern half of the survey block generally has heavy clay soils where crop or soil marks usually only appear in exceptional circumstances, however within this area there are bands of Dunsmore sand and gravel where crop marks would normally be expected (See Figure 10). This is certainly the case in the area around Church Lawford to the south, which has similar geology and topography, and is populated with many sites. There are many possible explanations for this deficiency, including a genuine lack of sites, lack of systematic reconnaissance and the particular properties of the soils and geology affecting the formation of crop marks. A more detailed examination of the geology may reveal that the areas of sand and gravel are covered with a wash of clay that cloaks the archaeology, or there may have been dense forestation that discouraged prehistoric settlement, or the areas colonised before the medieval period were sufficient to support the prevailing population densities without the need to exploit areas that otherwise would seem to be eminently suitable.

### ***Prehistoric and Romano-British***

See also Figure 10 above.

The crop marks between the River Avon and the Coventry Road appear to range in date from the later prehistoric to roman periods. The large 30m-diameter ring ditch (Fig 11 "A") is possibly the remains of a Bronze Age barrow although similar circular features at Charlecote have been dated to the Neolithic (Ford, W.J. 2003).

The concentric circular ditches HER (MWA5409) (Fig 11 "B") and the crop marks surrounding it are difficult to categorise. The presence of geological features visible in varying clarity on the photographs extending from the road towards the archaeological stuff beside the river also complicates analysis. This natural geological phenomenon may be responsible for the small sub circular crop marks and the dark macular feature mapped. There are other faint crop marks on the photographs that may be either manmade or natural that were not mapped. Taking these caveats into consideration the largest of the features, the concentric annular ditches, could be a "fancy barrow" at the centre of a barrow cemetery or a multiphase barrow with smaller satellite barrows or it could be a funerary enclosure. The conjoined circular features in the northwest

corner of the field are ill defined on the available aerial photographs and are possibly two separate rings which could either be the remains of two Bronze Age barrows or hut circles but on the evidence available it is impossible to say. Given the closeness of the river and the Neolithic enclosure to the east the cemetery explanation could be more likely.

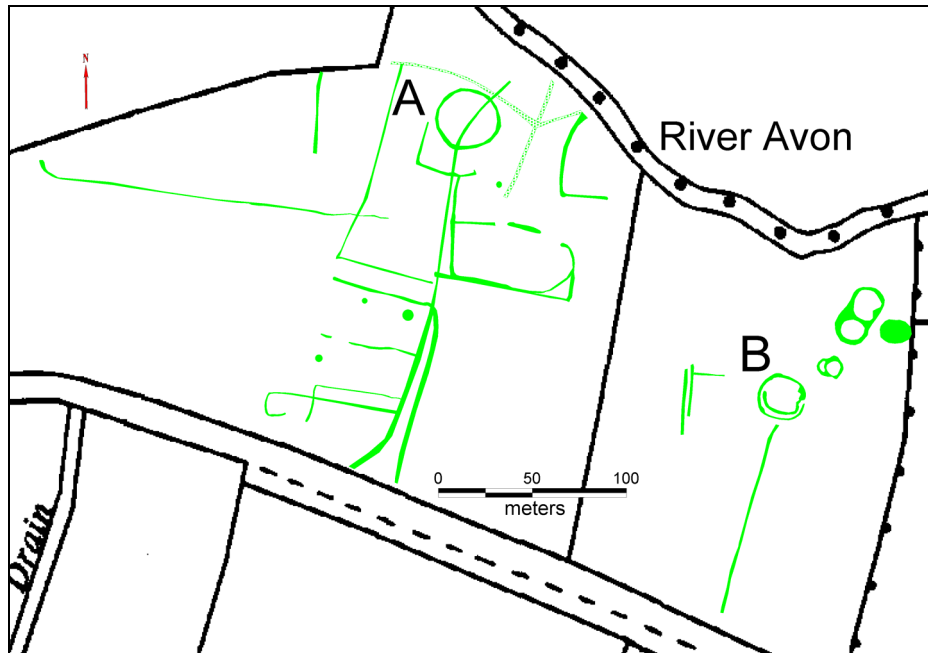


Figure 11: Prehistoric Crop marks beside the River Avon to the East of Bretford

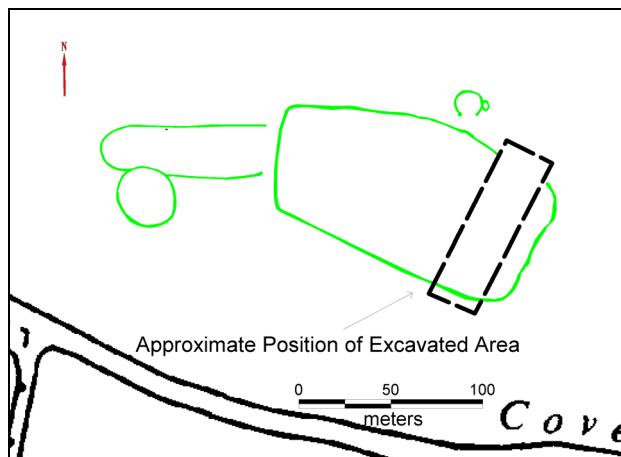


Figure 12: Possible Neolithic Mortuary Enclosures between the River Avon and the Coventry Road to the east of Bretford

The Churchover to Newbold Pacey gas pipeline corridor (Palmer S 2000) passed through the eastern side of the two enclosures in the eastern most part of the area illustrated in figure 12. The excavation preceding the pipeline work revealed that the southern ditch of the eastern enclosure contained pottery from the Neolithic period. A series of pits was also discovered within the enclosure containing assemblages of artefacts, which were deposited in a manner that implied ritual activity. The deposits included pottery dating from the Neolithic to the Bronze Age, which suggests a long period of use. The western enclosure and the ring ditch that impinges on its southern side appear share the same ditch, which would indicate that they were either dug at the same time or that the enclosure ditch utilised the existing ring ditch. Unlike the eastern enclosure there is no excavation evidence to date these two features but their proximity and morphology suggests that they are related. Neolithic ring ditches of a similar size have been identified on the Avon's gravel terraces such as those at Charlecote (Ford, W.J. 2003). Roy Loveday (Loveday, R. 2003 page 31) includes this site (labelled as Church Lawford) in an illustration of sites similar to the mortuary enclosure at Charlecote but it looks incongruous when compared with the other sites unless only the western portion is considered. However, in the Lincolnshire wolds there are sites

that are described as mortuary enclosures that share many similarities (Jones, D. 1998). The comparisons include trapezoidal forms with long dimensions in excess of 100m, occasional paired monuments (which this site appears to be), ring ditches in close proximity and a situation near to a river. None of the Lincolnshire examples have the same combination of attributes on the same site and none have a ring ditch with such an intimate relationship with a long enclosure.

The area to the east of Willow Farm and to the north of the River Avon has crop marks that appear to have been created over a long timescale. The circular ditches have the appearance of belonging to the Neolithic or Bronze Ages when funerary monuments of this type were being created in settings that include a river. The monuments are similar to those described above on the southern bank of the river. Crop marks like these are found throughout the river valleys of the midlands and can be seen in Webster and Hobley's monograph (1965).

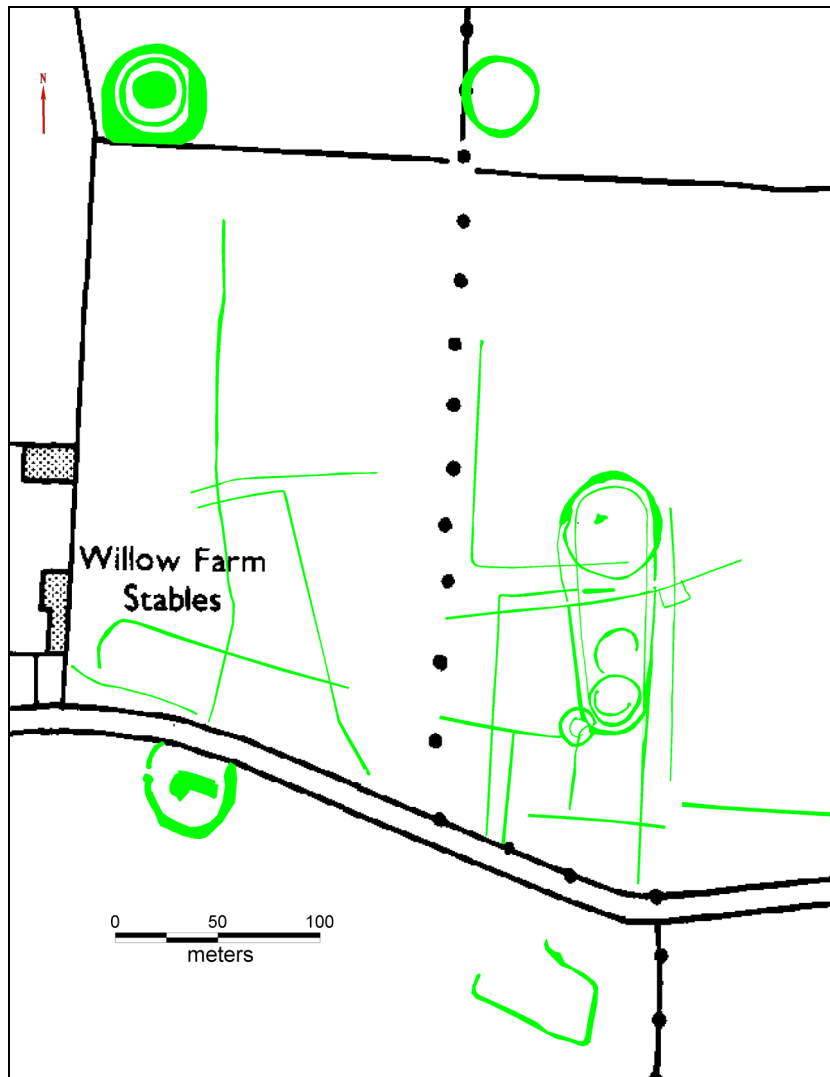


Figure 13: Willow Farm Bretford, Possible Neolithic/Bronze Age Funerary Monuments and Late Prehistoric Field System

The linked ring ditch complex seen in the southeast corner of Figure 13 has been subjected to excavation on two occasions, in 1968 by Simpson as part of the Avon Severn Valleys Research Project (Simpson 1969) and again in 1990 in advance of a gas pipeline installation (Palmer 2000). In both excavations artefacts from the Mesolithic to the Bronze Age were found including pottery sherds usually associated with funerary urns. Neither of the excavations conclusively established the relationship between the ring ditches and the enclosure ditches or the phasing of the site. The inner of the pair of enclosure ditches was considered by Palmer to extend across the road to link with enclosure seen there. This is speculative and possibly results from using sketched mapping from aerial photographs. The mapping created using modern rectification software arrives at subtly different alignments for the enclosure ditches, which does not support this assertion. Within

the northern ring ditch the remains of a slight mound, which was deliberately slighted in the 1950s (Palmer 2000) to facilitate ploughing, and does not show on available aerial photographs, was found during the excavations. Turf built mortuary chambers, such as that located at Charlecote (Ford 2003) are found in the Avon valley but in this case pits were discovered within the central mound that were interpreted as part of sixteenth century rabbit warren noted in documentary sources.

The three other large (approximately 30m diameter) circular features in close proximity to the mortuary enclosures complex are all different to each other. The relationship between these features and the mortuary features is not established other than the fact that they are in close proximity and are a type of monument that would be reasonable expected to be of the same period as has been found in other sites in the Midlands. The north-western example is a double or triple ditched circular barrow. The aerial photograph that showed the inner ditches most clearly also had a broad halo of dark crop that may be of geological origin but which was mapped as a third outer ditch for completeness. Other workers, such as Hobbs and Webster, have described the central circle as being made up of a ring of pits. This evidence for this interpretation appears to be based on some photographs where the outer ditches are very faint. The photograph chosen for mapping showed the central portion as a macula. The south-western ring ditch appears to have an entrance in its southern side, which, if it is a contemporary feature, suggests that this might be a small henge. There is evidence from the excavations in the vicinity (Palmer 2000) that small-scale exploitation of sand and gravel has taken place at intervals since the medieval period. The dark crop mark in the centre of this feature may be an example of this. The north-eastern example has similar dimensions to the ring ditch on the southern side of the river (A on Fig 11) and the same description seems appropriate for it. The 1999 excavation not only found the early prehistoric features mentioned above but also Roman artefacts that suggest the linear ditches that can be seen in figure 13 form part of a Roman field system. Both the 1968 and 1990 excavations dug trenches that cut the north-south orientated ditch on the eastern side of the mortuary enclosures. Post medieval artefacts were recovered on both occasions, adding a further layer of agricultural field boundaries or drainage ditches to an already complex picture

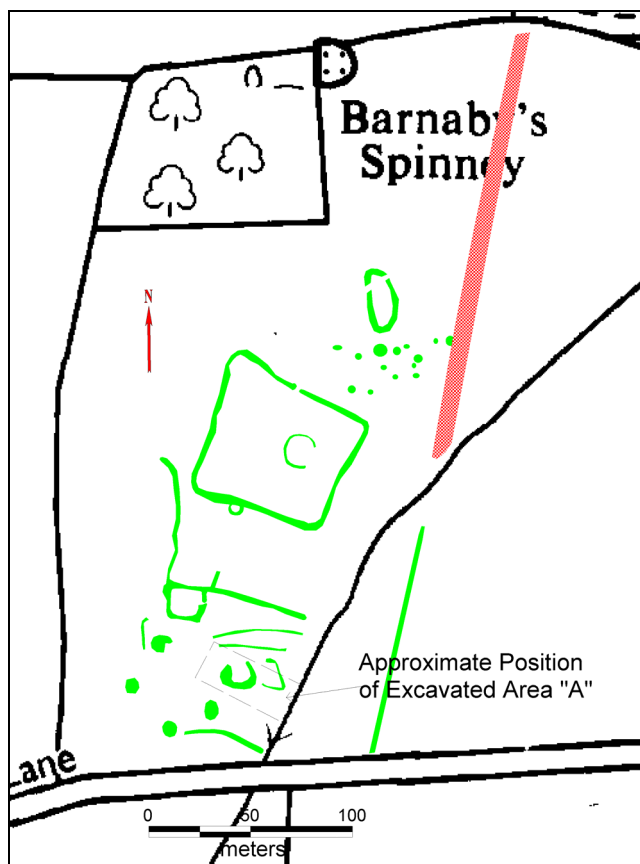


Figure 14: NMP Block 7 Iron Age Enclosures at Barnaby's Spinney (the rectangle marked with dashed lines is area A in the 2003 Warwickshire Museum Field Services excavation report)

The crop marks mapped at Barnaby's Spinney (Fig 14 above) have the appearance of a late Iron Age or Roman settlement with a possible hut circle in the larger enclosure. The crop mark that is partially within the north-eastern portion of the excavation area marked on figure 14 was found to contain a group of pits. The contents of the pits had artefacts that could be dated to the late Bronze Age and Iron Age, which tends to confirm the dating based on morphology. The western edge of the excavated enclosure had been quarried away at some time in the medieval or post medieval period. The crop marks in the south-western part of the field are therefore likely to be a result of this quarrying. The bank marked in a red stipple looks as if it is a medieval plough headland and the linear crop mark, which appears to be in alignment with it is, seems to be an unrelated drainage ditch.

The sub circular feature to the north west of Meadowside Farm appears to be an example of the Neolithic or Bronze Age funerary enclosures or large barrows that are commonly seen on the river terraces in the Avon valley. Similar examples have already described at Bretford 1Km to the north east of this site. The sub circular shape and the presence of the two larger pits, if they are from the same time period, make this monument different to the other examples.

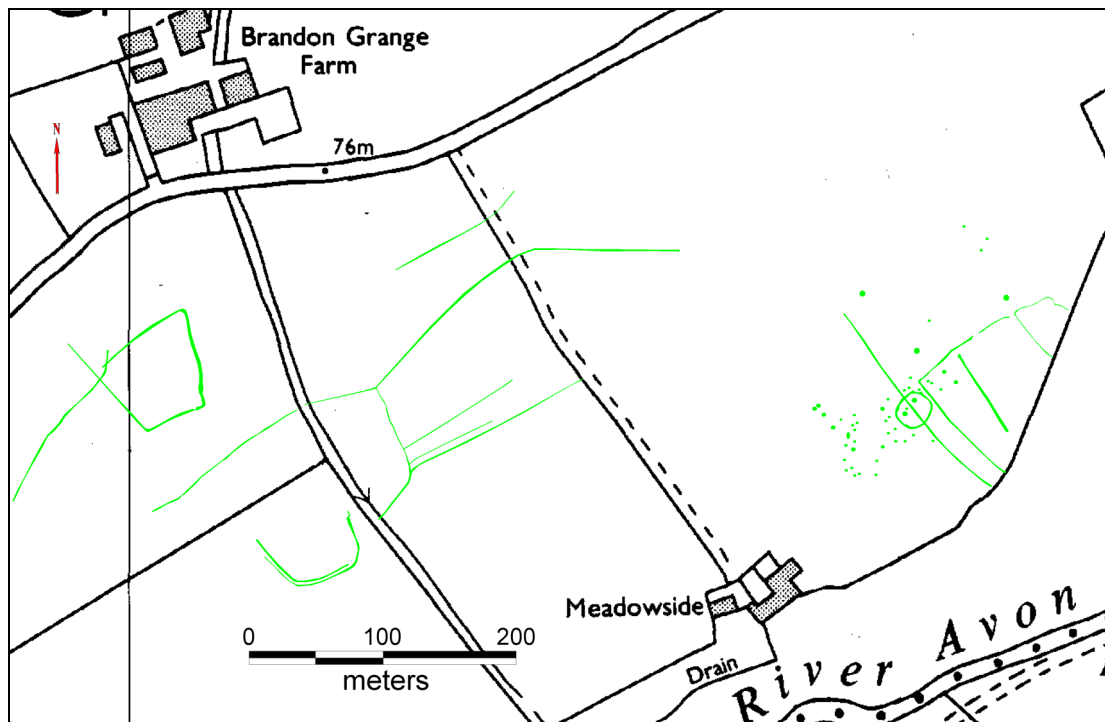


Figure 15 Crop marks on the river terraces near Brandon

At first glance the linear crop marks mapped in figure 15 all appear to be field boundaries however, there are slight variations in morphology that need explanation. Starting in the northwest corner of the figure near Brandon Grange Farm the sinuous ditch is most likely to be a post medieval drain. The straight ditch with a NW-SE orientation is possibly part of the rectilinear enclosure or a remnant of the ridge and furrow ploughing that is present in the field. The enclosure already mentioned is quite possibly an Iron Age feature similar to many others in the survey area. The U shaped double ditches in the southwest corner could easily be of a similar date to the enclosure but the distance separating them is suspiciously similar to those of modern tractor tracks, which makes date estimation difficult. The central group of ditches is comparable with the group to the east of Meadowside and are typical of late Iron Age or Roman field systems seen in the survey area such as those excavated at Marsh Farm. The scatter of pits to the north east of Meadowside is typical of Iron Age storage pits, like those excavated at Barnaby's Spinney (Palmer 2003), found in settlements. The presence of the sub circular possible mortuary enclosure adds the prospect of other interpretations for the pits.

The two ring ditches mapped at "Two Acres" (Fig 16) and the two complete ones at "The Cottage" (Fig 17) are probably the remains of Bronze Age funeral mounds although a Neolithic date is also possible (Loveday, R 2003). The crop marks are similar in size and are in a comparable topographic setting to the other circular ditches described in this report and represent a class of



monument seen throughout the Avon Valley. The smaller circular features seen in both figure 16 and 17 cannot be so easily categorised as their larger neighbours. On the available aerial photographs they are less well defined and could be construed as being part of the modern quarrying seen at Two Acres or as having a relationship with the field boundaries at "The Cottage". The linear ditches mapped at "The Cottage" are probably field boundaries dating, on the basis of other similar example in the survey area, to the late Iron Age or Roman period although this must be tentative on such slim evidence. Certainly they do not align with the areas of medieval ridge and furrow which only means they could be earlier or later than the ploughing but not contemporary with it.

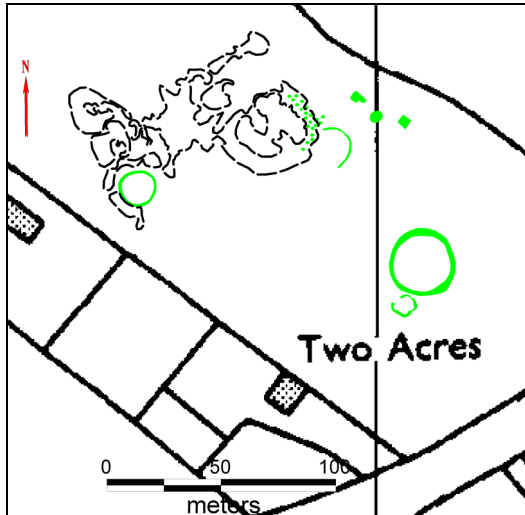


Figure 16: Marston - Two Acres (the areas shown in a black broken line are crop marks associated with small-scale gravel extraction, the two complete circular crop mark ditches are probable ploughed out Bronze Age barrows)

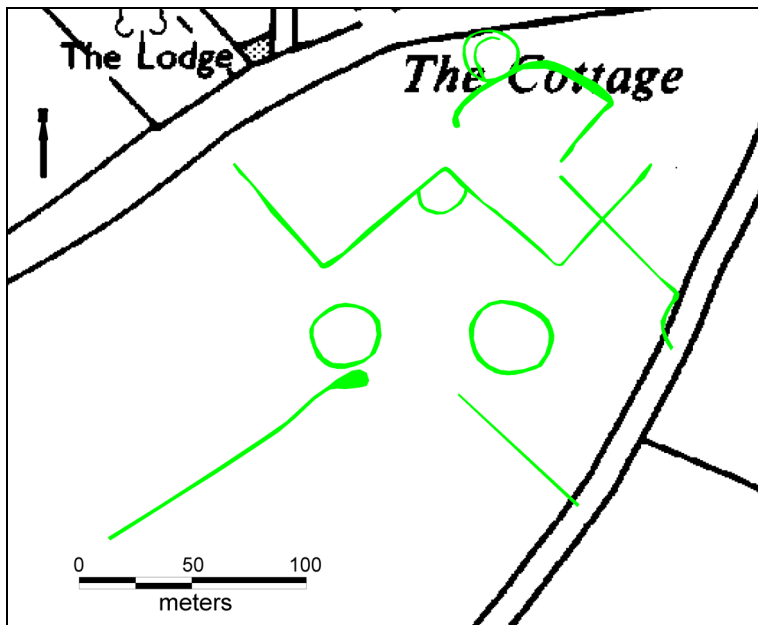


Figure 17: Marston - The Cottage, (the two central circular ditches are probable ploughed out Bronze Age barrows, the remaining crop marks are possibly part of a late Iron Age or Roman settlement/Field system)

### **Anglo-Saxon**

To the north of the Bronze Age ring ditches in Figure 16 there are three small rectangular crop marks that English Heritage colleagues Fiona Small and Ed Carpenter (pers comm) consider to be possible shrunken featured buildings or Grubenhauser from the migration period.

### **Bretford River Crossings**

The bridge, built in the 18<sup>th</sup> century to a medieval design, spanning the river at Bretford (Sapcote 1951 page 32) is the most recent manifestation in the long history of river crossings in this location. The presence of an earlier bridge can be inferred from court records from the late 17<sup>th</sup> century, which detail the deficiencies and repair of a stone structure (Sapcote 1951 page 32). This is possibly the “stone bridge” shown on the road maps published by Ogilby in 1675 (plate 62). The hollow way that can be seen on aerial photograph SP4377/118 crossing the meadow to the south of Bretford leading to a narrow point in the river Avon shown on the first edition OS map may be an indication that the medieval bridge was on a different alignment to the current structure. The earthworks on the northern bank of the river appear to be a hollow way that aligns with the course of the Roman Foss Way and to locate the position of the ford that preceded the bridge. Field boundaries in this area of Warwickshire appear, on aerial photographs, to be a combination of hedges and ditches unlike the field boundaries of Somerset, Devon or Cornwall, where hedges grow on earth and stone banks. The enclosure “B” on figure 18 with its earth banks is therefore unusual even though its eastern side seems to be formed by the current field boundary. Its alignment with the road suggests a relationship between them but what that is uncertain, as is the function of the feature.

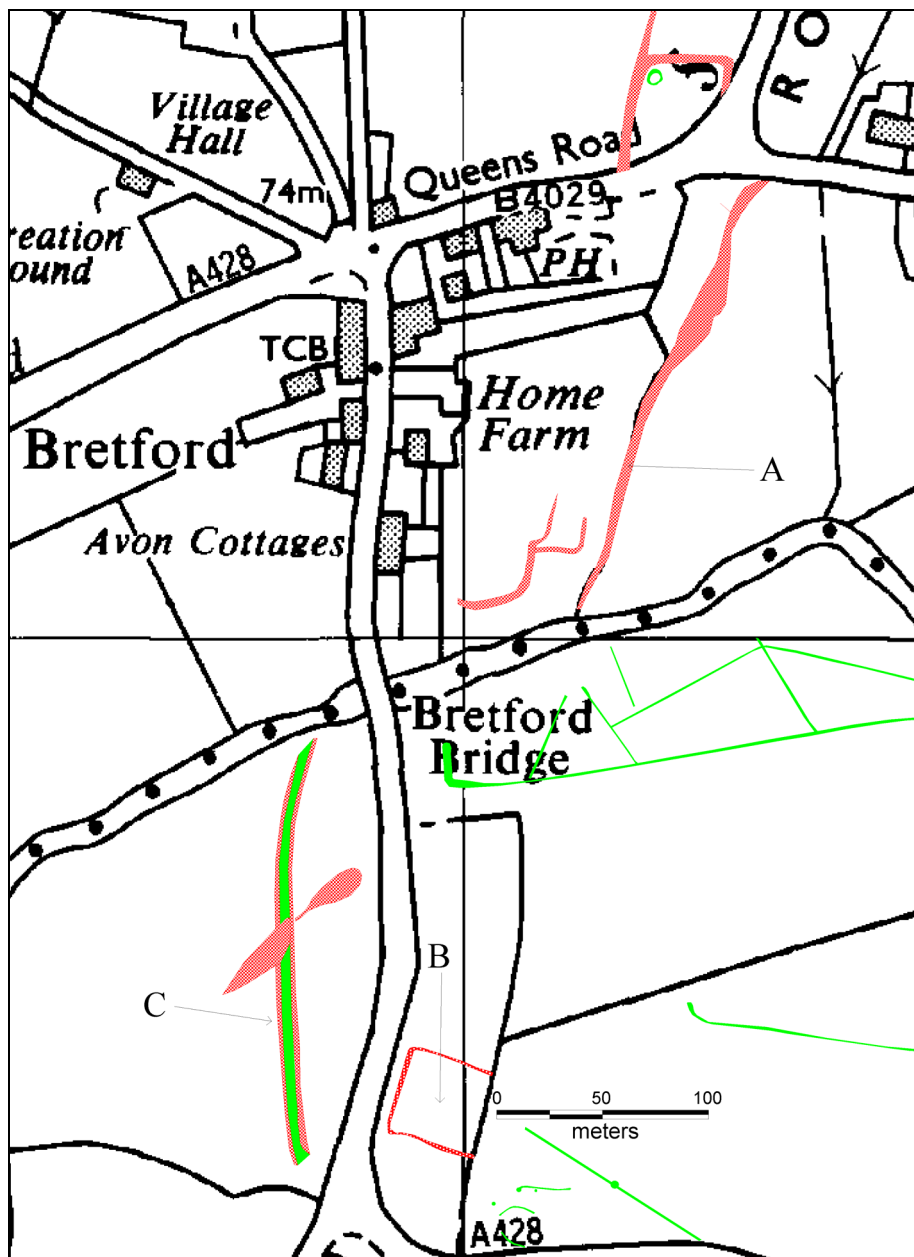


Figure 18: Features associated with the river crossing at Bretford

### Medieval

There is abundant evidence in the form of earthwork ridge and furrow on the aerial photographs taken the 1940's to show that the majority of the survey area was cultivated in the medieval period. Figure 19 shows an area to the southwest of Brinklow. Each of the areas outlined in magenta dashed lines represents the extent of a block of levelled ridge and furrow. The double-headed arrows indicate the direction and form of the ridges. As can be seen, with a few exceptions, all the fields have been ploughed using medieval methods. Where it is not present it is possible that mechanised ploughing introduced in the late 19<sup>th</sup> century has obliterated the evidence before the RAF systematically photographed the area.

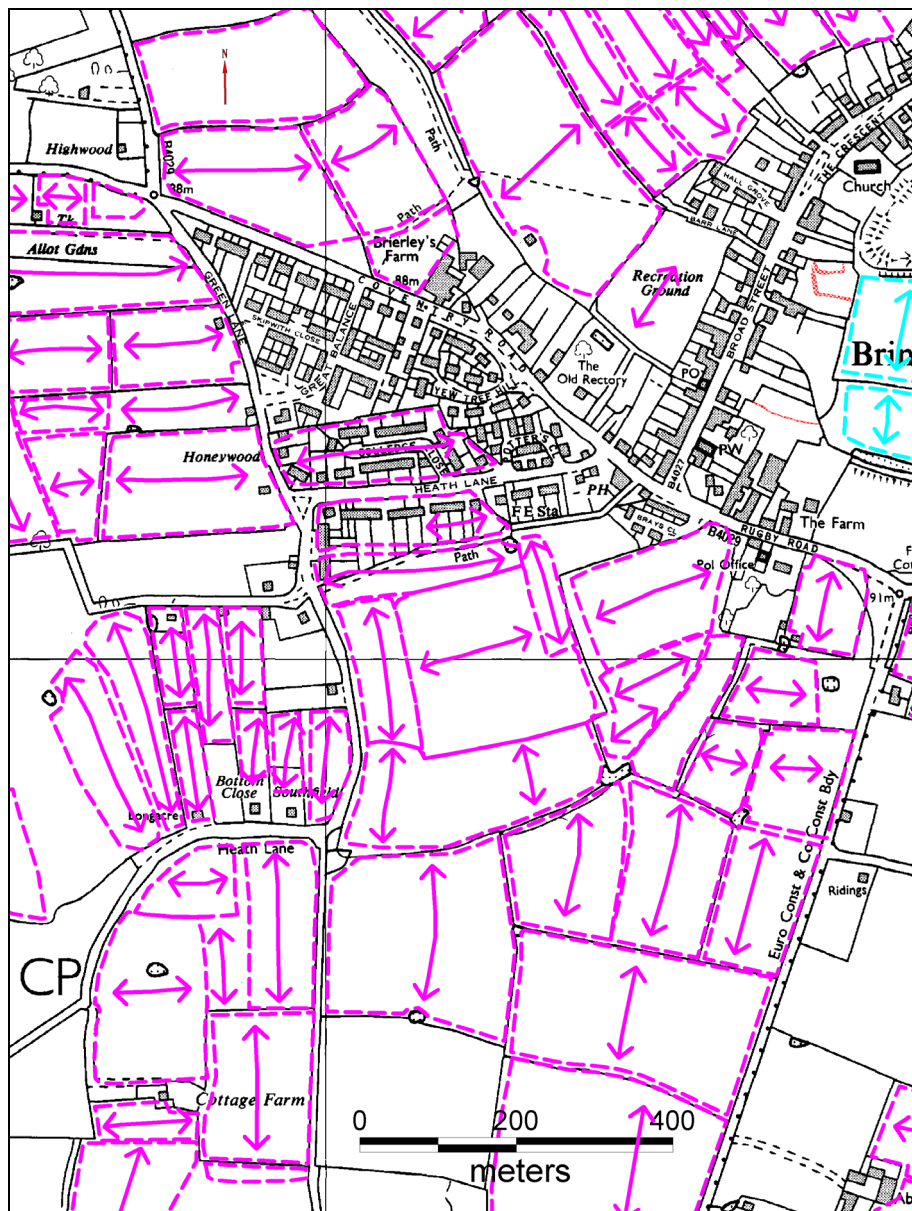


Figure 19: Mapping of ridge and furrow ploughing surrounding Brinklow

A study of the medieval fields in the parish Admington compiled using a combination of aerial photographic analysis, ground based survey and documentary evidence showed ridge and furrow covering all but a small area of pasture in the north of the parish by the 13<sup>th</sup> century (Dyer 1996). The parishes of Admington and Brinklow are roughly comparable with both parishes located in the Feldon Landscape Area. The medieval castle at Brinklow with its larger settlement around it is the chief difference between the two Parishes. The pattern seen at Admington and Brinklow is repeated throughout the survey block with the majority of fields having been ploughed in the medieval period. The places that vary from this norm are in the river valley where there is greater proportion of unploughed land, which is presumable set aside for pasture, and around Combe

Abbey where the formal landscaping (Salzman 1951) in the post medieval period may have masked the earlier ploughing.

The field boundaries seen on the aerial photography of the survey appear to reflect a mixture of enclosure methods. The narrow fields enclosing single strips may be derived from late medieval piece meal enclosure while the larger squarer ones may be associated with Parliamentary Enclosure Acts. On Ogilby's maps (1675) the area to the west of the Foss Way between Bretford and Brinklow is described as "allotments" which possibly suggests that the fields beside the road were already enclosed by that date. In most cases the fields vary size in and their elongated rectangular shape frequently reflects the layout of the medieval strips although the sinuous reversed S is usually not incorporated in the boundaries.



Figure 20: Rig and Furrow Surrounding Brinklow (extract from 106G/UG/1539/5027 © English Heritage), note the apparent bi directional ridge and furrow at the bottom of the large field in the centre of the AP is a blemish in the photographic emulsion, possibly a fingerprint)

There is little evidence in Brinklow to indicate that the settlement contracted in response to the economic travails that affected most of rural Warwickshire (Dyer 1996, 128) in the late medieval period. Brandon however has an area, on the western edge of the village near the Royal Oak Hotel, of earthwork banks and ditches, which appears to be evidence of abandoned habitation. On the southern side of the railway an earthwork bank and ditch (Fig 21 "A") look as though they are in alignment with parts of earthworks west of the hotel and may represent the settlement

extending further to the south than was previously thought. The formless banks (Fig 21 "B") to the west of the linear ditch have the appearance of spoil heaps from opportunistic quarrying. The group of earth works in the southeast corner of Figure 21 appear to be a hollow way extending from the road to the castle. The inner bank of this feature appears to define a further bailey, which is only sketchily mapped on editions of OS mapping.

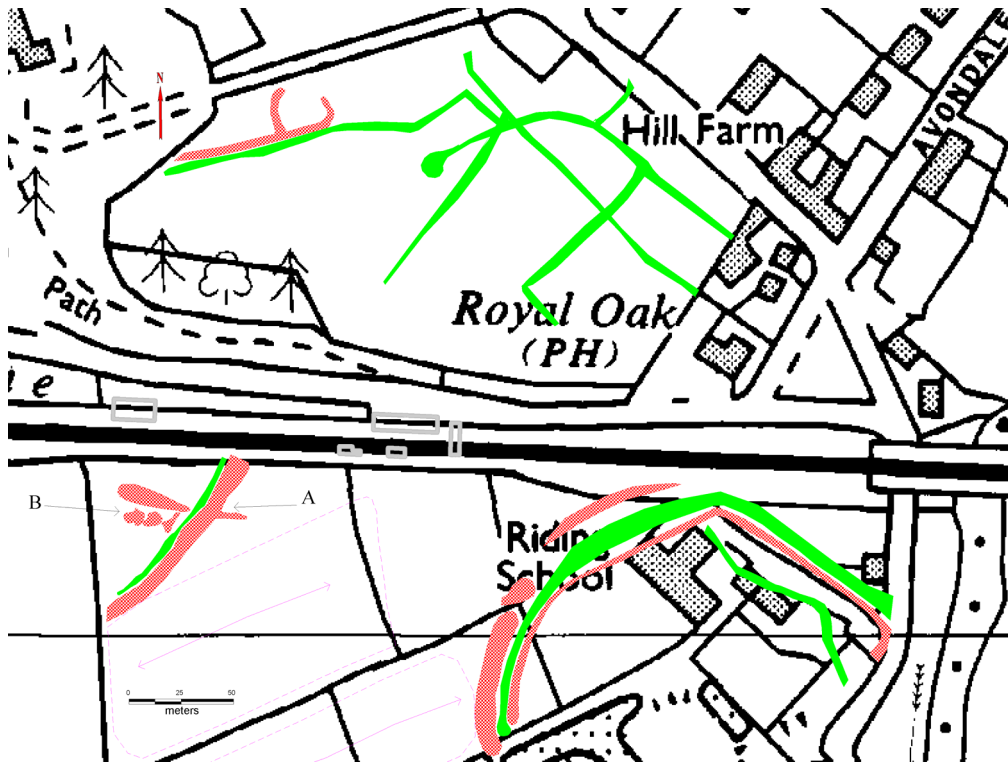


Figure 21: Earthworks at Brandon

In the 13<sup>th</sup> century building moats to surround domestic residences in Warwickshire became popular within the forest of Arden (Dyer 1996, 122). There are about 300 such sites in the county most of them located in the Forest of Arden (ibid). Characteristically these sites are rectangular with ditches that are between 5m and 10m wide and they are usually less than 0.4 Hectares in area (ibid). A monument that conforms to this template can be seen beside the river at Marston Mill and is considered to be a previously unrecorded example. Immediately to the north of this moat the leat of Marston extends from a weir across the river to the mill building where the race can still be identified on OS mapping.

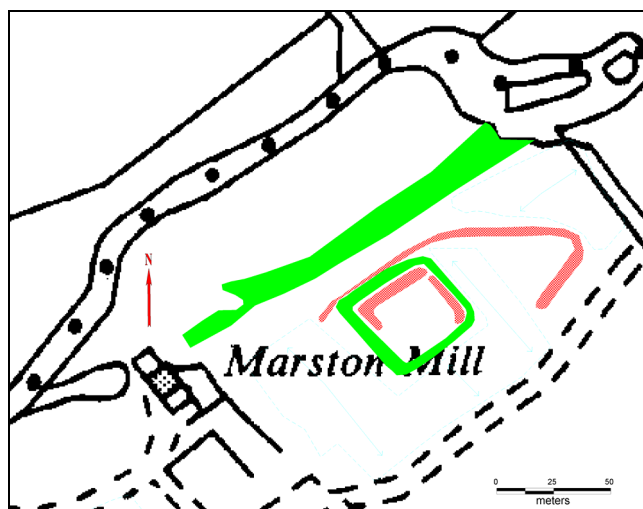


Figure 22: Possible previously unrecorded moat at Marston Mill

### **Post medieval**

In common with all the other areas surveyed as part of this project along the Avon valley there are unexplained networks of ditches and banks beside the river. In most cases these ditches are connected to the river at two or more points and have the same appearance as the water meadows described in Cook and Williamson (Cook & Williamson 2007). A midlands example at Clipstone Park in Nottinghamshire is illustrated in the same book. Another explanation could be that the examples below are all simple drainage ditches. Ground survey could perhaps provide information on levels and possibly identify the positions sluices and other flow control apparatus.

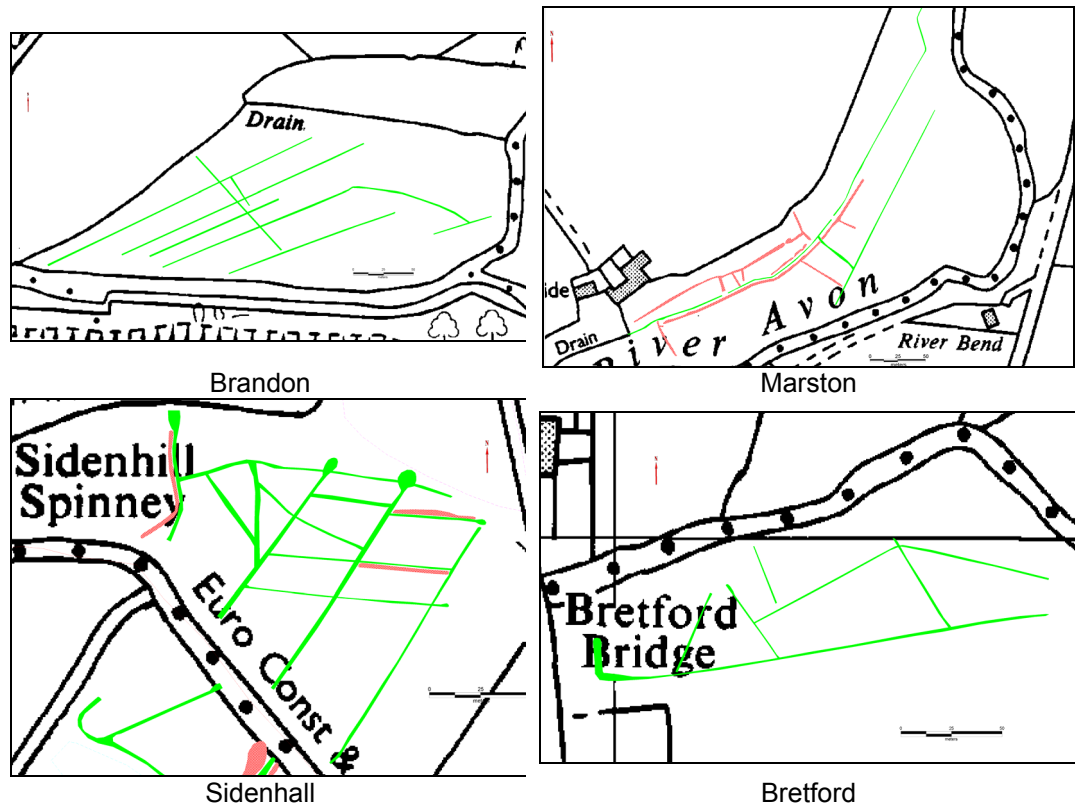


Figure 23: Examples of water management in the Avon Valley. The river Avon is highlighted with dots that represent administrative boundaries on the OS mapping.

### **Modern**

A cluster of buildings forming a station on the Coventry - Rugby railway can be seen in Figure 21. The station consists of two platforms linked by a footbridge with a ticket office beside the northern platform. A signal box and what appears to be a goods-shed complete the operation.

### **NMP Block 8: Ling Hall**

#### **Geology**

Bands of calcareous mudstone and shale formed in the early Jurassic age form the bedrock throughout the survey area. The superficial geology is made up from deposits of glacial origin, mainly Wolston Clay and Dunsmore sand and gravel. These Dunsmore gravel deposits form a distinct plateau with a maximum height of a little over 110m OD. The edges of the plateau and the extent of the gravels correspond closely with the 110m contour line shown on OS maps. This is illustrated in figure 24 below. In the lower areas where the drainage channels occur there are narrow areas of alluvium but mainly the Wolston clay forms the basis of the soil cover.

#### **Landscape Character**

This survey area shares most of the characteristics used to describe the adjacent Brinklow survey block above and these do not need to be repeated. However, the distinct plateau formed by the glacial deposits has produced an unusual pattern in the boundaries of the seven parishes that are present in the survey. As can be seen in Figure 25 below they all radiate from highest point of the plateau. The origins for this unusual pattern are obscure but it is suggested in the English Nature's characterisation of the area (English Nature 1996) that it relates to access to rough

pasture on the moor. The boundaries of the “hole” in the middle of the map follow the modern hedge boundaries and there is no suggestion of a pool or other feature to explain its presence. The south-eastern corner of the survey block has been flooded in the late 20<sup>th</sup> century to form Draycote Water.

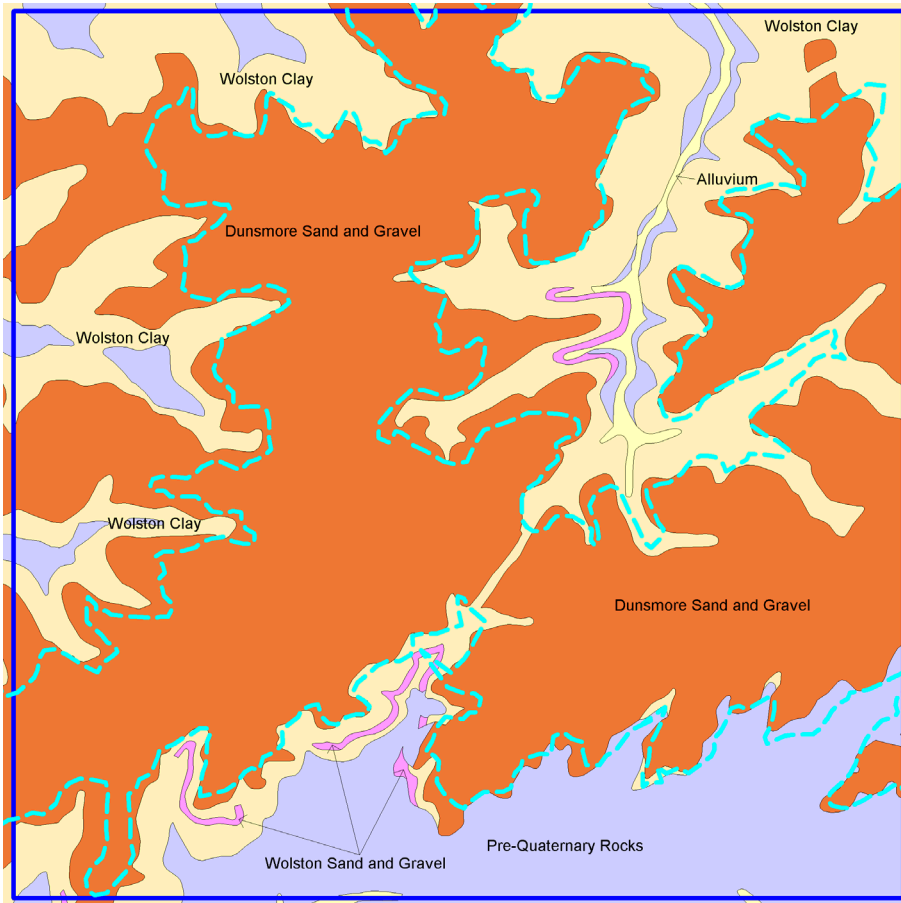


Figure 24: Superficial Geology, the dashed light blue line represents the 110m contour line, which as can be seen has a close relationship with the extent of the Dunsmore gravel deposits.

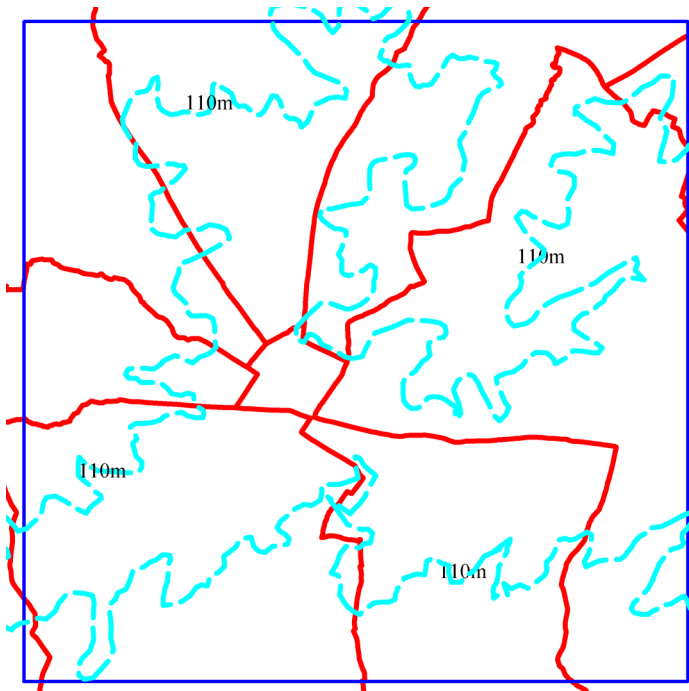


Figure 25: Parish Boundaries radiating from the highest point of the Dunsmore plateaux.

### **Summary of General Character, Dating and Distribution of Mapped Sites**

There are numerous crop marks within the survey area most of which are late Iron Age or Roman in date. Excavations in this area have found evidence for Bronze Age settlement but the boundaries have so far proved to be late Iron Age. The land above 110m OD on the Dunsmore Gravel deposits appears to have been divided into large tracts using ditches and pit alignments. The pit alignments may be illusory in some cases where there is difficulty in deciding if faint crop marks are actual pits or a barely visible ditch. Along the boundaries there are numerous small rectangular and circular enclosures. Excavation in advance of quarrying on the Church Lawford airfield site showed that the first evidence of this settlement occurred in the late Bronze Age and the site remained in use until the late Romano period (Palmer S 2002). This dating range would appear to cover most of the crop marks seen in the area.

The function of these field systems is obscure but one option would be to consider them as having been created to control stock as proposed by Francis Pryor (Prior 1998). There are few circular crop marks in the area that could be described as the ditches of round barrows most look like parts of settlements. This is contrast with survey block 7, which has enclosures of several types that are possibly either Neolithic or Bronze Age mortuary monuments. Survey Block 4 however is similar to this block having only three small ring ditches that are possibly Bronze Age. It is tempting to say that the river in Block 7 is the reason for the complex of funerary monuments but the same river is present in Block 4 so the answer must be more complicated.

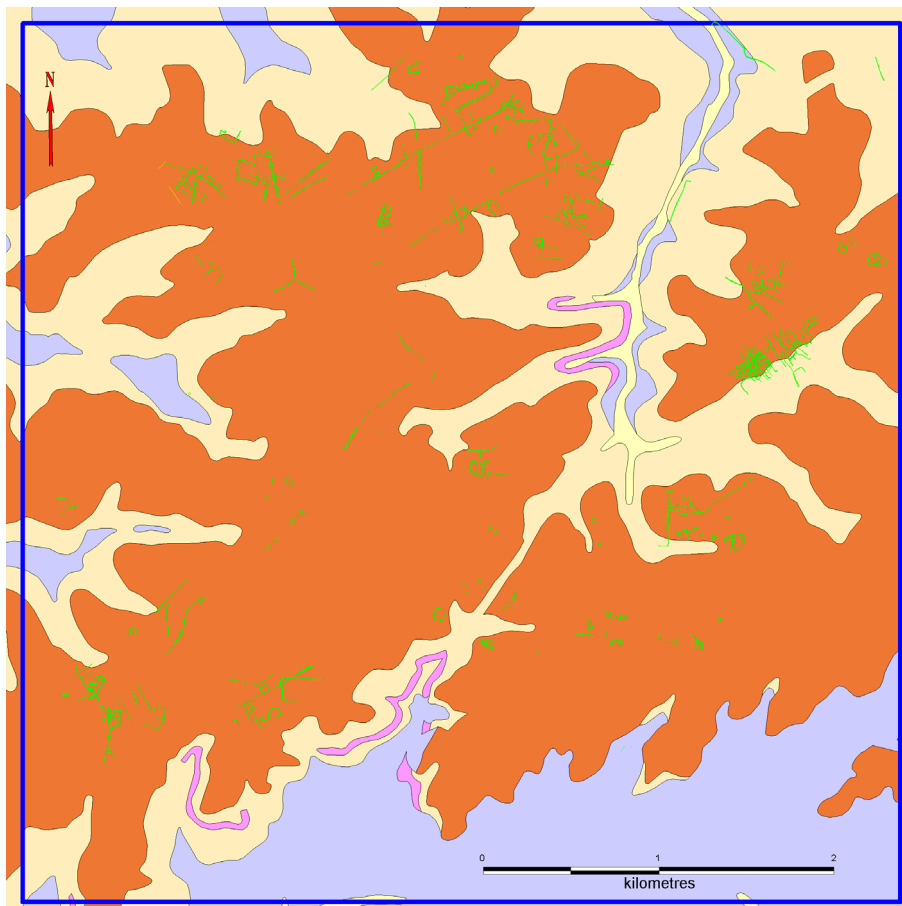


Figure 26: Prehistoric Crop marks in NMP Block 8

Examination of Figure 26 reveals an almost complete absence of crop marks outside of the areas of the plateau's gravel deposits, which are shaded as light brown and pink. The clay soils, shown as pale yellow and blue, apparent on the slopes of the plateau and in lower areas that drain the region do not generally exhibit crop mark except in very dry times. The few linear crop marks that do extend beyond the gravel can all be placed in the Roman period when superior farming equipment allowed exploitation of heavier soils (Scullard 1997, Wachter 1998). With a few exceptions the medieval ridge and furrow that may have hidden prehistoric crop marks has been levelled throughout the area including the lower parts without further examples appearing. It is



possible then that the crop marks mapped may represent the full extent of prehistoric settlement, however further work is required to establish if this is true. The figures below show typical plots of the crop marks found.

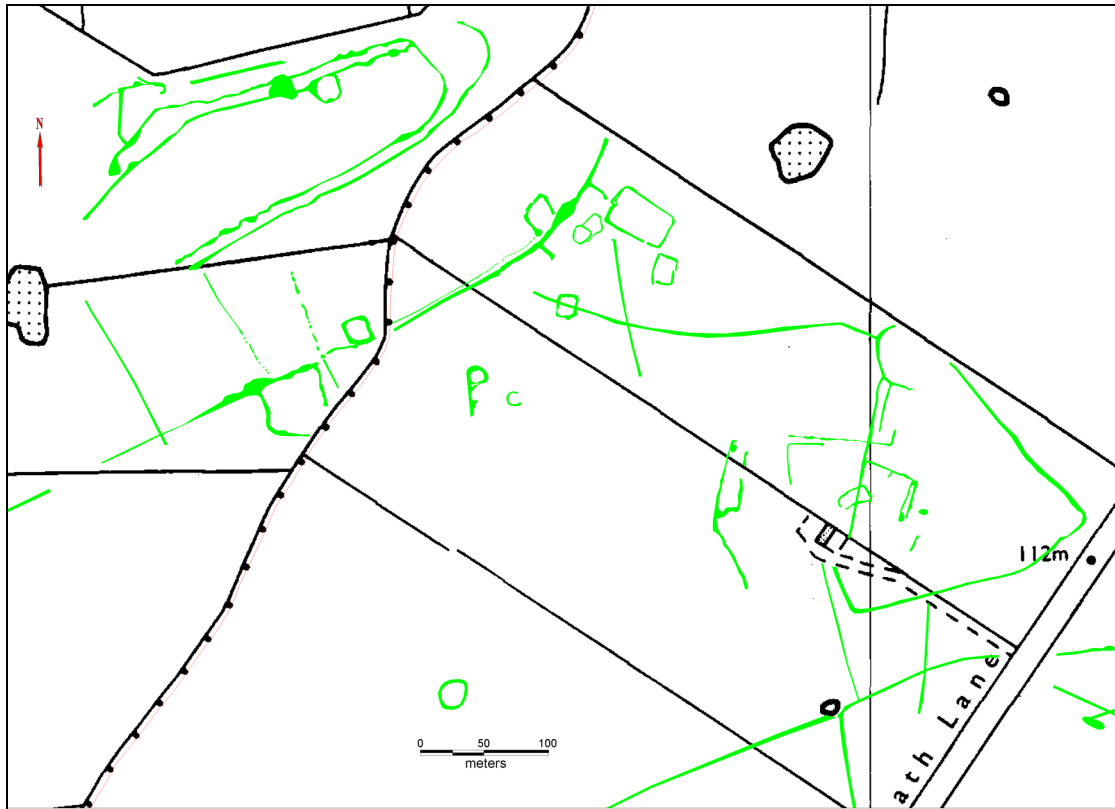


Figure 27 Crop marks Ling Hall. Land division and possible stock enclosures showing as crop marks on the Dunsmore Gravel deposits. The almost circular ring ditch just above the scale bar is one of the few features that could be considered to be the remains of a burial mound or other type of Neolithic/Bronze Age funerary monument.

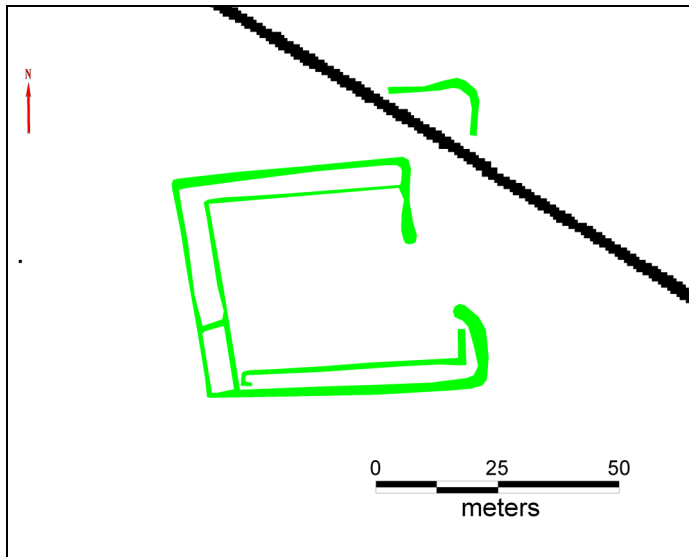


Figure 28: Roman Site near Ling Hall. Morphological comparison with excavated sites elsewhere (references) suggest this may be a Roman temple or villa enclosure HER (MWA 4970)

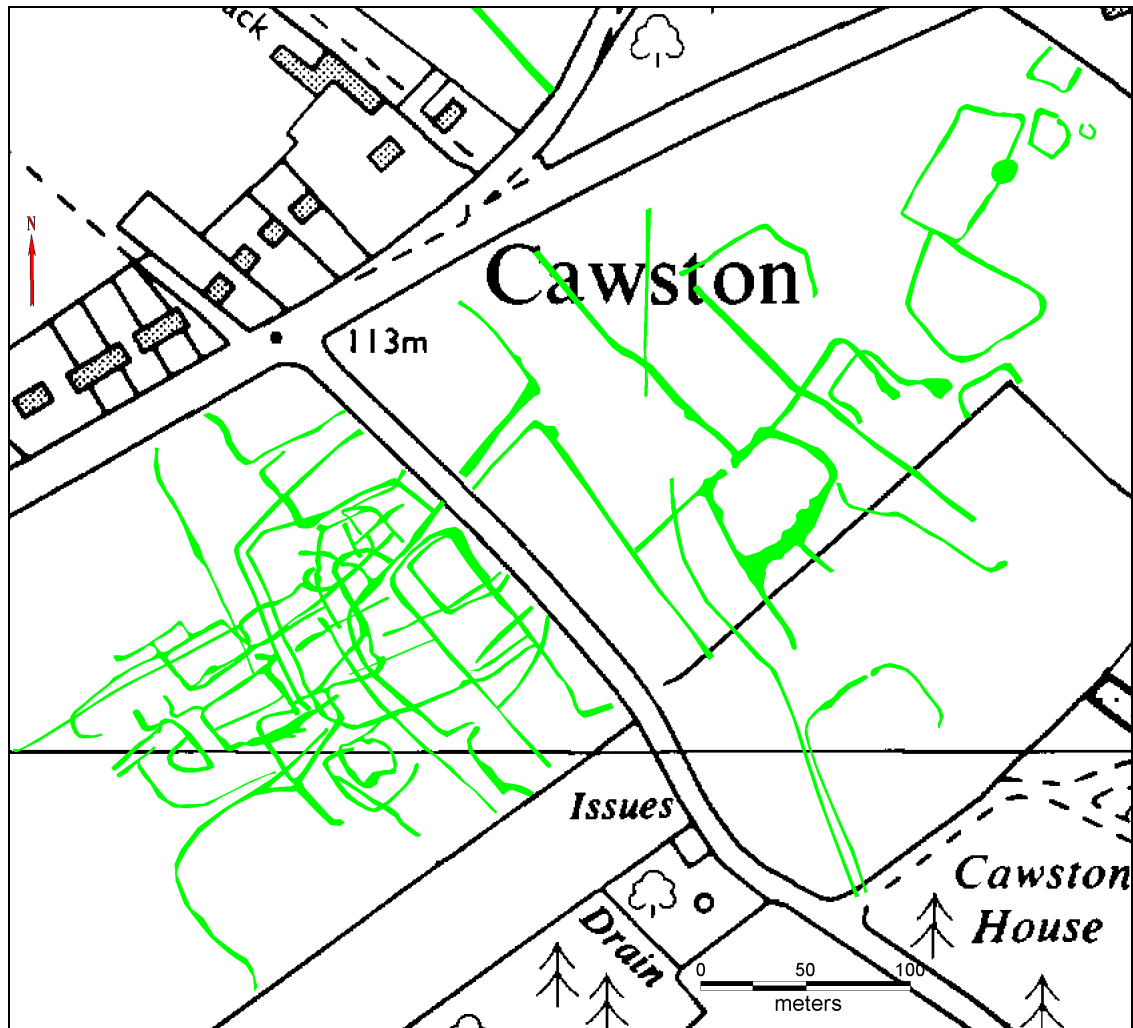


Figure 29: Late Iron Age or Roman period crop marks at Cawston. The unusual complexity of the crop marks to the west of the road may indicate remarkable continuity change of use throughout their life. The difference in density of crop marks on either side of the road may be real or an artefact conjured up by differential survival. This is one of the few examples of crop marks appearing on the clay soils in the area.

### **Medieval**

The aerial photographs of the 1940's give a picture of ridge and furrow ploughing distributed throughout the clay slopes but not on the upland gravel deposits. This would sit nicely with the contention that the parish boundaries were conceived to exploit the rough grazing on the moor throughout the medieval period. However the outlines of the pre airfield farm, lanes, field boundaries and also ridge and furrow ploughing show clearly on the aerial photograph (RAF/106G/UK/636 Frame 4424). The survival of ploughing in this area contrasts with its immediate surroundings, which may suggest that the construction of the airfield protected a small area of a landscape that was undergoing change from pastoral to arable farming at that time. The ploughing is very straight and may be post medieval in date or even "emergency" Napoleonic era (H Winton pers comm). The "Straight Mile" road to the south west of the airfield and the regular geometric fields on either side of it do appear to be due to a parliamentary enclosure Act.



Figure 30: Extract from Aerial Photograph RAF/106G/UK/636/4424. © English Heritage

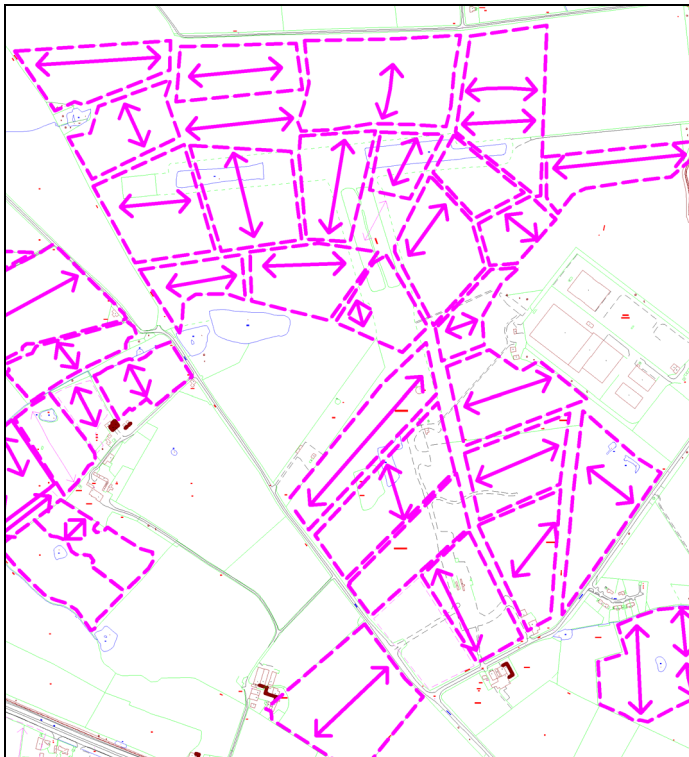


Figure 31: Plot of Rig and Furrow Ploughing at Church Lawford Airfield plotted from Aerial Photograph RAF/106G/UK/636/4424

The three larger settlements in the survey area, Thurlaston and Toft were all affected by the economic downturn in the 14C (Dyer C 1996). Bourton on Dunsmore shown below in Figure 32 appears to have the affected largest area. At the bottom centre of the figure the ridge and furrow plotted crossed the earlier boundary.

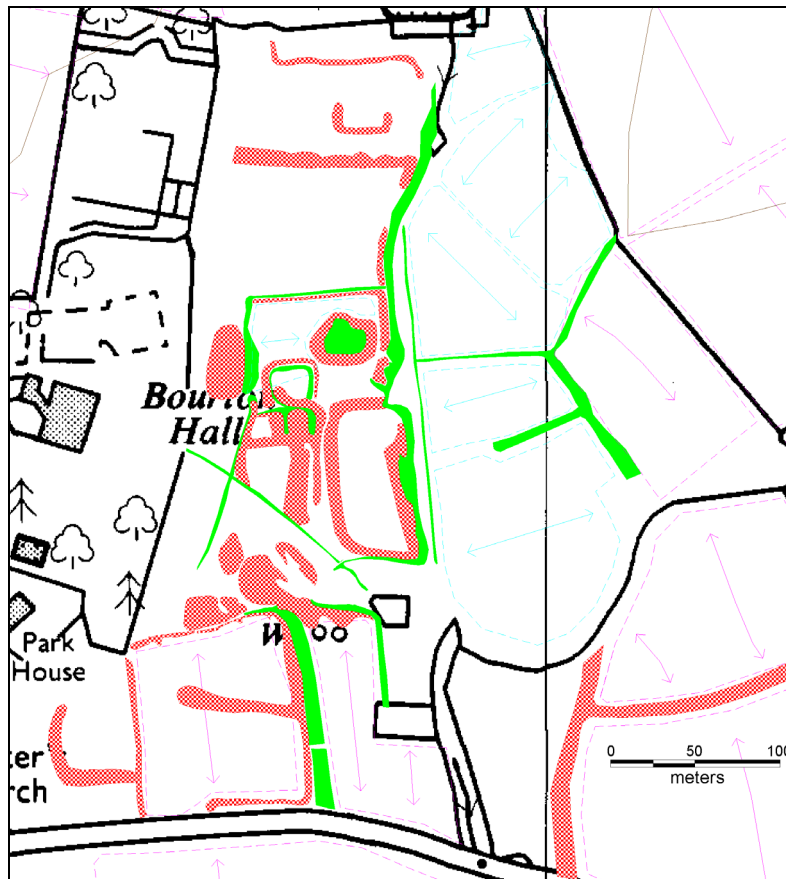


Figure 32: Remains of a possible manorial complex at Bourton on Dunsmore, with boundaries, building plots and possible fishponds.

### ***Post-Medieval***

The post-medieval period has left little evidence in the way of crop marks or earthworks that are not adequately covered by OS mapping. One example of a site that is not mapped adequately are the ditches at Dunchurch shown in figure 32 which appear to be floated water meadows although they are on a much smaller scale than the possible examples beside the River Avon described above. The square feature is possibly a pond although its function and the date of its construction are unsure. The nearest high status house, Toft Hall, shown on the early OS maps that might have fish ponds or ornamental gardens is 400m away to the southwest, which makes that function unlikely.



Figure 33 Possible water meadows at Dunchurch. (SP 479711)

### **Modern**

The most striking modern site has almost disappeared due to quarrying and demolition. The airfield at Church Lawford, which had a short life being commissioned in April 1941 and closed in the late 1950s, was only ever a training base and did not have the range of defences its neighbour at Baginton (Smith 2004) had. There are a few structures around the perimeter that appear to be gun pits and a uniquely modified type 22 pill box (MWA 3489) on the roadside by the main gate but the heavy anti aircraft guns and the barrage balloons seen at Baginton are missing. There are however a greater number of huts that were possibly accommodation for the trainees and air raid shelters. The original main hangars seen on the 1940 aerial photographs, RAF/106G/UK/636 Frame 4424 for example, do not quite match the buildings shown on recent mapping and may have been replaced at some time. The Bellman and Blister hangars were designed to be temporary and portable and will have left few traces except on photographs of the time.

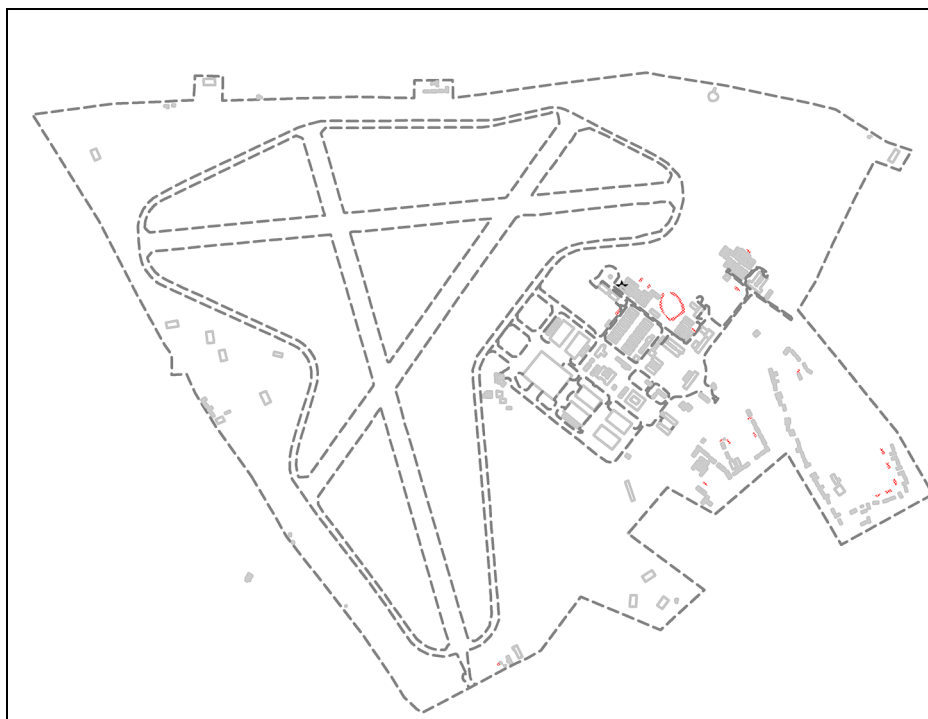


Figure 34: Church Lawford Airfield plotted from aerial Photograph RAF/106G/UK/636/4424 taken in 1947.

**HER statistics**

Block	New HER Records	Modified HER Records
4	29	34
7	58	19
8	31	33
Totals	118	86
	204	

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