LOWER QUINTON TO KING'S COUGHTON

Proposed High Pressure Natural Gas Supply Pipeline

ARCHAEOLOGICAL DESK-BASED ASSESSMENT

Prepared by

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on behalf of

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for

MC ALPINE - PPS PIPELINES

for

TRANSCO

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SUMMARY

This desk based appraisal examines the historic landscape and archaeology, potentially affected by the proposed Transco high-pressure gas pipeline between Lower Quinton and King's Coughton in Warwickshire.

Searches of national and county databases, and study of maps, aerial photographs and written sources have identified a moderate level of *known* archaeological activity within a 1km wide study corridor.

All the sites studied have been graded according to their perceived archaeological importance. The scale of impact of the proposed pipeline upon each archaeological site has been assessed and the significance of each impact determined (taking into account the importance of each site).

A staged approach to the archaeological investigation and mitigation of the proposed route is recommended including comprehensive field reconnaissance, field walking and geophysical surveys.

1. INTRODUCTION

Network Archaeology Ltd has been commissioned by Montgomery Watson Harza (MWH) to undertake an Archaeological Desk-Based Assessment of a proposed high-pressure gas pipeline to be built between Lower Quinton Above Ground Installation (AGI) and King's Coughton AGI in Warwickshire (figure 1).

This study forms one stage in what is expected to be a detailed investigative programme of archaeological research, investigation and mitigation (see Appendix C).

2. PROJECT BACKGROUND

2.1 Proposed scheme

Transco propose to construct a new pipeline for the transportation of natural gas, between the existing Above Ground Installations (AGIs) at Lower Quinton and Kings Coughton, in Warwickshire (figure 1). The proposed 1200mm (48") diameter pipeline will be approximately 18.5km long and will be designed for pressures up to 75 bar.

2.2 Reasons for building the pipeline

The proposed pipeline is intended to reinforce Transco's National Transmission System and Local Distribution Zone, primarily in response to increasing demand for gas by domestic and commercial users in the West Midlands.

2.3 Proposed Construction Techniques

The pipeline is to be built within a 42m wide working width (reduced to 15m at road crossings and to 25m at other hedgerows). Construction will involve four main phases of activity. The first phase, *Right Of Way Activities*, includes hedge removal, cleaning, fluming and temporary bridging of ditches, fencing the working width, topsoil stripping of access areas and the installation of pre-construction drainage**.** *Topsoil stripping* across the working width will then take place along the length of the pipeline. *Trench Excavation and Pipe Laying* to a depth of at least 1.2m will then follow. All roads, major rivers, major services, a dismantled railway and an access road will be crossed by non-open cut. Finally, *Reinstatement*, involving the replacement of topsoil and the installation of post-construction drainage, will take place.

2.4 Previous archaeological stages of work and route selection

The proposed pipeline route currently under consideration has been selected following a feasibility study undertaken by Transco (2001).

2.5 Previous archaeological work in the vicinity of the proposed scheme

The study corridor is crossed by four existing gas pipelines schemes and one proposed road scheme:

- Newbold Pacey to Honeybourne Gas Pipeline (NTS Number 2 Feeder) (GSB Prospection 2000)

The south easternmost 300m of the proposed pipeline runs within 120 - 500m of the existing Newton Pacey to Honeybourne gas pipeline. Observations made from road crossings was followed by a geophysical survey of selected cropmark sites along the route. This was followed by trench evaluation of selected areas. None of these areas lay within the study corridor of the proposed Lower Quinton to Kings Coughton pipeline. Topsoil stripping, monitored by RSK Environment Ltd, led to

the discovery of previously unknown, significant archaeological remains at four locations. One of these sites (WSMR 9139), to the west of Long Marston, lies within the proposed study corridor (NMR Event 1338465) (*pers comm* Stuart Ideman and Rarah Revans). Confidence in the apparently blank areas of the route is probably low due to the intermittent nature of the watching brief and the overall lack of smallscale findings.

- NTS Number 14 Feeder
- NTS Number 23 Feeder
- LTS pipeline from King's Coughton to Wootton Wawen

The above three pipelines also cross the proposed study corridor, but archaeological investigations or monitoring of these scheme is not known to have taken place.

- A46 Alcester to Stratford Proposed Road Improvement (WCC 1994)

The A46 crosses the proposed study corridor between Temple Grafton and Haselor. A walkover, carried out along a 150m wide corridor centred on the proposed road improvements looked for earthworks and finds scatters. In additon, a selection of cultivated fields along the route were walked in 10m transects and 20m stints. Two of these fields lie within the corridor of the proposed pipeline and one of them produced worked flints (WSMR 7273). Three archaeologically significant sites were identified by the walkover and fieldwalking, but none of these lay within the corridor of the proposed pipeline (NMR Event 1318010).

Several smallscale surveys, evaluations, excavations and watching briefs have also taken place within the study corridor:

- Warwickshire Project (RCHME)

The RCHME undertook this project in 1982 at the request of WCC. The project area covered nine square kilometres around Alcester and involved air photo interpretation using computer aided transcription produced plots at 1:25,000. Positive results were plotted for four kilometre squares within the proposed study corridor (SP 0858, SP 0859, SP 0958 and SP 0959).

- Kings Court, King's Coughton (Booth, P. and Parkinson, A. 1993)

An evaluation and a small excavation were carried out in 1993 in advance of the construction of a new bedroom block at King's Court Hotel, previously known as King's Coughton Farmhouse. Three 3m by 2m trenches were machine-excavated, producing evidence of medieval ploughsoils, but no earlier material (NMR Event 1056938 and 1118521).

- Alcock's Arbour, Haselor (*Trans. and Procs. of the Birmingham Archaeological Society*)

Excavations carried out in 1924 and 1927 uncovered evidence of Roman settlement (NMR Event 630483 and 630484).

- St Mary The Virgin Church, Kinwarton (Meek, J. 1996)

Monitoring of a trench within the church, undertaken by WCC in 1996, found a vault and a grave slab (NMR Event 1116274).

- The old filling station, Long Marston (Dalton, J., OAU)

Monitoring during redevelopment of the site found no significant archaeological activity.

3. AIMS AND OBJECTIVES

The purpose of this assessment is to consider the cultural heritage implications of the proposed pipeline, to assist in the selection of an archaeologically least damaging route, and to provide a basis for further stages of investigation.

The specific objectives are to:

- identify and define the extent of known archaeological remains within and immediately outside the proposed study corridor;
- provide a preliminary assessment of their significance; and
- assess the overall impact of the proposed pipeline route on the known and potential archaeological constraints;
- assess the need for further evaluation and mitigation prior to and during construction; and
- make recommendations for further evaluation and mitigation, where necessary.

4. PROCEDURES

4.1 Standards

This assessment has been conducted according to the Institute of Field Archaeologists':

- *Code of Conduct* (2000); and
- *Standard and Guidance for Archaeological Desk-based Assessment* (1999).

4.2 Study corridor

Data collection focused on a one kilometre wide corridor, centred on the proposed pipeline. Background information for the localities through which the corridor passes was additionally recorded to provide a broader archaeological context.

4.3 Data sources

Eight data-holding bodies were consulted, and data collected from each of the bulleted sources marked with an * below. Those sources not marked with an * were consulted but did not contain data:

Bodleian Library, Oxford:

- Ordnance Survey maps (3rd editions) *

DEFRA: Multi Agency Geographic Information for the Countryside Project

- Heritage coasts
- World Heritage Sites
- Protected Wrecks

***English Heritage*:**

- Schedule of Ancient Monuments of England *
- National Monuments Record (NMR) Monarch database of registered archaeological sites *
- NMR Events database of archaeological excavations
- NMR National Mapping Programme (NMP)
- NMR collection of vertical and oblique aerial photographs *
- The Register of Parks and Gardens
- The Register of Historic Battlefields

Kew Records Office:

- tithe maps and awards *

***Stratford on Avon District Council*:**

- maps showing historic buildings listed in South Warwickshire by the Department of Culture, Media and Sport *****

***Warwickshire Sites and Monuments Record*:**

- county list of known archaeological sites and finds *
- vertical and oblique aerial photographs *
- archaeological reports and journals *
- Ordnance Survey maps (1st & 2nd editions) *

Warwick Local Studies Library:

- archaeological reports and journals *
- documentary evidence and secondary printed sources *

***Warwickshire Public Records Office*:**

The Warwickshire Public Records Office is currently unable to provide access to historic documents but has provided a list of maps and plans which it holds that are relevant to the study area. These are listed in appendix D, and may be accessible in early 2003.

4.4 Consultations

Consultations, to discuss the archaeological implications of the proposed pipeline, have taken place with:

- Warwickshire County Council Archaeological Service;
- English Heritage, Scientific Advisor

4.5 Reliability and potential limitations of data

Reliability

Information held by public data sources can normally be assumed to be reliable, but uncertainty can arise in a number of ways:

- The SMR can be limited because it depends on random opportunities for research, fieldwork and discovery.
- Documentary sources are rare before the medieval period, and as documents were not usually compiled for archaeological purposes, are inherently biased.
- Primary sources, especially older records, often fail to locate sites accurately and are obviously very subjective in any interpretation.
- There may be a lack of dating evidence for sites.
- The usefulness of aerial photographs depends upon geology, land use and weather conditions when the photographs were taken. Some types of geology and remains do not produce crop, soil or vegetation marks. Aerial photographs necessarily involve some subjective interpretation of the nature of sites.

Limitations

Limitations of impact assessment include:

- inaccuracies of map sources which make it difficult to provide a precise assessment of potential impact;
- uncertainty regarding the current condition of some sites. This means that the archaeological significance of some sites cannot be ascertained until reconnaissance has taken place on the ground;
- uncertainty regarding the precise construction and design methodologies of the scheme; and
- the possibility that *hitherto unknown* archaeology will be encountered.

4.6 Definition of a 'site'

The term 'site' is used throughout this report to refer to ancient monuments, buildings of architectural and historical importance, parks, gardens, designed landscapes, battlefields, wrecks, public spaces, historic landscapes, historic townscapes, findspots of artefacts and any other heritage asset.

4.7 Legal designations

Many of the sites which lie within the study corridor benefit from statutory and other protections. These are explained in Appendix B.

4.8 Reference conventions

The information gathered from the data sources (listed in 4.3) is uniquely referenced throughout this report and on all the figures. Information retrieved from public databases is prefixed by a two, three or four letter code followed by their original source number (see 4.9). Sites found during the course of this desk based assessment which are not currently listed in a public database are referred to as DBA sites, identified by a double letter suffix.

4.9 Gazetteer of archaeological sites

The sites are summarised as a Gazetteer of Archaeological Sites in Appendix A. The gazetteer is structured in alphanumeric order, as follows:

- DBA Desk Based Assessment site (e.g. DBA:AA)
- LS Listed Structure (e.g. LS 83634)
- MON English Heritage MONARCH database (e.g. MON 242075)
- SAM Scheduled Ancient Monument (e.g. SAM 31432)
- WSMR Warwickshire Sites and Monuments Record (e.g. WSMR 2156)

The gazetteer provides the source, cross-references, description, period and location of each site. The location is given as a 12 figure national grid reference to the centre of the point, area or linear, and is not therefore the point at which directly impacted sites are crossed by the proposed route. The gazetteer also gives a category of importance (see 4.15), an assessment of impact (4.16), and an assessment of the significance of impact (4.17).

4.10 Archaeological constraint figures

The archaeological sites listed in the gazetteer (see 4.9) are presented on eight A3 constraint figures (2 - 9). Each site is represented by a star, shaded area or dashed line, depending on the type of data held. The symbols and corresponding labels are coloured according to the importance of the site (see 4.15).

4.11 Aerial photographic data figures

The details of aerial photographic data are shown in pink on seven A4 figures (13 - 19). The boundaries and labels are coloured according to the importance of the site.

4.12 Historic boundaries figures

Existing parish boundaries, existing historic field boundaries, and former field boundaries are shown on three A3 figures (10 - 12) (see chapter 8, 10.12 and 11.7). The boundaries are distinguished by colour.

4.13 Accuracy of displayed data

Site data may have been originally captured at a different scale to that which it is now displayed. This should be borne in mind when interpreting the exact location of constraint points and polygonal boundaries. The table below presents estimated accuracy levels based upon visual comparison with plots.

Table 4.1 Summary of accuracy levels for displayed data

Source	Source type	Source scale	Positional accuracy in relation to current OS mapping	Accuracy in relation to position on the ground
DBA	OS map	1:10,000 1:10,560	1mm	±10m
DBA	OS map	1:2,500	1mm	±2.5m
DBA	AP vertical	1:5,000 - 1:10,000	1-5mm	±5 - 50m
DBA	AP oblique	1:1,000 - 1:2,500	1-5mm	±5 - 50m
DBA	Tithe/enclosure map	1:5,000 - 1:10,000	1-5mm	±5 - 50m
LS	annotated OS map	1:2,500	1mm	±2.5m
MON	digital points	-	?	?
SAM	annotated OS map	1:10,000	1mm	±10m
SAM	annotated OS map	1:2,500	1mm	±2.5m
WSMR	digital vector points, polygons and lines	-	?	?

4.14 Impact identification process

This approach looked at each individual site in its wider heritage landscape, and took account of identity and place, and past and present perceptions of value. A three stage process was adopted:

- Stage 1: assessment of importance (see 4.15)
- Stage 2: assessment of impact (of the proposed scheme) (see 4.16)
- Stage 3: assessment of significance of impact (see 4.17)

4.15 Importance

The sites listed in the gazetteer (see 4.9) have been rated, according to their perceived importance, into one of four categories, A to D, as shown in table 4.2. Each site has been assessed (where possible) on the following characteristics:

- physical form
- survival (i.e. level of completeness)
- condition (i.e. current stability and management)
- complexity (i.e. diversity of elements and relationships)
- setting
- period

The grade awarded to each site considered the geographical scale at which the site matters (i.e. local, regional and national policies, commitments and objectives); representational value, diversity and potential; and existing local, regional and national designations (e.g. Scheduled Monuments).

Table 4.2 Site category definitions

Grade	Description	Examples	Investigation and mitigation
A	Legally protected site	Scheduled Ancient Monuments, listed buildings, conservation areas	To be avoided
B	Nationally significant site, currently not legally protected	major settlements (e.g. villas, deserted medieval villages), burial grounds, standing historic buildings	To be avoided
C	Regionally significant site	some settlements, finds scatters, Roman roads, sites of historic buildings	Avoidance desirable, otherwise investigation recommended
D	Locally significant site	field systems, ridge and furrow, trackways, wells	Avoidance and investigation not envisaged

The process of importance categorisation has been adopted as a tool to determining appropriate mitigation. The categories should not be taken as a statement of fact regarding the importance or value of a particular site. The use of examples of types of site is simply a guideline. The inclusion of a site in a particular category often involved a degree of subjective judgement based upon the current level of

information. Categories are not fixed and finite, and there is every possibility that the classification of a site at this stage may change as a result of findings made during later stages of investigation.

4.16 Impact

The potential impact of the proposed scheme upon a site has been assessed at three levels:

- nature of impact (see table 4.3)
- type of impact (see table 4.4)
- magnitude of impact (see table 4.5)

Table 4.3 Nature of impact definitions

positive	beneficial contribution to the protection or enhancement of the heritage
negative	detrimental to the protection of the heritage
neutral	where positive and negative impacts are considered to balance out
none	no or negligible impact due to distance from proposed scheme, and/or construction technique removes the impact

Table 4.4 Impact type definitions

Direct (D)	Physical damage including compaction and/or partial or total removal Severance, in particular linear sites
Indirect (I)	Visual intrusion, affecting the aesthetic setting of a site Disturbances caused by vibration, dewatering, changes in hydrology *etc.*
Uncertain	Where the physical extent or survival of a site is uncertain or where the visual impact of the proposed scheme on the setting of sites or landscape features has not been determined

Table 4.5 Magnitude of impact definitions

Severe (sev):	entire or almost entire destruction of the site
Major (maj):	a high ratio of damage or destruction to the site
Minor (min):	a low ratio of damage to the site
Indeterminate (Indet):	where the data level does not allow any secure calculation (e.g. because the quality and extent of the site is unknown, or because construction techniques have not yet been decided)

Factors affecting the assessed magnitude of impact include:

- the proportion of the site affected;
- the integrity of the site; impacts may be reduced if there is pre-existing damage or disturbance of a site, and
- the nature, potential and heritage value of a site

4.17 Significance of impact

The 'significance' of the impact has been assessed as the product of the importance of each site and the impact of the proposed scheme upon each site. The levels of significance of impact are defined in table 4.6. Significance of impact definitions are only provided for negative impacts, as these were the only type on this particular scheme. The significance of impact rating takes no account of potential mitigation.

Table 4.6 Significance of impact definitions

Stage 1	Stage 2			Stage 3
Importance of site	**Nature of impact**	**Type of impact**	**Magnitude of impact**	**Significance of impact**
A	negative	direct	severe	high
			major	high
			minor	high
			indeterminate	high
		indirect	severe	high
			major	high
			minor	medium
			indeterminate	high or medium
		uncertain	indeterminate	unknown
B	negative	direct	severe	high
			major	high
			minor	medium
			indeterminate	high or medium
		indirect	severe	high
			major	medium
			minor	medium
			indeterminate	high or medium
		uncertain	indeterminate	unknown
C	negative	direct	severe	medium
			major	medium
			minor	low
			indeterminate	low or medium
		indirect	severe	medium
			major	low
			minor	low
			indeterminate	low or medium
		uncertain	indeterminate	unknown
D	negative	direct	severe	medium
			major	low
			minor	low
			indeterminate	low or medium
		indirect	severe	medium
			major	low
			minor	low
			indeterminate	low or medium
		uncertain	indeterminate	unknown

5. DESCRIPTION OF PROPOSED PIPELINE ROUTE

5.1 Location and topography

The proposed route lies in Warwickshire about five kilometres to the west of Stratford-upon-Avon, just north of the Gloucestershire border (figure 1). The pipeline runs for approximately 18.4 km from Lower Quinton AGI (418150 248200) to Kings Coughton AGI (408300 259750).

Leaving Lower Quinton AGI (50m above Ordnance Datum, OD), the proposed pipeline heads west, skirting the north east edge of Long Marston village. The pipeline runs north west to Bunkers Hill (50m OD) and turns north, passing under the River Avon, approximately 1.5 km west of Welford on Avon. After crossing the B439 (50m OD) the proposed pipeline rises to over 100m OD to the east of Temple Grafton village. Sweeping to the north west, the route drops again as it runs around the east and north sides of Alcester, crossing the Rivers Alne and Arrow (50m OD). The final stretch runs west to Akeman Street (the A435), terminating between Coughton and King's Coughton at King's Coughton AGI (55m OD) (figures 2 - 9).

5.2. Solid geology

The Mercia Mudstone Group forms the principle element of the solid geology of the study corridor, and accounts for four main geologies (Keuper Marl, Arden Sandstone, Tea Green Marl, and Rhaetic Formation). Lower Lias also outcrops within the study corridor (BGS 1974, 1979, 1989; Landlook 2002).

- ***Keuper Marl***: reddish mudstones with occasional impersistent bands of shale and sandstone ('skerries'); occur between Lower Quinton AGI and the A46.
- ***Ardem Sandstone***: pale green grey, fine-grained sandstones ('skerries') interbedded with thin bands of mudstone; used locally as a building stone; forms slightly raised ground where it outcrops to the west of Haselor.
- ***Tea Green Marl*** (Triassic): pale green grey and white mudstone with occasional sandstone bands ('skerries'); outcrops over the steep north facing slopes above the A46 (T).
- ***Rhaetic Formation***: grey calcareous mudstone over dark grey to black mudstone and shale with thinly bedded sandstone bands ('skerries'); outcrops over the steep north facing slopes above the A46 (T).
- ***Lower Lias***: grey and olive mudstones and clay shales with impersistent bands of limestones; the limestones are exploited locally as a building material; present along the route between Lower Quinton and Temple Grafton.

5.3 Drift geology

The solid geology is overlain by three drift deposits which are all post-glacial in nature (BGS 1974, 1989; Landlook 2002i).

- ***Head:*** structureless mixture of clay, silt, sand and stones, derived from local material; found along the entire route with the deepest deposits being found at the foot of concave slopes.

- ***Alluvium***: red and grey silty clay, often lying over gravels; located in the valley bottoms of the Rivers Avon, Alne, Arrow and their associated tributaries. Boreholes taken 80m either side of the three major rivers recorded alluvium to a depth of 3-4m to the west and east of the River Arrow, to a depth of 1m west and 4m east of the River Alne and 4m west and 1.5m east of the River Avon (Exploration Associates 2002)
- ***River Terrace Deposits:*** loamy deposits with variable quantities of stone, loosely consolidated; flanking the Rivers Avon, Alne and Arrow.

5.4 Soils and land use

The proposed route crosses nine soil types, which are described below in relation to the geology over which they are derived (SSEW 1983).

- ***Arrow:*** deep permeable coarse loamy soils affected by groundwater; suitable for cereals, and some vegetables; developed over river terrace drift on either side of the River Arrow.
- ***Bishampton:*** deep fine loamy soils (over clayey soils) with slowly permeable subsoils and slight seasonal waterlogging; suitable for cereals, short term grassland and some vegetables; developed over river terrace drift.
- ***Compton:*** stoneless red clay soils affected by groundwater on flat land at risk of flooding; suitable for permanent grassland with stock rearing and dairying; developed over alluvium associated with the River Arrow.
- ***Denchworth soils***: slowly permeable, seasonally waterlogged fine loamy over clayey soils; suitable for winter cereals and short term grassland in drier lowlands and dairying on permanent grassland in moist districts; developed over Rhaetic Formation at the southern end of the proposed pipeline route.
- ***Evesham 2:*** slowly permeable calcareous clayey soils and fine loamy over clayey soils, seasonally waterlogged; suitable for cereals and grassland; developed over Lower Lias to the north and south of the River Avon.
- ***Fladbury 1:*** stoneless clayey (calcaerous) soils affected by groundwater on flat land at risk of flooding; suitable for permanent grassland with stock rearing and dairying; developed over alluvium associated with the River Avon.
- ***Salop:*** slowly permeable seasonally waterlogged red fine loamy over clayey soils; suitable for dairying on short term grassland and some cereals; developed over river terraces and associated red till flanking the River Alne.
- ***Whimple 3:*** red fine loamy or fine silty over clayey soils with permeable subsoils and slight seasonal waterlogging; suitable for dairying and stock rearing, cereals and short term grassland; developed over Keuper Marl to the north west of the River Alne.
- ***Worcestor:*** slowly permeable non-calcareous and calcareous red clay soils; suitable for permanent and short term grassland and some cereals; developed over Keuper Marl to the west of Haselor and east of Alcester.

6 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

6.1 **Palaeolithic** (*c*.500,000 - 10,000 BC)

The first humans entered the area now known as Britain about 500,000 years ago. They hunted and foraged for food, and were more sophisticated than their earlier ancestors. Britain lay on the north western extremity of the Palaeolithic world, and during this period was joined to the Continent by a land bridge where the English Channel now exists.

The Palaeolithic was a period of glaciation, interspersed with long periods of slightly warmer climate, known as interglacials. People's presence in Britain during the Lower and Middle Palaeolithic period (*c*.500,000 - 40,000 BC), was mainly concentrated in southern and south eastern England, and occupation would have been largely limited to the warmer interglacials or, during an ice-age, to brief summer visits from mainland Europe.

The Upper Palaeolithic period (40,000-10,000 years bp) is characterised by the production of more sophisticated stone tools, and personal ornaments. However, the occupation of Britain during this time, was interrupted by a glaciation which prevented human settlement for several millennia (20,000-15,000 years bp). At this time, the country would have resembled polar desert. It was not until the climate warmed that Britain was gradually re-colonised.

People avoided the densely wooded valley regions, preferring to build camps beside open water, swamps and grassland. River floodplains provided a variety of habitats supporting a wide range of game. Local quartzite was fashioned into axes which have been found in the upper Avon valley around Coventry and at Little Alne, to the north of Alcester (Slater 1997).

6.2 **Mesolithic** (10,000 - 4,000 BC)

Mesolithic culture appears to have been a response to dramatic environmental changes created by much warmer climatic conditions. The huge body of water freed by the melting of the ice sheets contributed to the enlargement of the oceans, and by *c*. 5800 bc, the raised sea level had isolated Britain from the rest of Europe. The insulating properties of the sea caused further rises in winter temperatures.

Temperature increases caused the spread of coniferous forest. Scrub woodland and forest gradually replaced the tundra and cold steppe grassland of the Palaeolithic, providing new habitats more suitable for small woodland game than herbivorous herds of large animals. By 6,500 BC the climate had become warmer and wetter, and the coniferous forest gave way to denser, deciduous woodland. These environmental changes provided Mesolithic people with a much broader and abundant subsistence base than had been available in the Palaeolithic. The valleys of inland rivers provided forest game, fish and plants.

Mesolithic people responded to these improved conditions in a number of ways. New tool types, tactics and skills were developed for the exploitation of resources. Projectiles, to be thrown by hand or shot from a bow, are particularly prominent in

the archaeological record. Burins, awls and scrapers were also in use, and the manufacture of hafted flint axes and adzes indicates that some woodland clearance was being attempted, and that timber working was possibly taking place. Towards the end of the Mesolithic, it is possible that people were taking greater control of their environment, using fire in a more concerted effort to clear trees and create scrub and grassland. Although there is little evidence for this in the pollen record, it would have been a logical progression towards the pastoralism of the Neolithic period. Sedentism may also have increased in the Mesolithic due to the greater variety and abundance of subsistence forms.

Activity is evidenced by flint scatters, including axes, arrow heads, cores and waste flakes. Mesolithic occupation is known along the Avon valley and in the Tame Blythe basin. The settlements tended to be seasonal or temporary, but it is thought that small scale cultivation may have been used to supplement hunting and gathering.

Just outside the study corrior, two archaeological evaluations to the east of Westgrove House have revealed flintwork scatters, at least one of which was Mesolithic (MON 1211504).

6.3 **Neolithic** (*c*.4,000 - 2,500 BC)

The adoption of agriculture and the appearance of new technologies, such as ceramics characterise this period. New flint and stone technologies included cutting edges sharpened by grinding, flint sickles and stone querns used for harvesting and processing grain. Stone axes and fire were used to clear areas of dense woodland where crops were sown and stock grazed. Neolithic woodland clearance is thought to be responsible for the considerable depths of alluvium that have accumulated in areas such as Alcester.

Society by this time was sufficiently large, organised and affluent to construct immense ceremonial monuments and consequently funerary arrangements became increasingly complex. Such changes could have been engendered by new settlers from abroad, or may have resulted from a gradual influx of ideas, perhaps communicated through trading links.

The period is characterised by substantial ritual landscape features such as long barrows and henges. Only four long barrows are known in the county and all lie on the easily cultivated soils of the middle Avon valley between Warwick and Stratford (Slater 1997). The only surviving henge monument is in the far south of the shire at Great Rollright on the Oxfordshire border. The region has been heavily cultivated since the Neolithic period and most known monuments are traceable only as cropmarks.

Another type of monument introduced in the Neolithic is the *cursus*. This comprises a rectilinear bank and ditch running parallel to each other and can stretch for many miles. The cursus often became a focus for later funerary activity. There is a small cursus near Thelsford in the middle Avon valley and others at Barford and Wellesbourne (ibid.).

Quartzite and flint pebbles are common in the Boulder Clay on the sandstone plateau of Arden and in the river valley gravels and there is a quartzite ridge in the north east of the county. A quarry near Nuneaton is believed to be the source for a group of stone axes found in the upper Avon valley, but other axes were imported from Graig Lwyd in North Wales and Langdale in Cumbria. Numerous stone axes and hammers have been found over a wide area of Warwickshire, but the pattern of archaeological excavation has resulted in most of the pottery of this period being found in the area between Warwick and Coventry. There is a particular concentration around the modern town of Warwick, which may have been an important centre with a ring ditch fortification (ibid.).

There are a few Neolithic findspots immediately outside the study corridor, suggesting there was at least some activity in the area. At Coughton Court, a single flint flake was found in the backfill of an east-west oriented ditch and four postholes or small pits containing worked flints of probable early Neolithic date were discovered during excavations (Evans 1991). An axe and rubbing stone were found in 1923 between Alcock's Arbour and Oversley Wood (MON 330890) and in Alcester, Neolithic remains were found in Meeting House Lane in 1927 (Salzman 1945).

6.4 Bronze Age (*c*.2,500 - 700 BC)

Influences from the continent brought the first bronze objects, new types of flint and pottery, and new forms of burial rite. These rites involved the use of grave goods and the construction of large funerary monuments, which hint at social differentiation. It is during this period that the great henge monuments were built, such as Avebury in Wiltshire.

As the Bronze Age progressed, people increasingly lived in nucleated farming communities, with the more fertile and sheltered lowland locations being most favoured. One such farmstead at Barford, south of Warwick, was occupied from the Neolithic to the Iron Age.

Many bronze implement forms were either imports from the Continent, or influenced by Continental forms. Early metal objects appear to have been limited in their use and availability. By 1000 BC, new weapon forms such as socketed leaf shaped spearheads and slashing swords were being produced. The few examples of bronzes from Warwickshire include a dagger from Rugby and spearheads from Leamington.

Pottery types vary from early period grit-tempered Peterborough and grooved wares through to Deveral-Rimbury wares, with late period angular profiled forms showing a Continental influence. Beakers are well finished decorated vessels, used throughout the period as grave goods, with examples from Warwickshire being found at Bagington, near Coventry. Most of Warwickshires Bronze Age pottery comes from the Sowe and Upper Avon Valley areas (Slater 1997).

Numerous Bronze Age hoards have been found throughout Britain. Hoards appear to exist for four main reasons: some were votive offerings, particularly those in the sides of streams; some were disposed of on dry land in order to create scarcity and

to drive up the value of such objects; some were created by members of society who wanted to show their wealth and high standing and others were created by accidental loss. In Warwickshire four Bronze Age swords were found at Meriden (ibid.).

A wide variety of burial practices were employed in Britain during the Bronze Age: inhumation, cremation, simple pits, stone cists, wooden coffins, flat graves with no surface marker, and graves covered by a cairn or mound. A cremation cemetery was found at Ryton on Dunsmore, south east of Coventry (ibid.). The more prominent, above ground monuments have made a greater impact on the archaeological record, and very few simple pit burials are known. Monumental burials are thought to have been constructed by leading families, partly as territorial markers, particularly in the middle of the second millennium BC, when there was a great deal of land taking. Most of the thirty or so burial mounds found in Warwickshire have been ploughed flat, but there are a few standing examples, such as those at Burton Hastings north of Coventry (ibid.).

Burnt stones are often found in quantity on prehistoric sites and some may be remnants of features known as "burnt mounds". These consist of oval or crescent shaped heaps of burnt stones with a stone lined pit at the centre. Hot stones would be used to heat water in these pits, the sudden temperature change creating their characteristic cracking (Darvill 1987). They are usually located next to water and in Warwickshire are found in the headwaters of streams on the Birmingham Plateau (Slater 1997).

6.5 Iron Age (*c.*700 BC - 43 AD)

New ideas about working with iron came from the continent, probably initially by communication through trade, and later by a series of Celtic tribal invasions and immigrations. Iron was largely used for weapons and farming tools, the production of which would have increased during the period. Iron ingots have been found at various sites throughout the country, including hillforts such as Meon Hill and Nadbury Camp in south Warwickshire. These ingots are known as currency bars because of their uniform size and weight and because they are often found as hoards, but should more properly be seen as evidence of a well organized industry and trade in raw materials.

Copper, bronze and gold continued to be used for utensils and decorative ware. Pottery began to be made using a potter’s wheel, and inscribed coins began to be minted in Britain.

Climatic deterioration brought colder, wetter summers, and along with population growth led to competition for land and the development of a more organised and territorial society. Archaeological evidence for this social shift includes new burial practices and new forms of settlement known as *oppida.* Covering, on average, 30 to 50 hectares, these incorporated extensive, although minor, linear defences designed to protect the houses and cattle enclosures within from attack. Lowland settlement sites could be ‘open’, or defended with banks and ditches. In both cases, the settlement could include either an isolated farm, or a group of farms, with dwellings consisting of wattle and daub round houses. Settlement layouts

varied in complexity. Some comprised banks, ditches, storage pits, trackways and rectangular plots.

Hillforts are a feature of the Iron Age landscape, reflecting a period of tribal territorial consolidation. They vary in complexity and size from rapidly constructed hilltop enclosures with a single bank and ditch, used as livestock folds and territorial boundary defence outposts, to highly developed forts with massive multiple ramparts that evolved over many years on sites of longstanding occupation. There are twelve hillforts in Warwickshire, of which Priory Park, Warwick, and Wappenbury, Leamington, are examples of the latter type.

Linear earthworks, often running for several miles and consisting of single or multiple banks and ditches are believed to be territorial boundary markers or land use divisions. The dates for these features are not certain, but Iron Age is the most commonly attributed (Thorn 1997, 1998). Hob's Ditch Causeway runs for three miles near Tanworth-in-Arden. The remains of Grim's Ditch in Warwickshire are visible as a series of discontinuous linear earthworks. 'Hob' and 'Grim' refer to 'the Devil', variations of which are appended to many historically unexplained landscape features, such as Devil's Dyke, Sussex, and Grimes Graves, Norfolk. 'Grim' is also applied to many similar, but unrelated linear earthworks, such as Grymes Dyke in Essex.

Escalating demands for agricultural land and fuel for iron smelting, meant that forestry clearance continued apace. Many new fields were cut from the forest, whilst fields established in the Bronze Age probably continued in use. Remnants of Iron Age field systems are often known as 'Celtic' fields. In Warwickshire the more easily cultivated gravel soils of the Avon Valley and the Tame-Blyth Basin meant that all of this land was farmed as intensively as was possible for that period. Stock would be driven from summer pasture on higher ground, such as the plateau country of Arden to graze and manure the valley fields during the winter.

Trade and droving were facilitated by a network of trackways throughout the country. In Warwickshire the Jurassic Way, a network of ancient tracks, ran along what is now the south-eastern border of the county. The Salt Way ran east-west through Stratford to the salt producing centre of Droitwich, crossing the north-south Ridgeway west of the Avon.

Trade contacts and influxes/invasions from Gaul in the Late (Pre-Roman) Iron Age, brought about cultural changes and new tribal and political organisation. Prompted by rumours that Britain had a wealth of resources, Caesar invaded in 55 BC. By this time the two main Belgic tribes in the Midlands were the *Catuvellauni,* who occupied the East Midlands down to the River Thames, and their immediate neighbours, the *Dobunni,* whose territory included present day Warwickshire, the Welsh Marches, and the iron producing region around the lower Severn Valley. The tribal capital of the *Dobunni* was Corinium Dobunorum, present day Cirencester. Caesar reached Hertfordshire before being forced to withdraw his troops to deal with troubles on the Continent. Over the following years the British tribes were frequently at war adopting varying pro or anti Roman allegiances. The aggressive, expansionist approach of the Catuvellauni brought them into conflict with the Dubunni, who looked more frequently to Rome for support (Hunter 1995).

Although places have ususally been renamed, some topographical features, particularly rivers, retain the Celtic names they bore in the Iron Age. The River Arrow, or *Arwan Stream*, mentioned in the 11th century, derives from the Celtic word *arva*, meaning "to rise, surge or flow". Similarly, the Avon, recorded as *Afene* in the 11th century, is formed from the Old British *Abona*, from the Celtic word *afon* meaning "river". Another Celtic name is commemorated by Bidford-on-Avon, which is named after the *Byd* stream. *Alne* derives from the Celtic word for white (*alwen)* and gave its name to both Great Alne (recorded as *Alne* in 1086) and to Alcester (recorded in 1138 as *Alencestre*, the second element, *ceaster*, was the Old English word for a Roman town).

Just west of the study corridor, near Welford Pastures Farm, a cropmark complex and surface scatters are thought to indicate the presence of an Iron Age settlement on the site of a later villa (MON 331112).

6.6 **Roman** (AD 43 - 410)

Over most of England, the Roman invasion was followed by a rapid implementation of centralised administration based on towns and supported by a network of roads. Road networks had previously been little more than tracks formed by the feet of people and livestock. Roman army engineers built more substantial roads with metalled and cambered surfaces, to expedite the movement of soldiers, food and equipment. Naturally these roads were also exploited as trade and communication routes. Other, more minor roads, would have supported a dense network of routes serving farmsteads and villas.

The *Dobunni*, whose territory included present day Warwickshire, and the *Atrebates*, from the Thames Valley, allied themselves with the Romans and welcomed the invasion of 43 AD which brought defeat to their enemies, the *Catuvellauni*. By 47 AD the Romans had occupied southern Britain. The constuction of the Fosse Way, which runs along the Jurassic escarpment through eastern Warwickshire, established a temporary frontier from which they continued their advance northwards until they had to retreat and reorganize after the Boudiccan revolt of 60 AD.

By 75 AD Warwickshire had been given over to civilian rule, but the earlier years of intense military activity resulted in a large number of forts being built in the area, with examples at Orchard Hill, near Stratford, Budbrooke, near Warwick, and on Ryknield Street south of Alcester (Slater 1997).

Throughout Roman Britain, most of the population lived in farmsteads and small hamlets, where the round house, usually surrounded by rectangular ditched and banked enclosures, remained the principle structure. The countryside of Warwickshire reflected this trend and the region lacked the large villa estates seen in the more favoured Cotswolds to the south. The few examples of Roman farmhouses that exist in the county are small, square in plan and timber framed. A farming village of this type existed at Tiddington, near Stratford. Cultivation of clay soils became more widespread with the introduction of the heavier Roman plough. Arable farming with summer pastured livestock continued much as it had during the Late Iron Age.

The largest settlement of Roman Warwickshire was the market town of Alcester. It had a small, walled centre with large, well appointed merchants houses. Outside the walls was an extensive industrial area producing metalwork and pottery and there were large cemeteries on the perimeter of the town (Slater 1997).

Mancetter was at the centre of Warwickshire's main pottery producing area, with smaller kilns at Fenny Compton and Perry Barr. The Mancetter area also produced coal which was disributed throughout the Midlands. Clay tiles, used for roofing and hypocaust pillars were a Roman innovation. The raw materials needed, sand, water, clay, and charcoal for fuel, were readily available around the north side of the Avon Valley where the tile factories were situated.

Road networks had previously been little more than tracks formed by the feet of people and their livestock. Roman army engineers built more substantial roads with metalled and cambered surfaces, to expedite the movement of soldiers, food and equipment. Naturally, the roads were also exploited as trade and communication routes. The Fosse Way and Ryknield Street pass through Warwickshire, with smaller roads linking them together. Well established prehistoric trackways, such as the Jurassic Way in the south east of the county, continued to be used.

The Roman Empire was in decline by the late fourth century. The last consignment of bronze coins from Rome was sent to Britain in 402 AD and five years later the Roman army left Britain. By 411 AD, all supply of coinage had ceased and Britain was no longer part of the Roman Empire.

Roman pottery was discovered in a pit and a ditch during excavations at Coughton Court and sufficient residual material was found to indicate the presence of a Roman settlement very close by (Evans 1991).

A Roman lead coffin and 3rd to 4th century villa are recorded just west of the study corridor, near Welford Pastures Farm (MON 331112).

6.7 **Early medieval** (AD 410 - 1066)

The Saxon period was one of great instability. Roman rule and authority in Britain began to disintegrate long before the departure of the last Roman troops in AD 410. The effects of the breakdown were exacerbated by internecine fighting and Saxon raids from abroad. British leaders hired Saxon mercenaries to protect them against other, raiding Saxons. In return they were allowed to settle and given land. There is archaeological evidence for Germanic or Saxon people living in Warwickshire before the end of Roman rule around the stategic river crossings of Stratford and Bidford-on-Avon.

After the end of Roman rule, the system of administration rapidly broke down. Towns, the centres of administration, were abandoned, the economy stagnated, coins stopped circulating and much of the Roman infrastructure ceased to be used. By the mid-fifth century AD the Saxon mercenaries had been joined by a large number of settlers and had become farmers. South and south-east Britain were brought under Anglo-Saxon control during the later fifth and sixth centuries.

Archaeological evidence indicates that Warwickshire was settled by two main groups of Saxons. The West Saxons came up the Thames Valley to occupy the lower Avon and Severn valleys, this became part of the territory of the South Mercians. The Anglians came via the Wash and the Nene Valley to occupy the upper Avon Valley and north Warwickshire, which became part of the Kingdom of the *Hwicce*. Tribal sub-territories existed within these kingdoms. The *Stoppingas* occupied the Arrow-Alne valleys and the Stratford area. By the seventh century the Mercians, under King Penda, had absorbed the *Hwicce*.

Penda died as the last heathen king of Mercia in 654 AD. His Christan successors established a Mercian bishopric at Lichfield and a *Hwiccean* bishopric at Worcester. The diocesan boundary reflected the political landscape, running from Tanworth in Arden to Tysoe, with the Mercians to the north east and the *Hwicce* to the south west. Minster churches with their own estates were established at Stratford and elsewhere. Only part of the church at Wootton Wawen survives as a physical remnant. By the eleventh century the church building had come under the patronage of the nobility giving rise to a system of parish churches by the twelfth century.

Early Saxon cremation ritual was gradually replaced by burial with grave goods. Examples of Saxon cremation cemeteries in Warwickshire include those at Baggington, Tiddington and Marston. Burials with grave goods of the Anglian tradition were excavated at Emscote, Longbridge and Alveston and those of the West Saxon tradition at Bidford.

Mercian power began to wane after King Offa's death in 796 AD. Danish raids increased throughout the ninth century. By 874 AD most of Mercia had been ceded to the Danes. A series of battles and skirmishes culminated in a treaty of 877 AD, which divided Britain into Saxon and Danish territories. Warwickshire lay outside the Danish territory or *Danelaw*, the boundary of which lay along Watling Street. A series of fortresses or *burhs* was built at strategic points throughout the Saxon kingdom of Mercia, including Warwick, in order to maintain peace. A second Danish invasion in the early eleventh century put a Danish king on the throne, and finally brought Danish and Saxon England under one rule. Warwick was sacked and many villages burned. Warwickshire was created from the subsequent Mercian reorganisation.

In the middle or late Saxon period, small fields were replaced by large, open fields, divided into strips. This was in response to population growth and increasing arable land requirements. Warwickshire reflected this trend, with a communal farming system based on villages. Stratford was one such example, with barley, rye and beans being grown there (Slater 1997).

Although it is not recorded before 1235, the placename Walcot (*Walcote)* is an ancient derivation meaning “cottages of the Britons”. It is formed from the Old English words *cot(e)* and *wealh* (Welshmen or Britons) and draws a distinction between the incoming Angles and Saxon and the native British.
Many placenames in the study area are known from 8th century documents. Kinwarton was recorded in 714 as *Kineuuarton.* It means “Cyneweard’s farm”.

Westgrove Wood was known as *Westgraf* in 704-9. The name refers to its position in relation to Stratford (Gover et al 1936).

Quinton, recorded as *Quentone* in 848 derives from the Old English *cwen + tun*, meaning “the queen's farmstead or estate” and indicating royal ownership during the late Saxon period. Temple Grafton was known simply as *Greftone* in the 10th century It means “farmstead by the pit or trench”. The affix *Temple* is a medieval addition referring to possession by Knights Templars or Hospitallers and is not recorded until 1363 (Mills 1996).

West Grove, to the west of Red Hill Wood in Haselor parish, may be the *westgraf* mentioned in an early 8th century boundary record (Salzman 1945).

Old English personal names also feature in placenames such as Dorsington (recorded in 1060 as *Dorsitune*: *Deorsige’s tun* or farmstead), Braggington (*Bracca’s tun*), Oversley (*Ofer’s leah* or forest clearing), Binton (recorded as *Bynningtun* c.1005: estate of a man called *Bynna*) and Bickmarsh (*Bicca’s* marsh). The marsh to which this refers may be the same area recorded in the placename *Merstuna* (Long Marston) in 1043. Long Marston was formerly known as Dry Marston or Marston Sicca and denotes a “farmstead near a marsh” (Mills 1996).

Barlichway hundred was formed from the smaller hundreds of Ferncumbe and Pathlow in the twelfth century. First recorded as *Barlicheweihund* in 1174, the name is an Old English formation meaning “barley way” or “the road along which barley was carried” (*baerlic weg*). The hundred meeting place was near Barley Leys (Gover et al 1936).

King *Kenred* of Mercia gave Binton manor and land in Kinwarton to the church of Evesham in 708 and in *c.*709, an ecclesiastical council was held at "the celebrated place called Alne", (probably Alcester) to consecrate the foundation of Evesham Abbey by *Ecgwin*, Bishop of Worcester. The chronicles of Evesham Abbey contain a spurious charter of 710 AD which records that *King Ceolred*, gave lands in Binton, Exhall, Arrow and Grafton to the abbey. The Evesham Chronicle of *c.*1125 claims that *Ecgwin's* preaching to the people of Alcester was drowned out by the hammering of the town's smiths. *Ecgwin* therefore invoked Divine retribution in the form of an earthquake, which swallowed up both town and smiths. The site of the town was then given to Evesham Abbey. A 15th century legend tells a similar story relating to St. Chad. The Mercian king *Cenwulf* gave land in Great Alne to his new abbey at Winchcombe in Gloucestershire in *c.*809. Bickmarsh was given by *King Edgar* to his thegn *Brihtnoth* in 967 (Salzman 1945).

The road leading from the B4089 to Coughton Fields is believed to have been a Saxon highway (Saville 1985).

Several burials were discovered by quarrymen at the north end of Binton village in 1856 (MON 331044). There were no accompanying grave goods and the skeletons were aligned east-west, which suggests they were Christian. The group is believed to date from the early medieval period.
An Anglo Saxon disc brooch was discovered outside the study corridor to the south west of Kinwarton (MON 330947). Brooches are commonly found in pagan burials,

but it is uncertain whether this is a stray loss or representative of a cemetery in the area.

6.8 **Medieval** (AD 1066 - 1540)

There was little resistance in Warwickshire to the conquering Normans, but unrest in York persuaded William to march north, building large motte and bailey castles at Warwick and Nottingham en route. In 1085, having gained control over the northern counties, William instigated a survey of his new possessions. The resulting "Domesday Book" of 1086 divided Warwickshire into ten tax paying districts or 'hundreds'. These were streamlined into four hundreds in the later medieval period (Slater 1997). Lands were measured in *hides*. The area of a hide could vary from 60 to 180 acres, but each hide was considered sufficient to support one family (Saville 1985).

The Domesday Survey documents many of the villages in the study area. It provides our earliest record of some settlements, including Upton (*Optone)* which is an Old English derivation meaning "upper farm", Oversley (*Oveslei)*, Welford-on-Avon (*Welleford*) or "ford by the springs", (Kings) Coughton (*Coctune*) from the Old English *cocc* (hillock)+ *tun* (farmstead) and Haselor (*Haseloue*) "the hill where hazels grow". The manor of Alcester was not mentioned in the Domesday Book, but later evidence shows it belonged to the Crown from an early date (Salzman 1945).

At Domesday, Oversley manor was held by the Count of Meulan, who later became the Earl of Leicester. The manor belonged to the honour of Leicester throughout the Middle Ages. It passed to one of the earl's officials, *Ralph le Boteler,* in the twelfth century. *Ralph* is believed to have built "Botelers Castle" and, with the earl, founded the monastery of Alcester, endowing it with lands in Oversley. Bordesley Abbey acquired lands in Oversley in the twelfth century. The *Botelers* of Oversley also held the manor of Upton in Haselor (ibid.).

The manors of Bickmarsh and Dorsington lay in the parish of Welford on Avon in Kington hundred. By 1086, Bickmarsh was held by *Edith* under the title, "The King's Alms", for the 5 hides in Warwickshire and, "The Lands of the King's Thegns", for the hide that lay in Gloucestershire. A hide of land in "Little Dorsington" was in the hands of *Stephen the Steersman* at this time. This estate lay at the western edge of Welford on Avon, at the boundary with Dorsington and Bidford parishes.

The bishops of Chester, Worcester, Bayeux and Coutances all held land in Warwickshire. The Bishop of Worcester's estate, centred on the valuable lands of the Avon valley around Stratford, was the most significant. Three distinct farming regions have been identified from the Domesday Survey of Warwickshire. The Feldon region, in the south east of the county was the most populous and intensively cultivated, whilst the north west was well wooded and sparsely populated. The study area lies in the third region and includes the middle Avon terrace belt, east of Bidford, which was as prosperous, intensively cultivated and populous as the Feldon, with recorded population densities as high as a dozen adults per square mile. In the Arrow and Alne valleys and the upper Avon there was much

more woodland and population densities of 6 to 8 per square mile. The settlement at Arrow, to the west of the pipeline corridor, was typical of the area, having 7 plough lands but only 6 plough teams, which meant that there was spare land available to be brought into cultivation if required (Slater 1997). Within the study area, the Domesday Survey reveals large variations in land use between parishes: Kinwarton had little or no woodland or waste, whereas Great Alne and Haselor were still well wooded (Saville 1985).

By 1086, Arrow and Binton were held by *Odo*, the Bishop of Bayeux. Arrow manor contained a mill, 30 acres of meadow and some woodland. Domesday mentions two mills in Binton, but by the 13th century, only the mill at Binton bridge remained. This mill was granted to Bordesley Abbey in 1215 but has now disappeared. The manor of Haselor was held by *Nicholas the Crossbowman* at Domesday, but had passed to *Robert de Haselor* by 1235. *Robert* gave land and a mill in Haselor to the Prioress of Cookhill in Worcestershire. The medieval mill of Alcester stood on the River Arrow close to the abbey and Alne Mill, to the south of Great Alne village, is probably on the same site as the mill mentioned in the Domesday Book. Hoo Mill, on the Alne, is first mentioned by name in 1609, but there was a mill in Haselor manor at Domesday and a watermill was recorded in the manor in 1315 (Salzman 1945).

By about 1215, the smaller motte and bailey castles had largely been abandoned in favour of moated homesteads. There are hundreds of moated sites in Warwickshire. A few, like Beauchamp's Court (built in 1340) and Ragley (built in 1381), were the fortified mansions of minor aristocrats, but most were ordinary farmsteads. As well as being something of a status symbol, the moat provided protection from marauders and a well drained farmyard. Wet moats could be used as a fishponds, swanneries or duckponds. Moats fell from favour after *c.*1450 and many sites were abandoned for new stone or timber houses nearby. The moats may have continued in use as fishponds but eventually many were drained. This change in fashion is seen at Coughton Court, which was built early in the 15th century. The house was substantially altered and extended in the 16th century and the moat was backfilled (Slater 1997). The moat that surrounded Kinwarton Manor House was probably much older than the now-vanished Tudor building (Saville 1985). The dovecote that stands outside the moated area dates from the 14th century and is mentioned in a grant of 1345-67 (ibid.).

There were marl-pits in Coughton parish in the Middle Ages and the district was subject to floods. There were hamlets to the south east and south west of the church (SAM 30030). The settlement at Coughton Court developed at the crossroads of Ryknield Street and Coughton Lane at the edge of the Royal Forest of Arden - known locally as *Feckenham Forest* - on an acknowledged route through the forest. A gate into the forest stood near the crossroads (ibid.).

Travellers entering or leaving the Feckenham Forest traditionally offered prayers at a cross at the Coughton Lane crossroads. The stump of the medieval stone cross remains (SAM 30030). A socket stone for a cross is also reputed to have been found south east of the church in Temple Grafton (MON 331059). Standing crosses were mostly erected between the mid 10th and 16th centuries. Those in churchyards provided stations for outdoor processions and elsewhere they were used to define

boundaries, rights of sanctuary, markets and places for public proclamation, penance and preaching. Some crosses commemorated saints or battles. There were probably more than 12,000 standing crosses throughout England, but many were destroyed by iconoclasts 16th and 17th centuries and now less than 2,000 remain.

The Knights Hospitallers held a chapel and camera in Temple Grafton. This was first recorded in 1189 and last mentioned in 1604 (MON 331074). It is thought that the chapel may have stood on the site of the 19th century parish church (MON 331068). A church at Grafton is documented in the Domesday Book and was owned by the Hospitallers in 1277. A watching brief (Coutts 1999) was carried out during the construction of a small extension at Croft Lane, Temple Grafton (NGR SP 1228 5485) in 1999 because of the possibility of encountering remains associated with the Knights Hospitallers' chapel (MON 331074). Only modern bricks and services were found.

The road leading north west towards Hoo Mill from the A46 is of ancient origin. It was known as *Trench Lane* in 1280 and formed the boundary of Haselor parish (Salzman 1945). The B4089, which leads to the 13th century *Gunnings Bridge* in Alcester, is also thought to be medieval in origin (Saville 1985). The A46 was used as a salt way in the Middle Ages and there was a salt pan attached to Haselor manor in 1086. The manor of Hillborough in Temple Grafton also had salt rights at Droitwich attached to it and the riverside path from Hillborough to Bidford may be a survival of another salt way. The field names *Great* and *Little Salters Piece* occur south east of the junction of the A46 and the Haselor to Temple Grafton road, prompting the suggestion that the Temple Grafton road was another branch of the salt way, probably continuing to Hillborough. *Salters Lane* was mentioned in the Haselor enclosure award of 1767 (Salzman 1945).

Political stability during the thirteenth and fourteenth centuries encouraged prosperity and population growth. This led to the rapid development of markets and boroughs. Towns provided the ruling class with tenement rents and market tolls. At Domesday, Warwickshire's main centres were at Tamworth and Warwick, but Stratford developed as an important trading centre in the later medieval period.

Villagers farmed large “open fields” which were divided into strips. Strips measured approximately 220 by 26 yards and each usually covered an area of a quarter to a third of an acre. In the townships of south Warwickshire they were often divided by a strip of grass a yard or more wide or sometimes by a deep furrow. The strips were grouped into rectangular furlongs and arranged so that the furrows drained down the slope. The two-field system is thought to be the oldest form of open field cultivation. In south Warwickshire it was used until the 14th or 15th century, but population pressure resulted in the two fields being divided into four or more. By the 16th century many townships in the middle Avon valley had five to eight fields (Slater 1997). Many common fields were established in the Middle Ages. People with common rights could graze their livestock on this land in the periods between harvesting and sowing.

In the medieval period, Kings Coughton had its own open fields, separate from those of Alcester. Parts of these are believed to have been enclosed as early as the 16th century (Booth & Parkinson 1993). Excavations at Kings Court revealed early

ploughsoils, one of which produced two coarse potsherds of the twelfth to thirteenth centuries (ibid.). As late as 1752, most of Kinwarton parish was still cultivated on the strip system, with six open fields, and a map of 1834 shows parts of Great Alne's open fields still divided into strips. Temple Grafton, Exhall and Ardens Grafton each had four fields.

It is thought that Exhall manor was allocated to various freeholders in the 13th century, resulting in a confusion of civil, ecclesiastical and manorial boundaries. The process of enclosure in Haselor parish also began at an early date; in 1241, the parson was permitted to "inclose his portion with heaps and ditches and to better it in any way". Sir George Throckmorton made his boundary inclosure around Great Alne lordship with "quyckset hedge & dyche" in 1532-3. There is also evidence of enclosures in Great Alne as early as the 13th century and, in a statement of recent enclosures dated 1552, three areas in the parish are mentioned as having been enclosed in "tyme out of mynde" (Salzman 1945).

Medieval field systems can be preserved as earthworks or be traceable in soilmarks or cropmarks. Areas of ridge and furrow can be seen in aerial photographs of the study area. A number of known, undated earthwork and cropmark sites of field systems, field boundaries and trackways may also be medieval.

The sites of shrunken and deserted Medieval villages are scattered throughout the region. Throughout England, recurrent poor harvests and plagues curbed population growth at the beginning of the fourteenth century and in 1348-9 the Black Death reduced the number of people in many settlements by a third or more. Farm holdings, particularly on marginal land, were being abandoned even before the plague struck, but the process accelerated as the population dwindled. In most villages, land came back into use within a generation, but it was held on easier terms and exploited differently. Often, uncultivated land that had reverted to rough pasture was used to graze large flocks of sheep. By the 1480s, the population had substantially recovered and wool prices were outstripping corn prices. For those rich enough to make the investment, pastoralism became very profitable. This led to many areas being turned over to pasture and drove out peasant farmers by depriving them of land on which to grow food (Slater 1997).

Many farmers who made their fortunes from sheep or cattle sought to demonstrate their improved status by building a mansion house and laying out a deer park around it. This imparking of common land provided yet another catalyst for village desertion (Slater 1997). In the mid 16th century, Sir Fulke Greville converted a large part of Alcester Heath (to the north of Alcester) into a park. Its position is now marked by Alcester Park Farm, approximately a mile west of the study area. Coughton Park was enclosed by Robert Throckmorton in 1486 and another 18 acres at Coughton were imparked in 1525.

In 1486, the priest and historian, John Rous, railed against, "the modern destruction of villages" and listed 60 places in the Warwick region that had been "destroyed" due to the process of enclosure. The situation became so serious that in 1489 the government passed an "Act against the pulling down of towns" and in 1515 ordered all lands converted to grass since 1488 to be returned to tillage (Slater 1997).

6.9 **Post medieval** (AD 1540 - 1939)

At the beginning of Tudor rule, England was suffering from high taxation and towns
were small were small and decaying. By the end of the Stuart era England had become one of the wealthiest nations in the world.

The introduction of new farming methods in the eighteenth and nineteenth centuries was necessary to feed the growing populations of England's towns and cities. In Warwickshire, many field drains were laid in the period between 1790 and 1830. They consisted of trenches filled with furze (gorse) or small stones, covered with flags or turf. After 1815, when the duty on them was lifted, tiles were often used as a covering (Rowlands 1987).

Enclosure of common lands continued as new farming techniques required land to be reorganised. Enclosure was advantageous to many land owners and tenants because improvements in farming gave them better yields and allowed them a higher standard of living. However, enclosure brought great hardship to poorer tenants and those who depended on the common lands. The free grazing land had enabled the poor to supplement their incomes by keeping small amounts of livestock. With enclosure, poor tenants were often turned out and their cottages cleared. Enclosure greatly changed the appearance of the countryside, creating the small geometrically shaped fields we see today.

In the Avon valley parishes of Bidford, Great Alne and Temple Grafton, there was a great deal of piecemeal enclosure between 1750 and 1780, much of it by groups of freeholders. After 1780, rising land prices encouraged wealthier landlords to enclose large, populous parishes which had previously been left alone to avoid stirring up local resistance (Rowlands 1987).

By the time of the enclosure award of 1771, much of Alcester parish had already been enclosed (Salzman 1945) and Binton parish was enclosed in 1779. A 1754 estate map of Kinwarton shows a seres of irregular closes on land which was once open field. Some of these enclosures took place in 1638 and 1641, but there is some suggestion that others occurred in the Tudor period. The final Act of enclosure of Kinwarton was made in 1803. The rearrangement resulted in the removal of three farmhouses and the building of two more on the west side of the parish (Saville 1985).

Rivers had long played a significant role in the district's transport system. The Avon was made navigable as far as Stratford, so from the 1660s, coal was brought upstream from Bristol and malt and agricultural produce sent back downstream (Rowlands 1987). A wharf stood near the bridge across the Avon at Binton until the river ceased to be navigable (Salzman 1945). There were massive seasonal changes in water levels in parts of the study area. Long Marston was sometimes known as *Dry Marston* or *Marston Sicca*, due to the scarcity of water there in summer, "though in Winter it sometimes looks like an island, being overflow'd on all sides by 2 Currents" (Atkyns 1712).

Improvements in communications took place in the eighteenth and nineteenth centuries. The first railways were built across the region, new roads laid out and old

ones improved. Relatively minor roads were the last to be turnpiked. The B4089, for example, was not turnpiked by the Alcester-Wootton Wawen Trust until 1814 (Saville 1985). Alcester was an important stopping point on the coach route from London to Shrewsbury and Holyhead until the mid 19th century, but coaching declined with the opening of the Evesham to Redditch railway in 1866 and the Great Western Railway line from Bearley in 1876. The L.M.S. railway from Stratford to Broom Junction crossed the study corridor just south of the A436 Stratford to Bidford road but is now dismantled (Salzman 1945).

Exhall village was not approachable from either Stratford or Warwick until the 18th century, hence its traditional name "Dodging Exhall". The 1767 enclosure map shows the road through the village running north east by Alcock's Arbour to Haselor. The road is now faintly traceable across the fields, but was marked on maps until 1841 (Salzman 1945).

By the 17th century Haselor was predominantly a village of yeoman and freeholders, a circumstance reflected by the number of large timber-framed farmhouses surviving there. In Binton the cottages are built of local lias stone or timber-framed, occasionally with crucks. Many of the old houses in Coughton were demolished in the late 19th century.

Wool was an important commodity and weaving flourished in Alcester during the post medieval period. A quarter of the Hearth Tax returns for 1663 came from cloth trade workers and in 1633-45 the town was described as "consisting of knitters". Much of Alcester's prosperity derived from its location at the centre of a corn-growing district. It was noted as a very good market for corn in 1746 and malting was an important industry in the town, with seven kilns operating during the 19th century. Glove, nail and gun manufacture also contributed to the local economy in the 17th and 18th centuries.

A fishery in the River Arrow was held with the site of the chief manor of Haselor in 1545 and there was also a fishery in Upton manor recorded in 1589. Fish-hooks and needles were manufactured in Binton in the 19th century and needlemaking was recorded in Alcester in 1678 and by the early 19th century over 500 people were involved in the industry.

In 1618, stone for Alcester's market hall was brought from a quarry in Great Alne, and in the late 19th century there were important stone quarries at Binton and Temple Grafton. Stone and slates from Temple Grafton were used in Stratford in the early 15th century and by the mid 19th century nearly a third of Grafton's householders were employed as masons or quarrymen. A close named "Brick kiln ground" in the western part of Kinwarton parish suggests that there was temporary clay-mining there in the 19th century (Saville 1985).

Welford on Avon parish was originally partly in Gloucestershire and partly in Warwickshire. In 1894, the Warwickshire portion was constituted the distinct parish of Bickmarsh. In 1931, the parishes of Dorsington and Welford on Avon were transferred from Gloucestershire to Warwickshire, while Bickmarsh was divided between Dorsington and Pebworth (in Worcestershire).

6.10 **Modern** (1939 onwards)

The population of the West Midlands has risen from c.600,000 in the early nineteenth century to *c*.4 million in the present day. Industry is centered on Birmingham and Coventry. Rural industry is virtually non-existant, with a large number of people now working in sevice industries and tourism. The villages and small towns of the Warwickshire countryside are now largely commuter dormitories. The busy arterial roads radiating from larger towns, such as Stratford, have been upgraded to replace a once extensive railway network. WW2 defences and airfields, such as Long Marston are found throughout the county.

7 ARCHAEOLOGICAL REMAINS WITHIN THE STUDY CORRIDOR

7.1 Prehistoric

The study corridor displays a number of undated cropmark sites, such as enclosures and linear features, many of which may be prehistoric. These sites are concentrated mainly at the northern end of the pipeline corridor (e.g. WSMR 2046, WSMR 2067, WSMR 4670 and WSMR 4918). In addition, two undiagnostic, prehistoric flint tools were discovered during fieldwalking for the proposed widening of the A46 (WSMR 7273).

7.2 Palaeolithic (*c*.500,000 - 10,000 BC)

There are no known palaeolithic remains within the study corridor.

7.3 Mesolithic (10,000 - 4,000 BC)

There are no known mesolithic remains within the study corridor.

7.4 Neolithic (*c*.4,000 - 2,500 BC)

There are no known neolithic remains within the study corridor.

7.5 Bronze Age (*c*.2,500 - 700 BC)

There are no known Bronze Age remains within the study corridor.

7.6 Iron Age (*c*.700 BC - 43 AD)

A gold plated copper core coin of the *Coritani* (the tribe occupying north east Warwickshire) was found at Alcock's Arbour on the western edge of the study corridor (WSMR 1518).

7.7 Roman (AD 43 - 410)

Roman settlements have been identified at two locations within the study corridor (WSMR 4646 and WSMR 9139). At the northern end of the route, cropmarks of enclosures and linear features 1km north of Kings Coughton are associated with a scatter of Roman pottery (WSMR 4646). Although no excavation has taken place to confirm the link, it is possible that the cropmarks represent a Romano-British settlement. A coin of 4th century date (WSMR 6619) was found in the vicinity by metal detectorists and may be associated with the settlement.

The second possible settlement lies at the other end of the pipeline route, to the south east of Long Marston village (WSMR 9139). Roman pottery was recovered from the topsoil and from a number of ditches excavated in advance of laying the Newbold Pacey to Honeybourne gas pipeline. A number of undated cropmark sites and earthworks within the study area may also be Romano-British settlements.

Other sites in the corridor have produced Roman material, but at present there is no evidence of associated features that would indicate settlement. A single piece of Roman pottery (WSMR 2754) was found beside the A439, but the road is not known to have been in use in the Roman period. Finds from near Kinwarton church suggest Roman activity in the area. These include Romano-British pottery (WSMR 5214) from Kinwarton DMV and a lost assemblage of pottery, sandstone and swords from the rectory garden dated to the Roman *or Saxon* period (WSMR 1563).

An "Old Wives' Story" connected with a cave near the foot of Alcock's Arbour tells of a chest full of treasure. The discovery of Roman coins in the same area may explain how the tale originated (Salzman 1945). The legend prompted an excavation in 1924. Large amounts of 2nd and 3rd century pottery were recovered from the north west side of the hillock along with a few coins of 117-375 AD. More potsherds, thought to be wasters from a Romano-British kiln, were recovered from the top of the hill in 1927. More Roman pottery, coins, brooches and a bracelet were found at Alcock's Arbour in the 1960s and 1970s. The finds suggest some sort of activity taking place on the hilltop in the Roman period, but no structural remains have been found. It has been proposed as a possible temple site (WSMR 1518).

Two important Roman roads cross the study corridor. A major Roman road (WSMR 446) ran east and south-east from the salt production centre at Droitwich. This "saltway" can be traced across much of Warwickshire. It follows the line of the A46 across the pipeline corridor between Alcester and Stratford (WSMR 4757). Beyond Stratford, the road continued south east towards the Foss Way and eventually out of the county. Icknield or Ryknield Street (WSMR 445) passes just to the west of the northern AGI. The road ran north from the Fosse Way at Bourton on the Water, through Alcester and on to Yorkshire. It is thought to have been developed piecemeal in the second half of the first century and may have been an advanced section of the frontier line supposedly represented by the Fosse Way. There would have been minor roads leading off these two main thoroughfares; some of these may have survived as roads, footpaths, field boundaries or tracks.

7.8 **Early medieval** (AD 410 - 1066)

Placename evidence and charters dating from the early 8th century onwards suggest there was settlement throughout the study corridor in the early medieval period, but only Kinwarton has recorded remains. This is due to a combination of factors, notably the lack of development, the limited amount of field survey, the fragility of Saxon material culture and difficulties of identification. Many of the villages and DMVs in the study area have Old English names, but physical traces of Saxon settlement are apparently scarce.

It is suggested that there may be a Saxon cemetery (WSMR 1562) to the south of Kinwarton church because some skeletons found in the churchyard were not oriented east-west. This could imply that they are pagan, which in turn could indicate a Saxon date. Although a pagan Saxon origin is proposed, there is no evidence of grave goods associated with the burials. However, the lost swords (WSMR 1563) and pottery (WSMR 6330) found nearby in the rectory garden were said to be of Roman *or Saxon* date.

Roman roads such as Ryknield Street and the A46 evidently continued in use throughout the Saxon period, though others may have fallen into disrepair and disuse. The early medieval saltway known as *Sealt Stret* (WSMR 8217) from Droitwich ran between Bishopton and Salford, following the course of the present B439 across the pipeline corridor.

Some of the parish boundaries within the study corridor are also potentially Saxon.

7.9 **Medieval** (AD 1066 - 1540)

Deserted medieval villages (DMVs) and shrunken settlements are scattered throughout the pipeline corridor. There are examples of DMVs at Kinwarton (WSMR 3774), at Hillborough, near Bidford (WSMR 1728) and at Dorsington Parva, to the north of Dorsington Manor (WSMR 1814). The DMV beside the River Arrow to the east of Coughton is a scheduled site (SAM 30036) and there is a possible DMV near Dove House, to the north east of Temple Grafton (WSMR 3909, WSMR 4919). The alleged settlement site at Willicote, to the east of RAF Long Marston, was found to be covered in ridge and furrow, suggesting that the grid reference is wrong or that the site has been mistakenly identified (WSMR 1822). Settlement shrinkage is recorded at Coughton (WSMR 9130), Temple Grafton (WSMR 9036) and Long Marston (WSMR 6459, WSMR 6450).

Three homestead moats survive within the study corridor, but in each case the homestead has been demolished. Braggington moat (WSMR 1813) lies towards the southern end of the corridor, to the north east of Dorsington. It is a square moat, water-filled and possibly stone lined in places. Farther north are another wet moat at Grafton Court (WSMR 1724) and earthworks of a moat at Kinwarton, 100m north of the church (WSMR 5212) along with traces of the manorial fishponds (WSMR 5213).

A fragment of late 11th century cross shaft was found in the stable yard of Kinwarton rectory. It now stands in the churchyard and is a scheduled monument (SAM 33138). The 14th century dovecote which stands to the north east of the church is also scheduled (SAM WA 69). The church is dedicated to St.Mary (LS 3/171) and was consecrated in 1316, though parts of it are thought to be much earlier. Beside the River Alne, south of Kinwarton village, stands Hoo Mill (LS 7/93). During the medieval period it was a watermill used for grinding corn. Many of the mill buildings are still standing and documentary evidence suggests there was a mill on the site in 1086 and in 1315.

The sites of three former medieval buildings are known within the corridor. Masonry fragments found in the garden of Hillborough Manor are thought to belong to the manor house (WSMR 4997) associated with the deserted settlement (WSMR 1728). Until the 16th century, the medieval chapel of St Mary Magdalene (WSMR 1733) stood just to the south of Hillborough Manor. It is now visible as a cropmark. By contrast, in Temple Grafton, the site of the manor or "preceptory" of the Knights Hospitallers (WSMR 1725) has not been precisely identified. The preceptory was mentioned in 1338 and may date back to 1189, when the order was

granted land in the area. It is thought to lie to the south of the village, near Grafton Court.
Medieval artefacts are relatively unrecorded within the corridor, there being only two known findspots, both involving metal items: a bronze sword chape from the fields west of Upton (WSMR 391) and three horse pendants found by metal detecting north east of Kinwarton church (WSMR 4517).

Barlichway hundred was first recorded as *Barlicheweihund* in 1174. The name is an Old English formation meaning “barley way” or “the road along which barley was carried” (*baerlic weg*) (Gover et al 1936)."Barley Leys" is a corruption of the name (WSMR 8675). The hundred's meeting place (WSMR 5211) was on Haselor Hill near Barley Leys Farm. It was described in 1640 as "a place about eight yards square inclosed with a hedge and ditch uppon the topp of a hill about the midway betweene Haselor and Binton" at the meeting point of the parishes of Temple Grafton, Binton and Haselor (Salzman 1945). A wooden post set in concrete on Haselor Hill is believed to be a boundary marker (WSMR 1528), but its age is uncertain.

The name "Barley Leys" was applied in the medieval period to the road leading south from the A46 towards Binton (WSMR 8675). Much of the course of the Roman Ryknield Street continued in use as a road during the medieval period (WSMR 8674). The section south of Alcester was known as *Buggildestret* (Burghild's Road) and later, *Buckle Street.* The section crossed by the study corridor was called *Haydon Way.* The road leading north west towards Hoo Mill from the A46 is believed to be an old saltway (MON 330945). It was known as *Le Trenche* in 1280 and *Staunchar's* Lane in 1545. It formed the boundary of Haselor parish (Salzman 1945).

In many places, the study corridor passes through medieval field systems. Most of these sites are represented by earthworks of ridge and furrow cultivation identified from aerial photographs (e.g. DBA:EX, EZ, FR, FX). A ditch and bank (WSMR 3775) on the Alcester/Coughton parish boundary are believed to be medieval, though Roman pottery has been found in the same area (WSMR 4646).

7.10 **Post medieval** (AD 1540 - 1939)

Kinwarton Manor House was recorded in 1624. By 1722 it was known as the "Great Farm" and the tenant customarily held the duty of "keeping a bull for the use of the parish". The house was occupied by the Hopkins family in the 17th and 18th centuries, but was pulled down in 1752 (WSMR 1567). The site was marked by a small enclosure surrounded by a moat. At Temple Grafton, a modern building stands on the site of the ancient manor house. The old building was destroyed in 1804 (WSMR 5426).

The grounds around Grafton Court were laid out *c.*1876, when the house was built (WSMR 8559). They include formal gardens, pleasure grounds and parkland. A map of 1822 shows parks around both Kinwarton House (WSMR 8699) and Glebe Farm (WSMR 8700).

South east of Coughton, a deserted village nucleus has been identified on the east bank of the River Arrow. The site lies to the north of a deserted medieval settlement (SAM 30036), at the core of an open field that was still operating in the 17th century. Many of the houses were still occupied in the mid 18th century (WSMR 5228). There are also traces of a shrunken post medieval settlement at Kinwarton (WSMR 5488).

On the west bank of the Arrow, south east of Coughton, a map of 1725 shows an "Old Mill" (WSMR 5229) and on the east bank, at Mill Ford Farm, there was a watermill in the 17th and 18th centuries (WSMR 5230). Mid 18th century maps show watercourses at King's Coughton, suggesting that there had been a corn mill there, though no buildings were evident (WSMR 5021). A water-powered needle mill was built on the site between 1775 and 1800. During the 19th century Hoo Mill was used as a needle mill (LS 7/93). In 1844 a small needle-pointing mill was built onto the existing corn mill and both sets of machinery were operated by a single waterwheel. The mill house adjoins the corn mill.

Various buildings noted on 19th century maps of the study corridor have been ascribed to the post medieval period. For example, the 1886 Ordnance Survey map shows farm buildings DBA:BH, DBA:BJ, DBA:CF, DBA:CI, DBA:CN and DBA:CU, and the enclosure map of 1815 shows Dove House Farm (DBA:BZ) north of Temple Grafton and houses at Grafton House Farm (DBA:CA and DBA:CB). There is a chance that some of these post-medieval buildings have medieval origins or occupied the sites of medieval structures. Other unlisted buildings of local interest include a 19th century pumping station (WSMR 1551).

Although the origins of field names may be ancient, those within the study corridor have been ascribed to the post medieval period because the earliest records of them date from the tithe awards of the 1840s. Names such as "Mill Piece", "Mill Ground", "Homeage" and "Barn Close" all suggest the presence of a building in or near the field.

Turnpike roads from Stratford to Bradley Brook via Alcester (WSMR 4786) and from Alcester to Lickey and Bromsgrove (WSMR 4807) were established between 1750 and 1775. A milestone of 19th century date stands beside the Bradley Brook turnpike, on the west side of Trench Lane (WSMR 7278) and there is a toll house at the junction of the turnpike and the road from Upton to Temple Grafton (WSMR 1503). The turnpike road from Stratford to Andersford was established in 1756 (WSMR 4829) and the road from Alcester to Wootton Wawen was turnpiked by an Act of 1813-4 (WSMR 8686).

In 1886, the Barnt Green and Ashchurch branch railway ran north from Alcester on the west side of Ryknield Street (DBA:AT) and the Alcester and Bearley branch railway (DBA:BA) ran east across the pipeline route towards Great Alne. Both have been dismantled. On the Bearley line, there was formerly a railway bridge (WSMR 1548) over the road, close to the junction of the B4089 and the Coughton Fields Road, just west of the pipeline route. There was a cutting a few hundred metres to the west which has been partly infilled, though the bridge carrying the line over the cutting survives (WSMR 1549). Opened by GWR in 1859, the Honeybourne to Stratford railway crossed the pipeline route between Long Marston village and

airfield (DBA:DM). The line is now a bridlepath known as "The Greenway". Another dismantled railway runs east-west across the pipeline corridor just south of the B439 (DBA:DH).

7.11 **Modern** (1939 onwards)

RAF Long Marston is a Second World War airfield covering 426 acres north east of Long Marston village. Large areas of steel mesh were laid alongside the tarmac runways to stop stray aircraft. It was in use until 1944 and thereafter intermittently until the late 1960s. It is now partly destroyed (WSMR 8029).

7.12 **Unknown**

Numerous undated sites, which cannot be ascribed to specific periods, are located within the study corridor. These include cropmarks of enclosures and linear features (WSMR 2046, WSMR 2047, WSMR 4670, WSMR 4918, WSMR 6478, WSMR 6745 and WSMR 6963, which may be geological in origin, and DBA:AL, DBA:AM and DBA:GO); ten sites of ponds (DBA:BC, DBA:BD, DBA:BF, DBA:BQ, DBA:BR, DBA:BT, DBA:CG, DBA:DY, DBA:DZ and DBA:EA); an oxbow lake (DBA:AX); a mill stream (DBA:AZ); and a former stream course (DBA:AN); more than forty tracks, roads and paths and seven orchards.

8. HISTORIC LANDSCAPES AND BOUNDARIES WITHIN THE STUDY CORRIDOR

Although the pipeline corridor lies within modern Warwickshire, the southern part of the study area was originally part of Gloucestershire. The old 'shire' boundary follows the River Avon. The pipeline passes through the hundreds of Barlichway and Kington in Warwickshire and, in what was once Gloucestershire, the hundred of Upper Kiftsgate. Barlichway hundred was formed from the smaller hundreds of Ferncumbe and Pathlow in the twelfth century.

The corridor includes land in the parishes of Coughton, Alcester, Kinwarton, Great Alne, Haselor, Oversley, Temple Grafton, Binton, Welford on Avon and Bidford on Avon, and in the part of Warwickshire which used to belong to Gloucestershire, Dorsington, Long Marston and Quinton. Upton, in Haselor, and Bickmarsh, in Welford, were both discrete parishes in the past.

Numerous ridge and furrow earthworks indicate that the study corridor runs through areas of medieval and/or early post-medieval field systems.

8.1 Hedgerow Regulations

The Hedgerow Regulations (1997) define a set of archaeological and historical criteria used for determining whether hedges are Important (see Appendix B). The temporary closure of the Warwickshire Record Office means that some historic boundaries cannot be identified at present, because in certain areas the mapping currently available is all later than 1845.

From the available data, twenty-six hedgerows crossed by the proposed pipeline route are Important (see appendix E). Twenty-five are field boundaries (pre-1845, or associated with an archaeological site) and one is a parish boundary (DBA:BX) (see table 8.1). These are shown by solid orange lines and by a dotted orange line respectively on figures 10-12. These hedgerows are considered to be of at least regional importance, and some may be nationally important**.**

8.2 Existing field boundaries

Ninety existing field boundaries are crossed by the proposed pipeline route. Applying the archaeological and historical criteria of the Hedgerow Regulations (1997) means that there are six historic field boundaries and one historic parish boundary (not marked by an Important Hedgerow). These are shown by solid purple lines and by a dotted purple line respectively on figures 10-12. Non- historic field boundaries are left unhighlighted and non-historic parish boundaries are shown by green dotted lines.

Generally, the historic field and parish boundaries are of local importance, but some could potentially be of regionally or nationally important.

8.3 Former field boundaries

Two hundred and twenty-eight former field boundaries have been recorded within the study corridor. The boundaries were seen on tithe maps, early OS maps and aerial photographs, and are recorded as solid blue lines, labelled by source and date, on figures 10-12. Seventy of these former field boundaries are potentially historic as they appeared on pre-1845 maps (see table 8.1). Generally, these boundaries are of local importance, but some may be regionally or nationally important

9. BUILT ENVIRONMENT OF THE STUDY CORRIDOR

Settlement in this part of south west Warwickshire is generally dispersed consisting of small villages and isolated farmsteads and houses. The larger villages and towns tend to have developed alongside the rivers Alne, Arrow and Avon. The largest settlements within the study corridor are the villages of Temple Grafton and Long Marston, the latter being named for its characteristic elongated plan form. Small hamlets and farms are scattered fairly evenly across the rest of the study area.

There are a few listed buildings at the north end of the study corridor. In Coughton, the Coughton Cross Farmhouse (LS 1/157) on the east side of the Birmingham Road, is an early/mid 19th century red brick building of three storeys with a slate roof. Nearby, on the west side of the Birmingham Road, stand the Port of Rest Almshouses, now listed as Nos.1 to 3 Coughton Cross Cottages (LS 1/165). They have brick infilled timber framing with an old tile roof. he six 17th century almshouses now form three cottages. The roadside elevation was rebuilt in the 19th century. Less than a kilometre to the west, at Coughton Fields, lies Mill Ford House (LS1/166). This is a former farmhouse dating from the early 19th century. Built of red brick with a hipped tile roof, it is three storeys high and built on a T-plan.

A kilometre to the south of Coughton stands King's Coughton Mill House (LS 2/98), a late 18th century/early 19th century L-plan building of brick and plaster with a tile roof. Just to the west, beside Ryknield Street, is Kings Court Motel (LS 2/9). This was originally Kings Coughton Farmhouse, a 17th century building with a late 18th century range and late C20 additions and alterations. The original house is timber framed with lath and plaster infill, underbuilt with lias rubble. The 18th century range is red brick with classical detailing and a slate roof.

There is a cluster of listed buildings in Kinwarton. Glebe Farmhouse and attached former cowhouse (LS 3/174) are listed grade II and belong to an interesting group of buildings. The timber framed farmhouse dates from the mid 17th century and the red brick former cow house is 18th century/early 19th century. The open cartshed (LS 3/177) SW of the farmhouse is 18th century. It is timber framed with a half-hipped old tile roof. The weatherboarded late 17th century/18th century barn (LS 3/176) between Glebe Farmhouse and Shepherd's Yard (the former Rectory) is listed grade II because of its group value. Another barn and attached animal housing (LS 3/175) adjoin the west wing of farmhouse. These date from the 17th century/18th century. They are timber framed with brick infill, weatherboarding and a tile roof. Shepherd's Yard (LS3/178) is the former rectory of Kinwarton. Dating from *c.*1788, it is built of red brick with a slate roof and classical detailing. The contemporary service or stable wing adjoining the house has been converted into dwelling.

The grade II* listed twelfth century Church of St. Mary the Virgin in Kinwarton (LS 3/171) was largely rebuilt *c.*1316 and restored in 1850. It is constructed of limestone and lias with old tile roofs. The weatherboarded turret with its pyramidal shingle roof was added in the 16th century or 17th century. Two scheduled monuments - a cross shaft (SAM 33138) and a dovecote (SAM 69) - stand nearby. Part of the shaft of a carved limestone cross (SAM 33138) dating from the late 11th

century survives in Kinwarton churchyard. Faint traces of interlacing knot ornament appear on three sides. The fragment now forms part of 19th century monument. The early/mid 14th century dovecote (SAM 69) is of rendered limestone with an old tile roof. It is circular in plan and has a lantern probably dating from the 17th century. Unusually, it retains its potence. It is said to be the only relic of a moated grange which belonged to the Abbey of Evesham.

In Alne End, less than a kilometre to the north west of Kinwarton, Alne Cote (LS 7/82) is a 17th century cottage with C20 alterations and additions. It is timber framed with an attic and thatched roof.

Just south of Kinwarton village, the mill and attached millhouse at Hoo Mill (LS 7/93) are listed grade II. The mill dates from 1810 and the millhouse was rebuilt in the mid 19th century. The mill is built of lias ashlar and brick. The millhouse is 2 storeys of Bidford brick. Each has an old tile roof. The mill has its original wheel and machinery, all in good working order.

There is another cluster of listed buildings in Temple Grafton and the village's Conservation Area extends eastwards, incorporating a close-knit group of listed buildings within the study corridor. Three buildings at Top Farm are listed, namely the farmhouse (LS 1931-1/3/89), Top Farm Cottage (LS 1931-1/3/88) and a barn (LS 1931-1/3/81). Just to the north, beside Church Bank road, there are more listed cottages (LS 1931-1/3/84-6). The Baptist Chapel (LS 1931-1/3/80) on Church Lane is built of soft blue lias and has a tiled roof. The present church was built in 1864 following the demolition of the previous building originally occupied by the Moravians.

Small groups of historic buildings survive on the scattered farmsteads around Temple Grafton. Approximately a kilometre to the north east of the village, there are two listed buildings at Barley Leys Farm. The farmhouse (LS 7/84) is an L-plan 18th century red brick building incorporating part of a stone barn. The adjacent 17th century/early 18th century barn (LS 7/85) was listed for its group value. It is timber framed with brick infill and some weatherboarding and an old tile roof. On the west side of the study corridor, south of the A46, there is another group of listed buildings at Rollswood Farm. The farmhouse (LS 7/95) is built on a double-pile plan of two parallel ranges. It has 17th century origins, but its front range is mid/late 18th century. The back range is partly timber framed with brick infill and an old tile roof. It forms part of an interesting group with the L-plan stable and barn (LS 7/96) to the south east. These are of one build beneath a single old tile roof, dating from the mid/late 18th century. The stable is of regular coursed lias and brick, whilst the barn is timber framed with weatherboarding on a lias plinth. Near Grafton Court, a little to the south of Temple Grafton, Court Farmhouse and coach house and the adjacent barn and dovecote are all listed (LS 1931-1/3/76-8).

Farther south, there are more groups of historic buildings on DMVs and moated sites near the River Avon. At Hillborough, on the north bank, the earlier parts of Manor House (LS 1931-1/3/103) are timber framed, dating from the early 16th century. Lias additions were made *c.*1600. A circular stone dovecote (LS 1931-1/3/104) nearby is described as "ancient" by the VCH, but is thought to be post

medieval. South of the river, at Braggington and Dorsington Manor there are further listed structures (LS 3/53 and LS 3/39).

At the southern end of the pipeline route, in Long Marston village, there are two groups of listed buildings that fall within the study corridor. On the east side of the village, there are three listed structures (LS 13/108-110) at The Goodwins one of which is listed grade II* (LS 13/110). It is a 17th century building of coursed rubble with stone slate roofs. At the northern end of the Welford Road in Long Marston there are two listed cottages (LS 1912-01/13/96 and LS 1912-01/13/98).

10. ARCHAEOLOGICAL POTENTIAL

10.1 Prehistoric

Numerous undated sites, such as cropmarks of enclosures and linear features, cannot be ascribed to specific periods, but many may be prehistoric. However, a general lack of known flint scatters within the study corridor suggests a low potential for prehistoric settlement.

River valleys and floodplains have provided a focus for human activity since the Palaeolithic. The routes of streams and rivers may change over time, but their ancient courses often survive as palaeochannels. Palaeochannels are potentially of archaeological significance as there tends to be a pattern of prehistoric exploitation in their vicinity. The areas of highest potential are those flanking the rivers Arrow, Alne and Avon.

10.2 Palaeolithic (*c*.500,000 - 10,000 BC)

The landscape through which the pipeline passes is highly unlikely to produce '*in-situ*' remains of Palaeolithic camps or activity areas, but unstratified flint artefacts (and possibly organic remains) are possible within derived gravels associated with the rivers Arrow, Alne and Avon and their associated tributaries.

10.3 Mesolithic (10,000 - 4,000 BC)

The total lack of mesolithic remains within the study corridor suggests a very low potential for remains of this period. However, based upon findings further afield a pattern of mesolithic exploitation can be anticipated upon slightly raised areas of land within the floodplains, and gravel terraces flanking the rivers Arrow, Alne and Avon. 'Task specific' sites of short- to medium-term use might be indicated by small flint scatters. Flint procurement activity may be found in areas of derived flint associated with the River Terrace deposits and Head. Stray finds elsewhere along the route are more likely to be the result of hunting expeditions.

10.4 Neolithic (*c*.4,000 - 2,500 BC)

The lack of known Neolithic remains within the study corridor cannot be taken as an indication that sites of this period are not present. Sites are likely to be archaeologically invisible to non-intrusive investigations, particularly where sites are sealed beneath riverine alluvium or hillwash.

10.5 Bronze Age (*c*.2,500 - 700 BC)

Due to the lack of Bronze Age remains within the study corridor one has to look further afield for guidance on modelling likely areas for Bronze Age activity. Watercourses appear to have acted as focii for settlement, transport, economy and the disposal of votive offerings during this period. The potential therefore exists for well-preserved sites to be found beneath alluvium associated with the rivers Arrow, Alne, Avon and their tributaries.

10.6 Iron Age (*c.*700 BC - 43 AD)

There is a moderately low potential for remains of the early and middle Iron Age. Sites of these periods are most likely to be found in the same type of location as those of the Bronze Age.

There is, however, a much higher potential for the discovery of late Iron Age remains due to the density of known Roman settlement in the region, and the known pattern of continuity that has been established across the region. Late Iron Age exploitation of the surrounding landscape, in the form of small 'open' or enclosed farmsteads and associated field systems is therefore to be expected.

10.7 Roman (AD 43 - 410)

The region through which the pipeline passes was moderately densely settled in the Roman period. As a consequence, Roman occupation in the form of villas, settlements and/or farmsteads can be anticipated throughout the study corridor. Areas of particular potential along the proposed pipeline route include north east of Alcester, south east of Long Marston (WSMR 9139), south west of Haselor, and west of the River Arrow near King's Coughton where cropmarks indicate the location of a substantial rectilinear enclosure (WSMR 4646).

One Roman road (WSMR 4757) is crossed by the proposed pipeline route south of Haselor. The precise course of this road across the study corridor is not known. There is a potential for the discovery of the road's *fosse* and *agger* (roadside ditches and road makeup). Roman roads often attracted settlement and burial, for instance a possible Roman temple site (WSMR 1518) is located next to the purported course of the Roman road approximately one kilometre west of the point where it is to be crossed by the pipeline. There is a potential, therefore, for Roman activity alongside this Roman road, and also Roman Ryknield Street (WSMR 445) which lies on the west side of King's Coughton AGI.

10.8 Early medieval (AD 410 - 1066)

Many of the parishes crossed by the pipeline have documentary evidence of Saxon settlement, and the six parish boundaries crossed, are all potentially Saxon. However, as Saxon sites are typically located away from contemporary areas of settlement, their locations are notoriously difficult to predict. Saxon burials, in the form of family or community cemeteries are unlikely to be located close to their associated settlements, and may be focussed along ridge tops. There is a potential for Saxon settlement and burial in the vicinity of Kinwarton, where burial remains (WBSMR 1562) are suggested to be Saxon.

There is also a potential for Saxon activity alongsid the early medieval saltway known as *Sealt Stret* (WSMR 8217) which crosses the study corridor.

10.9 **Medieval** (AD 1066 - 1540)

The pipeline has been routed to avoid existing built-up areas many of which have their origins in the medieval period. However, deserted medieval villages (DMVs) and shrunken medieval settlements are scattered throughout the pipeline corridor and there is a moderately high potential therefore that similar sites will be encountered along the proposed pipeline route. There is also a moderate potential for the remains of mill buildings and associated water channels in the vicinity of the three major river courses.

The present-day field systems along the proposed pipeline appear to incorporate medieval elements, and consequently the majority of unexpected medieval remains are likely to be agricultural in origin (e.g. ridge and furrow).

10.10 **Post medieval** (AD 1540 to 1939)

As the industrial revolution had little immediate effect on this part of Warwickshire, economic activities remained focused on agriculture and its associated trades, most of which were undertaken in established towns and villages, which are avoided by the proposed pipeline. Mill remains are, however, possible in the vicinity of the River Arrow, where several known sites are recorded between Alcester and Coughton (e.g. WSMR 502, DBA:AC, AD, AY). Former field enclosures, workers cottages and agricultural buildings are also possible along the route.

There is also a potential for encountering workers camps in the vicinity of four dismantled railways: The Barnt Green and Ashchurch branch railway (DBA:AT), the Alcester and Bearley branch railway (DBA:BA), the Honeybourne to Stratford railway (DBA:DM) and another dismantled railway just south of the B439 (DBA:DH).

There is a low potential for encountering post-medieval remains associated with the turnpike roads recorded on the course of the proposed pipeline. The reasons for this are that there is unlikely to have been substantial post-medieval activity alongside the roads and it is currently proposed that all the roads are crossed by non-open cut.

10.11 **Modern** (1939 onwards)

The only significant remains of this period are likely to be military defences associated with RAF Long Marston, but as the proposed pipeline route passes outside of the known extent of the site the potential for remains is low. Possible remains include trenches or structures, dating from World War II to the 1960's.

10.12 Historic landscapes and boundaries

The main historic landscape features that are likely to be encountered are banks and ditches relating to three 'Hundred' boundaries, fifteen parish boundaries, two park boundaries and numerous existing and former field boundaries. The recording of sections through these sites might lead to an understanding of landuse, environment and construction methods. Archaeologically significant layers, such as old land

surfaces, may be sealed beneath banks. Absolute dating is unlikely, as field boundaries tend to be remote from settlement areas.

10.13 Built Environment

There is a very low potential for encountering and recording the built environment as the pipeline has been routed to avoid built-up areas and structures.

10.14 Palaeo-environmental and organic remains

Alluvium within floodplains and former water channels may contain preserved organic material such as seeds, wood or leather, fabrics, and animal tissue. These items can shed light on past human activities which are not usually represented in the archaeological record. This type of evidence is nationally rare, and therefore of great significance. Palaeoenvironmental important remains may include wood, leaves, beetles, pollen, etc. Such deposits may be archaeologically important in their own right, or may have a raised value following the discovery of associated archaeological remains.

There is a very high potential for the discovery of palaeoenvironmental and organic remains in the vicinity of the rivers Arrow, Alne and Avon and their associated tributaries along the proposed pipeline.

11. ASSESSMENT OF IMPACTS

11.1 Impacts of the proposed scheme

The following construction activities will have direct and indirect impacts on known and potential archaeological remains:

- *Pre-construction drainage*
- *Fencing*
- *Topsoil stripping*
- *Subsoil benching*
- *Soil storage*
- *Movement of heavy machinery*
- *Excavation of the pipe trench*
- *Working width reinstatement (e.g. subsoil ripping)*
- *Post-construction drainage*

11.2 Site-specific impacts

Two hundred and eighty-three sites have been identified within the study corridor. The known sites have been graded A - D (see 4.8), and the level of impact assessed for each site (see 4.9). This information is summarised below in tables 11.1 and 11.2

Table 11.1 Summary of impacts of the scheme by grade

Grade	Description	Sites within study area	Uncertain impacts	Indirect impacts	Direct impacts
A	Legally protected site	38	0	0	0
B	Nationally significant site, currently not legally protected	5	1	0	1
C	Regionally significant site	30	2	0	4
D	Locally significant site	210	28	0	31
TOTALS		**283**	**31**	**0**	**36**

Table 11.2 Summary of significance of impacts

Significance of impact	Count
None	216
Unknown	31
Low	32
Medium	4
High	0
Total	**283**

The following sections (11.3-11.7) deal in category order with sites that are directly, or indirectly or possibly affected by the proposed pipeline.

11.3 Category A Sites

Thirty-eight legally protected sites are located within the study corridor. None of these sites is directly affected by the proposed pipeline (table 11.1). However, many listed buildings are situated along roads crossed by the proposed pipeline. These may be indirectly affected by vibrations created by heavy pipeline construction machinery and the settings of some buildings may be adversely affected temporarily by the construction work.

11.4 Category B Sites

Five nationally important sites (not legally protected) are located within the study corridor. One will be directly affected by the proposed pipeline and there is an uncertain impact upon one other (table 11.1).

WSMR 3774 (figures 2-4, NGR 410532 258513)
Kinwarton DMV
WSMR 8770 (figures 2-4, NGR 410803 258551)
Glebe Farm Park
Impact: Uncertain; The proposed route skirts around the north east side of the known extent of these two sites. However, the full extent of the DMV has not yet been determined, and so the potential impact of the proposed scheme is unknown.
Significance of impact: unknown

WSMR 4646 (figures 2 and 13, NGR 408580 259767)
Cropmarks of enclosures and linear features north of Kings Coughton are associated with a scatter of Roman pottery (WSMR 4646). These remains are believed to represent a Romano-British settlement. The cropmarks include a large multivallate enclosure that lies just north of the Coughton parish boundary.
Impact: Negative, direct, minor; The proposed route skirts around the north side of the multivallate enclosure and cuts across several of the linear cropmarks that run north from it. The full extent and degree of preservation of this site has not yet been determined.
Significance of impact: medium

11.5 Category C Sites

Thirty category C sites are located within the study corridor, six of which are directly affected, and a further four of which are possibly affected by the proposed pipeline (table 11.1). The sites are discussed below in alphanumeric order:

WSMR 446 (figure 5, NGR 412379 256504)
WSMR 4757 (figure 5, NGR 413748 256213)
The modern A46 follows the line of the Roman road connecting Alcester to Stratford (WSMR 4757). The section of the road within the pipeline corridor also formed part of saltway from Droitwich in the Roman period (WSMR 446). The survival and condition of the road are unknown, but there may be an *agger* (road makeup and surface) and/or associated *fossa* (roadside ditches). There is also the potential for settlement and burial alongside Roman roads.

Impact: Negative, direct; minor; A relatively small cross section of this road will be affected by the proposed pipeline. It is uncertain whether any part of the Roman road will have survived beneath the modern roadway.
Significance of impact: low

WSMR 5228 (figure 2, NGR 408720 259760)
A deserted post medieval settlement near Coughton is still visible as earthworks on the west bank of the River Arrow.
Impact: Negative, direct, minor; The pipeline route runs for approximately 80m across the southern half of the settlement. The survival and condition of any buried remains is not known, but the working width will affect only a small proportion of the site.
Significance of impact: low

WSMR 8029 (figure 9, NGR 417183 248098)
RAF Long Marston airfield
Impact: Negative, direct, minor; The proposed pipeline route runs across the southern tip of the site for approximately 200m. It is possible that the site of a group of WWII aircraft dispersal bays will be impacted by the proposed working width. The route will affect only a small proportion of the airfield.
Significance of impact: low

WSMR 8559 (figure 6, NGR 413063 253645)
The park at Grafton Court was laid out when the house was built *c.*1876. It is not included in the national Register of Parks and Gardens.
Impact: Negative, direct, minor
The proposed pipeline route runs north for approximately a kilometre through the park and may affect parkland features such as trees and watercourses.
Significance of impact: low

11.6 Category D Sites

Two hundred and ten category D sites are located within the study corridor, of which thirty-one are directly affected by the proposed pipeline and the impact on a further twenty-eight is uncertain (table 11.1). The sites are discussed below in alphanumeric order:

DBA:AV (figure 2, NGR 408867 259775)
DBA:AW (figure 2, NGR 409190 259618)
DBA:BB (figures 2-4, NGR 410721 258640)
DBA:CX (figures 5 and 6, NGR 412974 254792)
DBA:CY (figures 5 and 6, NGR 413339 254709)
A number of tracks and paths were plotted from the 1886 Ordnance Survey map.
Impact: Negative, direct, minor; A small section of each of these features will be directly affected by the proposed pipeline.
Significance of impact: low

DBA:BA (figure 3, NGR 411022 258849)
The Alcester and Bearley Branch railway

In 1886, the Alcester and Bearley branch railway (DBA:BA) ran east across the pipeline route towards Great Alne. It has been dismantled.
Impact: Negative, direct, minor; A small section of the former railway will be directly affected by the proposed pipeline.
Significance of impact: low
DBA:BN (figures 2-4, NGR 410523 258865)
DBA:BS (figures 2-4, NGR 410661 258735)
An estate map of 1756 shows areas covered by small field enclosures on both sides of the B4089 Alne End to Kinwarton road.
Impact: Negative, direct, minor; The proposed pipeline cuts through these field enclosures. The present nature of these remains is undetermined.
Significance of impact: low

DBA:BO (figure 2, NGR 410139 259041)
DBA:EL (figure 9, NGR 417677 248036)
DBA:EM (figures 8 and 9, NGR 416896 247924)
DBA:EN (figure 8 and 9, NGR 416052 248421)
DBA:ER (figure 8 and 9, NGR 416923 249060)
DBA:ES (figure 8 and 9, NGR 415911 248692)
DBA:ET (figure 8, NGR 415814 249197)
DBA:EX (figure 7 and 8, NGR 414439 250024)
DBA:EZ (figure 7 and 8, NGR 412965 250904)
DBA:FE (figure 6 and 7, NGR 413005 252359)
DBA:FH (figure 6, NGR 413186 253323)
DBA:FK (figure 5 and 6, NGR 412690 254271)
DBA:FL (figure 5 and 6, NGR 413153 254805)
DBA:FP (figure 5, NGR 412775 255540)
DBA:FX (figures 3 and 5, NGR 412350 256325)
DBA:FY (figure 3 and 5, NGR 412371 256676)
DBA:FZ (figure 3, NGR 411782 257035)
DBA:GA (figure 7, NGR 413016 251508)
DBA:GH (figure 2-4, NGR 410903 258343)
DBA:GI (figure 2, NGR 410641 259107)
DBA:GK (figure 2, NGR 409797 259263)
DBA:GM (figure 2, NGR 409057 259510)
DBA:GN (figure 2, NGR 408390 259979)
Areas of ridge and furrow, both extant and indicated by crop marks, plotted from aerial photographs.
Impact: Negative, direct, minor; The proposed route will cross a small section of each of these areas.
Significance of impact: low

DBA:BX (figure 2, NGR 409813 259230) Kinwarton & Coughton
DBA:BY (figure 2-4, NGR 410687 258292) Kinwarton and Haselor
DBA:GR (figure 7, NGR 413951 251470) Temple Grafton and Welford on Avon
DBA:GU (figure 7 and 8, NGR 414309 250101) Dorsington and Welford
DBA:GW (figure 8, NGR 415629 249213) Welford and Long Marston
DBA:GX (figure 9, NGR 417075 248102) Long Marston & Quinton
DBA:GY (figure 5, NGR 412693 255428) Temple Grafton and Haselor

Parish boundaries plotted from estate and Ordnance Survey maps dated between 1800 and 1886. DBA:BY follows the River Alne, and is therefore unlikely to have any associated archaeological remains. DBA:GR follows the River Avon and once formed the boundary between Gloucestershire and Warwickshire, though the present boundary lies farther south.
Impact: Negative, direct, minor; Only a small section of these boundaries will be affected by the proposed pipeline, and they are unavoidable.
Significance of impact: low

DBA:CH (figure 5, NGR 412313 256116)
A survey post is shown on the Ordnance Survey map of 1886 approximately 400m south of the A46. It is no longer standing.
Impacts: Negative, uncertain, indeterminate; The proposed route passes within forty metres of this site, and so it is not certain whether it will be impacted by the proposed working width.
Significance of impact: unknown

DBA:DG (figure 7, NGR 412981 251094)
A survey post is shown on the Ordnance Survey map of 1887 approximately 200m south of the Welford to Barton road. It is no longer standing.
Impact: Negative, direct, severe; The site of this survey post lies within a few metres of the proposed pipeline and will have to be removed.
Significance of impact: medium

DBA:DH (figure 6 and 7, NGR 413340 252992)
The East and West Junction railway ran east-west across the pipeline corridor just south of the B439 It has been dismantled.
Impact: Negative, direct, minor; A small section of the former railway will be directly affected by the proposed pipeline.
Significance of impact: low

DBA:DM (figure 8 and 9, NGR 415880 2487908)
The Great Western railway
The Honeybourne to Stratford railway was opened by GWR in 1859. The line is now a bridlepath known as "The Greenway", crossing the pipeline route between Long Marston village and airfield.
Impact: Negative, direct, minor; A small section of the former railway will be directly affected by the proposed pipeline.
Significance of impact: low

DBA:DP (figure 8 and 9, NGR 416304 248323)
A series of paths was plotted from the 1884 Tithe Map.
Impact: Negative, direct, minor; A small section of one of the paths will be directly affected by the proposed pipeline.
Significance of impact: low

DBA:EA (figure 2, NGR 409767 259238)
The 1906 Ordnance Survey map shows a pond just north of the Coughton/Great Alne parish boundary.

Impacts: Negative, uncertain, indeterminate; The proposed route passes within forty metres of this site, and so it is not certain whether it will be impacted by the proposed working width.
Significance of impact: unknown

DBA:EF (figure 6 and 7, NGR 412884 252234)
A track running north east from Hillborough DMV was plotted from the 1924 Ordnance Survey map.
Impact: Negative, uncertain, indeterminate; A small section at the north east end of the trackway may be affected by the proposed pipeline.
Significance of impact: unknown

DBA:EJ (figure 8, NGR 415603 249019)
A track north of Long Marston was plotted from the 1924 Ordnance Survey map.
Impact: Negative, direct, minor; A small section of the trackway will be directly affected by the proposed pipeline.
Significance of impact: low

DBA:EO (figures 8 and 9, NGR 416060 248490)
A vegetation mark of a possible building has been observed on aerial photographs taken in 1946.
Impact: Negative, direct, minor; The proposed pipeline cuts through a small portion of this possible site. The present nature of these remains is undetermined.
Significance of impact: low

DBA:EW (figure 8, NGR 415563 249253)
An area of small field enclosures has been observed on aerial photographs to the north of Long Marston
Impact: Negative, direct, minor; The proposed pipeline cuts through the southern part of this area. The present nature of these remains is undetermined.
Significance of impact: low

DBA:EY (figure 7 and 8, NGR 413328 250972)
A track from Dorsington Manor to Bunkers Hill was plotted from an aerial photograph.
Impact: Negative, direct, minor; A small section of the track will be directly affected by the proposed pipeline.
Significance of impact: low

DBA:FC (figure 7 and 8, NGR 413147 251298)
Farm buildings on the north side of the Welford to Barton road were noted on aerial photographs. The buildings are no longer standing.
Impacts: Negative, uncertain, indeterminate; The proposed route passes within thirty metres of the site of these buildings and so it is not certain whether any surviving foundations will be impacted by the proposed working width.
Significance of impact: unknown

DBA:FN (figure 5 and 6, NGR 413259 254382)
A soilmark of ridge and furrow, plotted from aerial photographs.

Impact: Negative, uncertain, indeterminate; The proposed route passes within thirty metres of this site, and so it is not certain whether it will be impacted by the proposed working width.
Significance of impact: unknown

WSMR 2754 (figure 6, NGR 413300 253200)
A Roman potsherd was found beside the A439.
Impacts: Negative, uncertain, indeterminate; The impact on the potential archaeology in this area is uncertain because it is unclear whether the sherd was part of a scatter or a single find and there is no record of any associated features.
Significance of impact: unknown

WSMR 3775 (figure 2, NGR 408236 259721)
Earthwork of a boundary bank oriented east to west. The bank is thought to be medieval and runs parallel to the southern boundary of Coughton parish.
Impacts: Negative, uncertain, indeterminate; The proposed route passes within thirty metres of this bank and so it is not certain whether it will be impacted by the proposed working width.
Significance of impact: unknown

WSMR 4517 (figure 2-4, NGR 410800 258600)
Three medieval horse pendants were found by a metal detector 400m north east of Kinwarton church.
Impact: Negative, direct, severe; It is uncertain whether there are any associated finds or features in the same area The grid reference given by the SMR places this find within 40m of the proposed pipeline.
Significance of impact: medium

WSMR 4786 (figure 3 and 5, NGR 412379 256504)
WSMR 4829 (figure 9, NGR 417759 248766)
Turnpike roads from Stratford to Bradley Brook via Alcester (WSMR 4786) and from Alcester to Lickey and Bromsgrove (WSMR 4807) were established between 1750 and 1775.
Impact: Negative, direct, minor; A small section of each of these features will be directly affected by the proposed pipeline.
Significance of impact: low

WSMR 7273 (figure 3 and 5, NGR 412350 256410)
Two flint flakes were found during fieldwalking in advance of the proposed A46 widening.
Impact: Negative, direct, severe; The entire field in which the flints were discovered was fieldwalked. Although the relative paucity of finds suggests a low level of archaeological activity, there is the potential for further flints or buried archaeological remains to be located in the field or nearby. The pipeline runs through the middle of the field, so its impact on any remains would be severe.
Significance of impact: medium

WSMR 8217 (figure 6, NGR 413270 253170)
The saltway known as *Sealt Stret* dates from the early medieval period.

Impact: Negative, direct, minor; A small section of the saltway will be directly affected by the proposed pipeline.
Significance of impact: low

WSMR 8686 (figure 2-4, NGR 410577 258825)
The road from Alcester to Wootton Wawen was turnpiked by an Act of 1813-4.
Impact: Negative, direct, minor; A small section of the road will be directly affected by the proposed pipeline.
Significance of impact: low

11.7 Historic Landscapes and Boundaries

A summary of those boundaries potentially impacted by the proposed scheme is provided below in table 11.3. Supporting data can be found in appendix E.

Table 11.3 Summary of non-historic/historic boundaries and Important Hedgerows

Boundary type	Non-historic	Historic	Historic with Important hedge	Total
Existing field boundaries	53	6	25	84
Existing parish boundaries	4	1	1	6
Former field boundaries	158	70	-	228
Former parish boundaries	0	0	0	0

12. RECOMMENDATIONS

12.1 Staged approach to mitigation

The most cost-effective means of managing archaeological risk is to implement a staged approach to investigation and mitigation, as laid out in Table 12.1 and explained in greater detail in Appendix C. It is important, however, to avoid an overly mechanistic approach and to ensure a focus on gaining understanding and information relevant to key issues.

Table 12.1 Staged approach to investigation and mitigation

Archaeological Stages of Investigation		**Transco's phase of works**
Stage 1	**feasibility study of route corridor option(s)** an appraisal of archaeological potential	**feasibility assessment**
Stage 2	**desk-based assessment of route corridor** a thorough synthesis of available archaeological information	**conceptual design**
Stage 3	**field surveys of entire preferred pipeline route** field reconnaissance survey, field walking survey, geophysical survey, metal detector survey, auger survey, as appropriate	**detailed design**
Stage 4	**field evaluation of targeted areas along preferred pipeline route** machine-excavated trenches, hand-dug test-pits,as appropriate	
Stage 5	**excavation** detailed excavation of those sites which it is not possible to avoid or desirable to preserve	
Stage 6	**watching brief** permanent presence monitoring of all ground disturbing activities	**construction**
Stage 7	**archive and publication** synthesis and dissemination of results, leading on from each of the stages outlined above	**post-construction**

A feasibility assessment (Stage 1) has already been completed, and this desk-based assessment represents Stage 2. The temporary closure of the Warwickshire Record Office, however, meant that access to some historic documents relevant to the study area was not possible at the time of producing this report. A list of outstanding maps and plans is provided in appendix D, and these should be consulted when access to the record office becomes available in early 2003.

The next recommended stages of work are field surveys, as shown in table 12.2.

Table 12.2 Proposed field surveys

Proposed survey type	Proposed survey area
field walking survey	*arable areas*
field reconnaissance	*entire route*
recorded magnetometer survey and magnetic susceptibility survey	*entire length and a proportion of the width*

In addition to the proposed pipeline's working width, investigation should also cover the sites used for associated engineering works, such as pipe storage areas, site compounds, road crossing areas and block valve sites, as these areas become known.

12.2 Avoidance

Where feasible and desirable, minor alterations to the proposed route or the engineering design will be recommended in response to the findings of the reconnaissance, fieldwalking and geophysical surveys and any necessary evaluations, in order to avoid an impact upon nationally important archaeological constraints.

12.3 Minimisation of Impact

The impact upon unavoidable archaeological sites should be minimised by reduction of the working width to the minimum practical level, and/or the laying of geotextile matting or bog mats, and/or careful reinstatement procedures (e.g. avoidance of subsoil 'ripping' at archaeological sites).

12.4 Route selection

The final pipeline route should be determined in relation to principle archaeological constraints. These are sites of national and regional significance (i.e. sites of category A, B and C).

12.5 **Written Schemes of Investigation** (WSI)

An archaeological WSI should be produced for each of the outstanding stages of work outlined above (see 12.1).

12.6 County Monitoring

The Warwickshire County County Museum Field Service should be invited to monitor the implementation of the archaeological WSIs, and should be informed of any significant archaeological sites found at each stage. Provision should be made for the Warwickshire County County Museum Field Service to review reports, monitor fieldwork in progress, and also to visit the construction site.

12.7 Site-specific recommendations

Archaeological investigation and mitigation, beyond that outline above (12.1 - 12.6), may be appropriate at specific sites where the significance of impact has been determined to be medium or high (see 4.15). In all cases, an appropriate WSI should be agreed with the Warwickshire County County Museum Field Service.

12.8 River floodplains: detection and assessment of archaeological, palaeo-environmental and organic remains

There is often a deep accumulation of clays and silts (alluvium) in floodplain and marshland areas. Alluvium can protect buried archaeological remains from plough damage and development, but can also mask them from the standard techniques of detection such as geophysical survey, field-walking and aerial reconnaissance. Thus, whilst sites are perhaps more likely to survive in these areas, they are harder to detect.

Geophysical survey is the most reliable and cost-effective non-intrusive means of locating buried archaeological remains. However, the geophysical survey techniques which would normally be recommended (magnetometry and magnetic susceptibility), can be unreliable for provenancing sites in areas of deep alluvium (over 0.5m deep).
A more reliable approach may be *predictive modelling*, the detection of areas which are likely to have been favoured for archaeological activity (e.g. raised gravel/ bedrock islands and areas alongside former river channels).

Up to 4m of alluvium has been recorded by boreholes on either side of the rivers Arrow, Alne and Avon (see 5.3), and these deposits may extend at depth across their entire floodplains which are known to be 200-250m wide (Landlook 2002i). Aerial photographic study undertaken as part of this assessment failed to identify any palaeochannels on the course of the proposed pipeline. Depending upon the results of the proposed field surveys (see 12.1), the following investigations should be considered for the river floodplains:

Combined electro-magnetic survey and hand auger survey: The portion of the route that crosses the floodplains of the rivers Arrow, Alne and Avon should be considered for a combined electro-magnetic survey and hand auger survey (see Appendix C).

Evaluation: Ideally, any areas flagged up by EM/Auger survey would be targeted by trench evaluation, and/or anticipated for investigation/recording during a construction watching brief.

***Watching Brief*:** Due to the difficulties in detecting archaeological remains in areas of deep alluvium in advance of construction, and the potential cost of assessing organic and palaeoenvironmental remains, adequate resources should be put in place for dealing with unexpected archaeological remains during construction.

12.9 Historic Landscapes and Boundaries

Existing boundaries have been assessed according to the five criteria for archaeological and historical importance (The Hedgerow Regulations, 1997 - see 8.1 and appendix B). The construction programme should aim to minimise the disturbance of historic boundaries, particularly those marked by an Important Hedge (e.g. by minimisation of the working width - see 12.3). Cross sections of those boundaries which are unavoidable should be recorded during the course of a watching brief. Archaeologically significant layers sealed beneath banks may require sampling. Earthworks, such as banks and ditches, should be sensitively reinstated.

Former field boundaries which have been identified as being potentially historic (see 8.3) should also be targeted for detailed recording during the course of a watching brief.

12.10 Built Environment

No recommendations are made at present, although this situation should be reviewed if built remains are encountered on the proposed route during the field surveys or construction.

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Parish	Tithe map		Tithe apportionment		Enclosure map/award	
	Year	PRO Ref.	Year	PRO Ref.	Year	Comments
Alcester Warwickshire	1851	IR30/36/2	1851	IR29/36/2	1771	Award only, no map
Bidford Warwickshire	1852	IR30/36/24	1849	IR29/36/24	-	-
Binton Warwickshire	1852?	IR30/36/27	1851	IR29/36/27	-	-
Coughton, Warwickshire	1840?	IR30/36/54	1839	IR29/36/54	-	-
Dorsington Gloucestershire	-	-	-	-	-	-
Great Alne Warwickshire	1841?	IR30/36/4	1839	IR29/36/4	-	-
Haselor Warwickshire	-	-	-	-	1767	Award only, no map
Kinwarton Warwickshire	-	-	-	-	-	-
Long Marston Gloucestershire	-	-	-	-	1813	Award only, no map
Oversley Warwickshire	1853?	IR30/36/109	1849	IR29/36/109	-	-
Quinton Gloucestershire	1840?	IR30/13/162	1839	IR29/13/162	1773	Award only, no map
Temple Grafton Warwickshire	-	-	-	-	1815	WCRO ref: QS75/47, map unavailable
Welford Warwickshire	1840	IR30/36/153	1840	IR29/36/153	-	-

An entry '-' means that there is no map or award

Ordnance Survey of England				
Year	County series	Edition	Sheet	Scale
1831	Warks.	1st	Haselor and Temple Grafton	1" to 1 mile
1886	Warks.	1st	37 SE	6" to 1 mile
1886	Warks.	1st	37 SW	6" to 1 mile
1886	Warks.	1st	37 NW	6" to 1 mile
1886	Warks.	1st	43 NE	6" to 1 mile
1887	Warks.	1st	43 SE	6" to 1 mile
1884	Warks.	1st	49 NE	6" to 1 mile
1884	Warks.	1st	50 NW	6" to 1 mile
1906	Warks.	2nd	37 SE	6" to 1 mile
1906	Warks.	2nd	37 SW	6" to 1 mile

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15. STATEMENT OF INDEMNITY

Every effort has been taken in the preparation and submission of this report in order to provide as complete an assessment as possible within the terms of the brief, and all statements and opinions are offered in good faith. Network Archaeology Ltd cannot accept responsibility for errors of fact or opinion resulting from data supplied by any third party, or for any loss or other consequences arising from decisions or actions made upon the basis of facts or opinions expressed in this report and any supplementary papers, howsoever such facts and opinions may have been derived, or as a result of unknown and undiscovered sites of artefacts.

Appendix A

GAZETTEER OF ARCHAEOLOGICAL SITES

Gazetteer of Archaeological Sites: Explanatory Notes

The gazetteer records the sites and findspots/scatters identified during the archaeological assessment. They are listed in alphanumeric order. Below is a brief explanation of abbreviations and conventions used in the gazetteer.

***'Reference'* and '*cross-reference*' column**

Abbreviations used in this column include:

DBA	Site identified during the Desk-Based Assessment by Network Archaeology Ltd (largely from aerial photographs, and old map sources)
LS*	Listed structures in both England and Wales
MON*	MONARCH data base (National Monuments Records from the RCHME)
SAM*	Scheduled Ancient Monument. Records held by English Heritage
WBSMR*	Warwickshire Sites and Monuments Record

* This convention was adopted for ease of reference during the assessment; it is not a term used by the respective data-holding bodies.

***'Source'* column**

AP.	Aerial photograph, followed by the year the photograph was taken
E.	Estate map, followed by the year the map was published
EH	English Heritage
I	Inclosure map, followed by the year the map was published
OS.	Ordnance Survey, followed by the year the map was published
T.	Tithe map, followed by the year the map was published
WCC	Warwickshire County Council

***'Description'* column**

Abbreviations used in this column include:

AP	Aerial photograph
CM	Crop Mark
PB	Parish Boundary
SM	Soil Mark
VM	Vegetation mark

'Period' column

Abbreviations used in this column include:

AS	Anglo-Saxon
BA	Bronze Age
E	Early
IA	Iron Age
Med	Medieval
Meso	Mesolithic
Mod	Modern
Neo	Neolithic
Pal	Palaeolithic

PM	Post medieval
Preh	Prehistoric
Rom	Roman

***'Grade'* column**

This records the category of importance (A-D) into which a site was placed.

***Impact'* column**

This records the impact of the pipeline on archaeological sites. Abbreviations used in this column include:

-	negative
+	positive
D	direct
I	indirect
Indet	Indeterminate
Maj	major
Min	minor
Sev	severe
Unc	uncertain

***'Significance of impact'* column**

Entries in this column include *Low, Medium, High or Unknown*
Abbreviations used in this column include Med for medium

***'Reliability of Source'* column:**

The sites have been allocated a reliability of source rating: L (Low), M (Medium) or H (High).
Column subheading - **L** (Location) represents the reliability of the given grid co-ordinates.
Column subheading - **I** (Interpretation) represents the reliability of site interpretation.

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
SAM WA 69	WCC	LS 3/173, WSMR 1565, MON 330864	Kinwarton dovecote	Medieval	A			410595 258455
SAM WA 155	EH		Settlement	Roman?	A			413967 252080
SAM 30030	EH	LB 305319, MON 328794	Settlement, moated manor, churchyard, 2 crosses and fishponds	Med/PM	A			408149 260507
SAM 30036	WCC	WSMR 2043, MON 1222667	DMV	Medieval	A			408895 260054
SAM 33138	WCC	LS 3/172, WSMR 1564, MON 330870	Cross	Medieval	A			410501 258370
SAM 35052	EH		Moated manor	Medieval	A			408497 258727
LS 1/157	SDC		Listed structure	Unknown	A			408048 260301
LS 1/166	WBC		Mill Ford House	Unknown	A			408865 260128
LS 13/108	SDC		Listed structure	Unknown	A			415539 248653
LS 13/109	SDC		Listed structure	Unknown	A			415609 248662
LS 13/110	EH	MON 330750	House	PM	A			415650 248670
LS 1912-01/13/96	WBC		Jasmine Cottage	Unknown	A			415392 248874
LS 1912-01/13/98	WBC		Little Thatch cottage	Unknown	A			415396 248891
LS 1931-1/3/103	WBC		Hillborough Manor House	Unknown	A			412620 252079
LS 1931-1/3/104	WBC	WSMR 1729	Hillborough dovecote	PM	A			412676 252031
LS 1931-1/3/76	WBC		Court Farmhouse and coach house	Unknown	A			412447 254352
LS 1931-1/3/77	WBC		Barn	Unknown	A			412441 254395
LS 1931-1/3/78	WBC		Dovecote	Unknown	A			412513 254475
LS 1931-1/3/80	WCC	WSMR 2464	Baptist chapel	PM	A			412743 254894
LS 1931-1/3/81	WBC		Barn	Unknown	A			412742 254869
LS 1931-1/3/84	WBC		Row of three cottages	Unknown	A			412748 254973
LS 1931-1/3/85	WBC		Hilltop Cottage	Unknown	A			412739 254928
LS 1931-1/3/86	WBC		Old Thatch cottage	Unknown	A			412707 254930
LS 1931-1/3/88	WBC		Top Farm Cottage	Unknown	A			412743 254854

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
LS 1931-1/3/89	WBC		Top Farmhouse	Unknown	A			412726 254857
LS 2/9	WBC		Kings Court Motel	Unknown	A			408265 259284
LS 2/98	WBC		Kings Coughton Mill House	Unknown	A			408525 259267
LS 3/171	WBC	WSMR 1566, MON 330884, MON 1116	Church of St Mary	Med/PM	A			410525 258369
LS 3/174	WBC		Glebe Farmhouse and cowhouse	Unknown	A			410489 258300
LS 3/175	WBC		Barn and animal housing	Unknown	A			410467 258305
LS 3/176	WBC		Barn	Unknown	A			410497 258323
LS 3/177	WBC		Cartshed	Unknown	A			410412 258251
LS 3/178	WBC	MON 330942	Shepherds Yard and vicarage	PM	A			410527 258330
LS 3/39	WBC		Listed structure	Unknown	A			413749 250123
LS 3/53	WBC		Listed structure	Unknown	A			412820 250574
LS 305328	WCC	WSMR 7799, MON 1312022	Almshouses	PM	A			408019 260279
LS 306977	EH	MON 522069	Timber framed inn	Med/PM	A			414000 254300
LS 7/82	WBC		Alne Cote cottage	Unknown	A			410829 259055
LS 7/84	WBC		Barley Leys Farmhouse	Unknown	A			413078 255691
LS 7/85	WBC		Barn	Unknown	A			413109 255652
LS 7/93	WBC	WSMR 1505	Watermill	Med/PM	A			410645 257881
LS 7/95	WBC		Rollswood Farmhouse	Unknown	A			412067 256292
LS 7/96	WBC		Stable and barn	Unknown	A			412084 256265
WSMR 391	WCC		Bronze sword chape	Medieval	D			411500 257700
WSMR 445	WCC		Ryknield Street	Roman	C			407588 262495
WSMR 446	WCC		Saltway from Droitwich	Roman	C	-D min		412379 256504
WSMR 1503	WCC		Toll house	PM	C			412150 256580
WSMR 1518	WCC	MON 330887, MON 630483, MON 630	Possible temple	Roman	C			411437 256519
WSMR 1528	WCC		Boundary marker	Med/PM	D			413194 255413
WSMR 1548	WCC		Railway bridge	PM	D			409885 258630
WSMR 1549	WCC		Railway bridge	PM	D			410513 258760
WSMR 1551	WCC		Pumping station	PM	D			410500 258600

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
WSMR 1562	WCC	MON 330873	Possible cemetery	Saxon	C			410521 258379
WSMR 1563	WCC		Swords	Rom/AS?	D			410600 258300
WSMR 1567	WCC	MON 330867	Kinwarton manor house	PM	C			410581 258521
WSMR 1724	WCC		Moat	Medieval	C			412594 254270
WSMR 1725	WCC		Preceptory	Medieval	C			412481 254264
WSMR 1728	WCC	MON 331098	Hillborough DMV	Medieval	B			412705 251902
WSMR 1733	WCC		Chapel of St Mary Magdalene	Medieval	C			412734 251878
WSMR 1813	WCC	MON 331056	Braggington moat	Medieval	C			413688 250163
WSMR 1814	WCC	MON 331053	Dorsington Parva DMV	Medieval	C			412821 250680
WSMR 1822	WCC	MON 330756	?Willicote DMV	Medieval	C			418262 248703
WSMR 2046	WCC		CM: Enclosures and linear features	Unknown	D			408869 258923
WSMR 2047	WCC		CM: Linear features	Unknown	D			408759 259429
WSMR 2754	WCC		Pottery sherd	Roman	D	unc		413300 253200
WSMR 3774	WCC		Kinwarton DMV	Medieval	B	unc		410532 258513
WSMR 3775	WCC		Boundary bank	Medieval	D	unc		408236 259721
WSMR 3909	WCC		Possible settlement earthworks	Medieval	C			412762 255227
WSMR 4517	WCC		Horse pendants	Medieval	D	-D sev		410800 258600
WSMR 4646	WCC		Settlement	Roman	B	-D min		408580 259767
WSMR 4670	WCC		CM: enclosure	Unknown	D			410809 258203
WSMR 4708	EH	WSMR 4986, MON 331112	CM: settlement; villa, lead coffin	IA/Rom	B			412200 251300
WSMR 4757	WCC		Road from Alcester to Stratford	Roman	C	-D min		413748 256213
WSMR 4786	WCC		Turnpike road from Stratford to Bradley Brook via Alcester	PM	D	-D min		412379 256504
WSMR 4807	WCC		Turnpike road from Alcester to Lickey and Bromsgrove	PM	D			407990 260542
WSMR 4829	WCC		Turnpike road from Stratford to Andersford	PM	D	-D min		417759 248766
WSMR 4918	WCC		CM: linear feature	Unknown	D			412620 254416

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
WSMR 4919	WCC		Linear features & possible enclosure	Medieval	D			412729 255153
WSMR 4997	WCC	MON 331104	Possible manor house	Medieval	C			412627 252086
WSMR 5021	WCC		King's Coughton mill	PM	C			408600 259300
WSMR 5211	WCC	MON 330899	Barlichway Hundred meeting place	Medieval	D			413193 255413
WSMR 5212	WCC	MON 330867	Moat	Medieval	C			410582 258517
WSMR 5213	WCC		Fishponds	Med/PM	D			410498 258471
WSMR 5214	WCC	WSMR 4416	Pottery sherds	Roman	D			410500 258300
WSMR 5228	WCC		Deserted settlement	PM	C	-D min		408720 259760
WSMR 5229	WCC		Watermill	PM	D			408827 260051
WSMR 5230	WCC		Watermill	PM	D			408878 260091
WSMR 5426	WCC	MON 331047	Possible manor house	PM	C			412479 254264
WSMR 5488	WCC		Shrunken settlement	PM	B			410482 258251
WSMR 6330	WCC		Pottery	Saxon	D			410600 258300
WSMR 6450	WCC		Shrunken village earthworks	Medieval	B			415348 248371
WSMR 6459	WCC		Possible settlement	Medieval	C			415351 248368
WSMR 6478	WCC		CM: ?Enclosure	Unknown	D			407877 260116
WSMR 6619	WCC		Coin	Roman	D			408500 259500
WSMR 6745	WCC		CM: Linear features	Unknown	D			408998 259217
WSMR 6963	WCC		CM: Irregular features	Unknown	D			411352 258161
WSMR 7191	WCC	MON 1056938, MON 1118521	Ridge and furrow	Medieval	D			408280 259295
WSMR 7216	WCC		Negative watching brief	None	N			412626 250723
WSMR 7273	WCC	MON 1318010	Flint flakes	Prehistoric	D	-D sev		412350 256410
WSMR 7278	WCC		Stone milestone	PM	D			411262 256870
WSMR 8029	WCC		RAF Long Marston airfield	Modern	C	-D min		417183 248098
WSMR 8217	WCC		Sealt Stret saltway	Medieval	D	-D min		416549 254754
WSMR 8559	WCC		Grafton Court park	PM	C	-D min		413063 253645
WSMR 8674	WCC		Ryknield Street	Medieval	C			409208 254355
WSMR 8675	WCC		Barley Leys	Medieval	D			413125 255827

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
WSMR 8686	WCC		Turnpike road from Alcester to Wootton Wawen	PM	D	-D min		410577 258825
WSMR 8699	WCC		Kinwarton House park	PM	C			410012 258293
WSMR 8700	WCC		Glebe Farm park	PM	C	-D min		410803 258551
WSMR 8713	WCC		Pits and gullies	Unknown	D			415427 248448
WSMR 9036	WCC		Settlement	Medieval	C			412400 254888
WSMR 9130	WCC		Settlement	Medieval	C			408283 260441
WSMR 9139	WCC	MON 1338465	Settlement	Roman	C			415975 247959
MON 1355559	EH		Negative watching brief	None	N			415400 248700
MON 330723	EH		House	Med/PM	C			415190 247960
MON 330729	EH		Church	Medieval	B			415280 248110
MON 330751	EH		Railway	PM	C			415600 248200
MON 330757	EH		Water channel	Modern	D			413470 249770
MON 330760	EH		Moat	Med/PM	C			413300 249700
MON 330890	EH		Whetstone, quern, flint axe	Preh/Neo	D			411180 256560
MON 330896	EH		Manor house	PM	C			412250 257580
MON 330905	EH		Stocks	Med/PM	D			412140 257620
MON 330915	EH		Pottery, coin	Roman	D			411480 259150
MON 330945	EH		Parish boundary, track	Medieval	D			411010 257255
MON 330947	EH		Brooch	EMed	D			410100 258000
MON 331044	EH		Inhumation	Emed	C			413900 254500
MON 331050	EH		Coin	Roman	D			414000 254000
MON 331059	EH		Cross	Med/PM	D			412380 254860
MON 331068	EH		Church	Med/PM	B			412360 254860
MON 331074	EH		Chapel, hospitallers church	Med/PM	B			412300 254800
MON 331101	EH		Gibbet	Med/PM	D			412510 253110
MON 871067	EH		Church	PM	B			413250 249710
MON 1211504	EH		Lithic scatter	Mesolithic	D			413100 256350
DBA:AA	T. ?1840	OS. 1886	Coughton and Alcester parish boundary	PM?	D			408615 259433
DBA:AB	T. ?1840		House, small buildings and plots	PM?	D			408108 260284

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
DBA:AC	T. ?1840		Field name: Mill Piece	PM?	D			408142 259983
DBA:AD	T. ?1840		Field name: Mill Ground	PM?	D			407951 259706
DBA:AE	T. ?1840		Field name: Chalterways Farm	PM?	D			407604 259760
DBA:AF	E. ?1800		Great Alne and Kinwarton parish boundary	PM?	D			410717 259058
DBA:AG	T. ?1841	OS. 1886	Great Alne & Haselor parish boundary	PM?	D			412111 258985
DBA:AH	T. ?1841	OS. 1886	Great Alne and ?Coughton parish boundary	PM?	D			410485 259720
DBA:AI	T. ?1841		House and small plot	PM?	D			410880 259038
DBA:AJ	T. ?1841		House and small plot	PM?	D			410818 259046
DBA:AK	T. ?1841		Farm	PM?	D			410398 259269
DBA:AL	AP. 67		CM: Rectilinear enclosure	Unknown	D			413403 251730
DBA:AM	AP. 29		CM: Small plot with ditch	Unknown	D			412198 256435
DBA:AN	T. 1840		Stream	PM?	D			412682 250878
DBA:AO	T. ?1841		Gardens	PM?	D			410652 259169
DBA:AP	T. ?1841		Field name: 'Barn Close'	PM?	D			410398 259360
DBA:AQ	T. 1840		Field name: 'Homeage'	PM?	D			412682 250366
DBA:AR	WBC		Great Alne conservation area	Unknown	A			411770 259409
DBA:AS	WBC		Temple Grafton conservation area	Unknown	A			412478 254864
DBA:AT	OS. 1886		Barnt Green and Ashchurch branch railway	PM	D			407100 260928
DBA:AU	OS. 1886		Path	PM	D			408525 259606
DBA:AV	OS. 1886		Paths	PM	D	-D min		408867 259775
DBA:AW	OS. 1886		Track	PM	D	-D min		409190 259618
DBA:AX	OS. 1886		Oxbow lake	PM	D			408755 259605
DBA:AY	OS. 1886		Mill	PM	D			408600 259213
DBA:AZ	OS. 1886		Mill stream	PM	D			408624 259290
DBA:BA	OS. 1886		Alcester and Bearley Branch railway	PM	D	-D min		411022 258849
DBA:BB	OS. 1886		Path	PM	D	-D min		410721 258640

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
DBA:BC	OS. 1886		Pond	PM	D			410465 258544
DBA:BD	OS. 1886		Pond	PM	D			410465 258344
DBA:BE	OS. 1886		Drain	PM	D			410085 259571
DBA:BF	E. 1756		Pond	PM?	D			410478 259292
DBA:BG	OS. 1886		Cottage	PM	D			410351 258371
DBA:BH	OS. 1886		Small building	PM	D			410923 258996
DBA:BI	OS. 1886		Orchard	PM	D			411039 258118
DBA:BJ	OS. 1886		Two farm buildings	PM	D			411246 258041
DBA:BK	E. 1756		Road	PM?	D			410423 258977
DBA:BL	E. 1756		Road	PM?	D			410897 258808
DBA:BM	E. 1756		Road	PM?	D			409904 258651
DBA:BN	E. 1756		Numerous small plots	PM?	D	-D min		410523 258865
DBA:BO	E. 1756	AP. 46	Numerous small plots, ridge and furrow	Med/PM?	D	-D min		410139 259041
DBA:BP	E. 1756		Track	PM?	D			410150 258772
DBA:BQ	E. 1756		Pond	PM?	D			410419 258952
DBA:BR	E. 1756		Pond	PM?	D			409937 259120
DBA:BS	E. 1756		Numerous small plots	PM?	D	-D min		410661 258735
DBA:BT	E. 1756		Pond	PM?	D			410678 259341
DBA:BU	E. 1756		Small plots and buildings	PM?	D			410426 258458
DBA:BV	E. 1756		Small plots and buildings	PM?	D			410514 258316
DBA:BW	E. 1756		Possible parterres	PM?	D			410661 258470
DBA:BX	E. 1800	OS. 1886	Kinwarton & Coughton parish boundary	PM?	D	-D min		409813 259230
DBA:BY	E. ?1800		Kinwarton and Haselor parish boundary	PM?	D	-D min		410687 258292
DBA:BZ	I. 1815		Dove House Farm	PM?	D			412573 255047
DBA:CA	I. 1815		House	PM?	D			412785 255005
DBA:CB	I. 1815		House	PM?	D			412757 254999
DBA:CC	I. 1815		Moat	PM?	C			412536 254395
DBA:CD	OS. 1886		Barn	PM	D			411617 257285
DBA:CE	OS. 1886		Orchard	PM	D			412183 257296

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
DBA:CF	OS. 1886		Barn	PM	D			411492 256984
DBA:CG	OS. 1886		Pond	PM	D			412535 256899
DBA:CH	OS. 1886		Survey post	PM	D	unc		412313 256116
DBA:CI	OS. 1886		Farm	PM	D			412339 256015
DBA:CJ	OS. 1886		Track	PM	D			412070 256087
DBA:CK	OS. 1886		Track	PM	D			412262 256003
DBA:CL	OS. 1886		Track	PM	D			412919 256279
DBA:CM	OS. 1886		Pond	PM	D			411814 256330
DBA:CN	OS. 1886		Small farm building	PM	D			412277 256368
DBA:CO	OS. 1886		Small depression in field, possible pond	PM	D			412502 256060
DBA:CP	OS. 1886		Track	PM	D			412173 255784
DBA:CQ	OS. 1886		Track	PM	D			412098 255686
DBA:CR	OS. 1886		Survey post	PM	D			412105 255600
DBA:CS	OS. 1886		Survey post	PM	D			412884 255762
DBA:CT	OS. 1886		Track	PM	D			412941 255709
DBA:CU	OS. 1886		Small farm building	PM	D			412891 255815
DBA:CV	OS. 1886		Track	PM	D			413403 255313
DBA:CW	OS. 1886		Path	PM	D			412742 254791
DBA:CX	OS. 1886		Track	PM	D	-D min		412974 254792
DBA:CY	OS. 1886		Path	PM	D	-D min		413339 254709
DBA:CZ	OS. 1886		Depression in field near 'The Gravels', possible quarry	PM	D			413508 254565
DBA:DA	OS. 1886		Track	PM	D			413598 254484
DBA:DB	OS. 1886		Orchard	PM	D			413692 254289
DBA:DC	OS. 1886		Tracks	PM	D			413527 254318
DBA:DD	OS. 1887		Track	PM	D			413393 253269
DBA:DE	OS. 1887		Orchard	PM	D			412830 251972
DBA:DF	OS. 1887		Orchard	PM	D			413553 251340
DBA:DG	OS. 1887		Survey post	PM	D	-D sev		412981 251094
DBA:DH	OS. 1897		East and West Junction railway	PM	D	-D min		413340 252992

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
DBA:DI	OS. 1884		Tracks	PM	D			413126 250458
DBA:DJ	OS. 1884		Orchard	PM	D			413211 250547
DBA:DK	OS. 1884		Orchard	PM	D			413031 250527
DBA:DL	OS. 1884		Path	PM	D			413870 250110
DBA:DM	OS. 1884		Great Western railway	PM	D	-D min		416574 250473
DBA:DN	OS. 1884		Path	PM	D			416225 249534
DBA:DO	OS. 1884		Path	PM	D			415683 248356
DBA:DP	OS. 1884		Paths	PM	D	-D min		416304 248323
DBA:DQ	OS. 1884		Path	PM	D			415626 248931
DBA:DR	OS. 1884		Small building	PM	D			415732 248842
DBA:DS	OS. 1884		Road	PM	D			416554 248534
DBA:DT	OS. 1884		Barn	PM	D			416437 248607
DBA:DU	OS. 1884		Track	PM	D			416638 248746
DBA:DV	OS. 1884		Track	PM	D			416401 248651
DBA:DW	OS. 1884		Track	PM	D			417263 247795
DBA:DX	OS. 1884		Path	PM	D			417830 247554
DBA:DY	OS. 1884		Ponds	PM	D			417696 248470
DBA:DZ	OS. 1884		Pond	PM	D			418044 248516
DBA:EA	OS. 1906		Pond	PM	D	unc		409767 259238
DBA:EB	OS. 1906		Track	PM	D			410140 259629
DBA:EC	OS. 1906		Track	PM	D			410873 258800
DBA:ED	OS. 1924		Track	PM	D			411738 256901
DBA:EE	OS. 1924		Track	PM	D			413528 253293
DBA:EF	OS. 1924		Track	PM	D	unc		412884 252234
DBA:EG	OS. 1924		Track	PM	D			414516 249455
DBA:EH	OS. 1924		Track	PM	D			415309 249844
DBA:EI	OS. 1924		Track	PM	D			415269 248753
DBA:EJ	OS. 1924		Track	PM	D	-D min		415603 249019
DBA:EK	AP. 3		EW: Ridge and furrow	Medieval	D			418470 248263
DBA:EL	AP. 3		EW: Ridge and furrow	Medieval	D	-D min		417677 248036
DBA:EM	AP. 13	AP. 4	EW: Ridge and furrow	Medieval	D	-D min		416896 247924
DBA:EN	AP. 13	Long 1998	EW: Ridge and furrow	Medieval	D	-D min		416052 248421

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
DBA:EO	AP. 18		VM: Possible barn	Unknown	D			416060 248495
DBA:EP	AP. 20		Building, possibly associated with airfield	Modern	D			416137 248130
DBA:EQ	AP. 13	Long 1998	EW: Ridge and furrow and boundary ditches	Medieval	D			415551 248322
DBA:ER	AP. 13	AP. 4	EW & SM: Ridge and furrow	Medieval	D	-D min		416923 249060
DBA:ES	AP. 13		EW: Ridge and furrow	Medieval	D	-D min		415911 248692
DBA:ET	AP. 4	AP. 13	EW: Ridge and furrow	Medieval	D	-D min		415814 249197
DBA:EU	WSMR		Ridge and furrow	Medieval	D			412493 251961
DBA:EV	WSMR		Ridge and furrow	Medieval	D			412069 255555
DBA:EW	AP. 5		Plots	Unknown	D	-D min		415563 249253
DBA:EX	AP. 8	AP. 9	EW & SM: Ridge and furrow	Medieval	D	-D min		414439 250024
DBA:EY	AP. 36		Track	Unknown	D	-D min		413328 250972
DBA:EZ	AP. 34		EW: Ridge and furrow	Medieval	D	-D min		412965 250904
DBA:FA	WSMR		Ridge and furrow	Medieval	D			413581 250118
DBA:FB	WSMR		Ridge and furrow	Medieval	D			413436 250014
DBA:FC	AP. 38		Farm buildings	PM	D	unc		413147 251298
DBA:FD	AP. 34		EW: Ridge and furrow	Medieval	D			413410 251329
DBA:FE	AP. 21	AP. 55	EW & SM: Ridge and furrow	Medieval	D	-D min		413005 252359
DBA:FF	WSMR		Ridge and furrow	Medieval	D			413645 254062
DBA:FG	AP. 54		EW: Ridge and furrow	Medieval	D			412843 253084
DBA:FH	AP. 54		EW: Ridge and furrow	Medieval	D	-D min		413186 253323
DBA:FI	OS. 1886		Oversley and Haselor parish boundary	Unknown	D			411141 257038
DBA:FJ	AP. 52		EW: Ridge and furrow	Medieval	D			413338 253441
DBA:FK	AP. 39	AP. 40	EW & SM: Ridge and furrow	Medieval	D	-D min		412690 254271
DBA:FL	AP. 39	AP. 40	EW & SM: Ridge and furrow	Medieval	D	-D min		413153 254805
DBA:FM	AP. 39		EW: Ridge and furrow	Medieval	D			413632 254706
DBA:FN	AP. 40		SM: Ridge and furrow	Medieval	D	unc		413259 254382
DBA:FO	EH		Ditch	Unknown	D			409062 259018
DBA:FP	AP. 39	AP. 40, AP. 57	EW & SM: Ridge and furrow	Medieval	D	-D min		412775 255540
DBA:FQ	AP. 27		Farm building	Unknown	D			412247 255964

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
DBA:FR	AP. 25	WCC 1994ii	EW: Ridge and furrow	Medieval	D			411996 255929
DBA:FS	AP. 26		Several small plots	Unknown	D			412059 255811
DBA:FT	AP. 27		Farm building	Unknown	D			412125 255912
DBA:FU	AP. 25	A46 ES	EW: Ridge and furrow	Medieval	D			411924 256303
DBA:FV	AP. 25	A46 ES	EW: Ridge and furrow	Medieval	D			412068 256468
DBA:FW	WCC 1994ii		Ridge and furrow	Medieval	D			413038 255888
DBA:FX	AP. 25	A46 ES	EW: Ridge and furrow	Medieval	D	-D min		412350 256325
DBA:FY	AP. 25	AP. 51, WCC 1994ii	EW: Ridge and furrow	Medieval	D	-D min		412371 256676
DBA:FZ	AP. 32	AP. 33, AP. 51, WCC 1994ii	EW & SM: Ridge and furrow	Medieval	D	-D min		411782 257035
DBA:GA	WSMR		Ridge and furrow	Medieval	D	-D min		413016 251508
DBA:GB	WSMR		Ridge and furrow	Medieval	D			413642 255680
DBA:GC	OS. 1886		Haselor and Binton parish boundary	Unknown	D			413558 256106
DBA:GD	OS. 1886		Binton and Temple Grafton parish boundary	Unknown	D			413639 254845
DBA:GE	AP. 32		EW: Ridge and furrow	Medieval	D			411651 257624
DBA:GF	AP. 32		EW: Ridge and furrow	Medieval	D			411888 257780
DBA:GG	AP. 32		EW: Ridge and furrow	Medieval	D			411624 258179
DBA:GH	AP. 33		SM: Ridge and furrow	Medieval	D	-D min		410903 258343
DBA:GI	AP. 58	AP. 59	EW & SM: Ridge and furrow	Medieval	D	-D min		410641 259107
DBA:GJ	AP. 46		SM: Ridge and furrow	Medieval	D			410343 259498
DBA:GK	AP. 49		EW: Ridge and furrow	Medieval	D	-D min		409797 259263
DBA:GL	AP. 46		SM: Ridge and furrow	Medieval	D			409563 259692
DBA:GM	AP. 43		EW & SM: Ridge and furrow	Medieval	D	-D min		409057 259510
DBA:GN	AP. 43	AP. 44	EW & SM: Ridge and furrow	Medieval	D	-D min		408390 259979
DBA:GO	AP. 68	AP. 69, AP. 70	CM: Rectilinear enclosures	Unknown	D			411900 257396
DBA:GP	WCC 1994ii		Ridge and furrow	Medieval	D			411877 256491
DBA:GQ	WCC 1994ii		Ridge and furrow	Medieval	D			413226 255952

Reference	Source	Cross references	Description	Period	Importance	Impact	Significance of impact	National grid reference
DBA:GR	OS. 1886		Warwickshire and Gloucestershire county boundary	Unknown	D	-D min		413951 251470
DBA:GS	OS. 1886		Warwickshire and Gloucestershire county boundary	Unknown	D			412897 250713
DBA:GT	OS. 1886		Bidford and ?Bickford parish boundary	Unknown	D			412319 250391
DBA:GU	OS. 1884		Dorsington and Welford parish boundary	Unknown	D	-D min		414309 250101
DBA:GV	OS. 1884		Dorsington and Long Marston parish boundary	Unknown	D			414627 248924
DBA:GW	OS. 1884		Welford and Long Marston parish boundary	Unknown	D	-D min		415629 249213
DBA:GX	OS. 1884		Long Marston & Quinton parish boundary	Unknown	D	-D min		417075 248102
DBA:GY	OS. 1886		Temple Grafton and Haselor parish boundary	Unknown	D	-D min		412693 255428

Appendix B

LEGAL DESIGNATIONS

LEGAL DESIGNATIONS

Scheduled Monuments

Monuments of national importance and areas of archaeological importance (AAIs) are protected under the *Ancient Monuments and Archaeological Areas Act* of 1979 (as amended by the National Heritage Act of 1983). The scheduling of monuments and designation of AAIs is the responsibility of the Secretary of State, in consultation with English Heritage, Historic Scotland and CADW, as is the compilation of the Schedule of Monuments. In effect, only portable items are beyond the protection of scheduling.

In practice most Scheduled Monuments fall into the category of Scheduled Ancient Monuments (SAMs), defined as 'any Scheduled Monument and any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attatching to it' (Section 61 [12]).

Any action which affects the physical nature of a monument requires Scheduled Monument Consent, which must be sought from the Secretary of State. Failure to obtain Scheduled Monument Consent for any works is an offence, the penalty for which may be a fine, which may be unlimited.

Listed Buildings

Buildings (and other structures) of special architectural or historic interest are protected under the *Planning (Listed Buildings and Conservation Areas) Act* of 1990. The listing of buildings is the responsibility of the Secretary of State, in consultation with English Heritage, as is the compilation of the List of Buildings of Special Architectural or Historic Interest.

Buildings are classified in grades to show their relative importance as follows:

- Grade I: Buildings of exceptional interest
- Grade II*: Particularly important buildings of more than special interest
- Grade II: Buildings of special interest, which warrant every effort being made to preserve them

The grading of listed buildings is non-statuatory; the awarding of grades is simply a tool to assist in the administration of grants and consents.

Any work that involves the demolition, alteration or extension of a listed building (or its curtillage) requires listed building consent, which must be sought from the Secretary of State, usually via the local authority. Carrying out work on a listed building (or its curtillage) without consent is an offence and can be punishable by an unlimited fine.

Registered Parks and Gardens

Parks and gardens of special historic interest have no statuatory protection. The *Register of Parks and Gardens of Special Historic Interest in England* was initially assembled by English Heritage between 1984 and 1988 and is maintained by them.

Listed parks and gardens are classified in grades to show their relative importance as follows:

- Grade I –international historic interest
- Grade II* - exceptional historic interest
- Grade II –national historic interest

The listing and grading process is designed to draw attention to these parks and gardens and ensure that they are safeguarded in any plans for development.

It should be noted that structures such as fountains, gates, grottos and follies within gardens can be listed as 'Listed Buildings' and whole parks and gardens can also be scheduled as monuments.

Any work that affects the physical nature of registered parks and gardens requires consultation with the Garden History Society. English Heritage should be consulted in the case of those designated as Grade I or Grade II*.

The Register of Historic Battlefields

Registered battlefields have no statutory protection. Planning Policy Guidance note 15, however, offers a degree of protection to many of the known battle sites within England.

Forty sites are currently included within the *Register of Historic Battlefields*, which is maintained by English Heritage.

Important Hedgerows

Hedgerows which risk damage or removal are required, by the Hedgerow Regulations 1997 (Section 97 of the Environment Act 1995), to be assessed according to a number of historical and ecological criteria.

Under the regulations, a hedgerow is regarded as 'important' on archaeological or historical grounds if it:

- marks a pre-1850 parish or township boundary;
- incorporates an archaeological feature;
- is part of, or associated with, an archaeological site;
- marks the boundary of, or is associated with, a pre-1600 estate or manor, or
- forms an integral part of a pre-Parliamentary enclosure field system (DOE, 1997).

An archaeological site is defined as a Scheduled Ancient Monument (SAM) or a site recorded in a County Sites and Monuments Record (SMR).

The Hedgerow Act defines a pre-Parliamentary enclosure field system as any field boundary predating the *General Enclosure Act of 1845*.

Appendix C

EXPLANATION OF PHASED APPROACH TO ARCHAEOLOGICAL INVESTIGATION AND MITIGATION

EXPLANATION OF PHASED APPROACH TO ARCHAEOLOGICAL INVESTIGATION AND MITIGATION

Stage 1:
Feasibility Assessment

An appraisal of archaeological potential

Stage 2:
Desk-based Assessment

A thorough desk based synthesis of available information

Aerial photographic study:
Identification and mapping of palaeochannels from aerial photographs should be undertaken as part of the desk-based assessment.

Stage 3:
Field Surveys

Field reconnaissance survey

This is a visual inspection of the proposed pipeline route, in order to:

- locate and characterise archaeology represented by above ground remains (e.g. earthworks and structures); and
- record the nature and condition of existing field boundaries crossed by the route, to establish their potential antiquity.

A walkover of the entire pipeline route should normally take place.

Fieldwalking survey

The distribution of finds found by fieldwalking can indicate areas of archaeological activity, which are not represented by above ground remains.

A programme of structured fieldwalking should normally take place across all available arable land to recover archaeological artefacts. A minimum of five transects at 10m separation based upon the centreline of the proposed pipeline should normally be walked.

Geophysical survey

Geophysical survey methods are non-intrusive and can detect and precisely locate buried archaeological features.

Magnetometry is the most cost-effective technique for large scale surveys. *Recorded* magnetometer survey, supplemented by background magnetic susceptibility survey is normally recommended. The surveys should sample the entire length and a proportion of the width of the working width of the proposed pipeline route, except in wetland areas, such as marshland, tidal areas and floodplains.

Only a *recorded* magnetometer survey can provide direct and objective evidence of the presence and character of individual archaeological features.

Unrecorded magnetometer scanning is not recommended because it requires spontaneous, subjective interpretation as the unrecorded scanning survey progresses. This method does not therefore provide a secure basis for eliminating areas that produce negative results from further consideration.

Electro-magnetic survey

This technique could produce a three-dimensional geomorphological sub-surface map of wetland areas. Survey should take place along a minimum of five transects, and measurements should be calibrated by absolute readings collected by borehole and/or hand auger survey.

Auger survey

Geotechnical borehole survey supplemented by hand auger survey could:

- generate stratigraphic profiles and establish the depth of alluvium;
- look for 'islands' of solid geology which are elevated in comparison with their contemporary landscape;
- look for former river channels;
- look for evidence of buried land surfaces;
- calibrate an EM survey; and
- assess the viability of using targeted magnetometer survey on the floodplain.

Ideally, an environmental archaeologist would consult with the geotechnical team in order to develop a strategy which would enable the opportunistic and immediate examination of the geotechnical team's soil cores, in conjunction with a *hand auger survey* tailored to meet archaeological objectives listed above. The location and frequency of the hand augers should be determined by the results of the EM survey, but generally should be taken at regular intervals, no greater than 50m separation, along the centreline of the proposed route.

Radiocarbon dating and palaeo-environmental assessment

Soil samples recovered may require radiocarbon dating and assessment of potential for preservation of palaeo-environmental important remains.

Stage 4
Evaluation

Field evaluation should normally take place at the sites of positive findings made during earlier stages of archaeological assessment and field survey, which it may not be possible or desirable to avoid. Evaluation might involve machine-excavated trenches, hand-dug test-pits and/or hand auguring. The objectives are to confirm the presence or absence of archaeological remains, to determine their character, extent, date and state of preservation, and to produce a report on the findings. The choice of technique(s) will depend upon site-specific factors.

Stage 5
Excavation

It may not be possible or desirable to avoid significant archaeological sites identified by previous survey work and/or evaluation. Ideally, *excavation* of such sites should take place in advance of construction. Excavation would involve machine-stripping of limited, open areas, followed by archaeological investigation. The objectives would be to obtain a full record of the archaeological remains prior to construction, and to produce a report on the findings.

Stage 6
Watching Brief

A permanent-presence watching brief will be required during all ground disturbing activities of the construction phase of the project, to record unexpected discoveries, and known sites which did not merit investigation in advance of construction. The main phases of monitoring for the pipeline will be topsoil stripping, trench excavation and the opportunistic observation of the pre-construction drainage. The objectives are to obtain a thorough record of any archaeological remains found during construction, and to produce a report on the findings. Contingencies should allow for salvage excavation of significant, unexpected archaeological sites found during construction.

Stage 7
Archive, Report and Publication

A post-excavation programme for dealing with all records of investigated archaeological remains and recovered artefacts usually follows each of the stages outlined above. This includes the collation and cataloguing of all site records, the processing, conservation and cataloguing of artefacts, the production of an archive report, and, where appropriate, the drafting of articles for publication.

Appendix D

OUTSTANDING DESK BASED WORK

Ordnance Survey of England				
Year	**County series**	**Edition**	**Sheet**	**Scale**
1906	Warks.	2nd	37 NW	6” to 1 mile
1906	Warks.	2nd	43 NE	6” to 1 mile
1906	Warks.	2nd	43 SE	6” to 1 mile
1906	Warks.	2nd	49 NE	6” to 1 mile
1906	Warks.	2nd	50 NW	6” to 1 mile
1924	Warks.		43	1:10,560
1924	Warks.		49	1:10,560
1924	Warks.		50	1:10,560
1966	Warks.		SP1251	
1966	Warks.		SP1353	
1966	Warks.		SP1253	
1966	Warks.		SP1352	
1966	Warks.		SP1252	
1966	Warks.		SP1351	
1968	Warks.		SP1250	
1968	Warks.		SP1350	
1968	Warks.		SP1450	
1969	Warks.		SP1059	
1969	Warks.		SP1159	
1969	Warks.		SP1156	
1969	Warks.		SP1256	
1969	Warks.		SP1257	
1969	Warks.		SP1354	
1969	Warks.		SP1254	
1969	Warks.		SP1255	
1969	Warks.		SP1058	
1969	Warks.		SP1155	
1969	Warks.		SP1355	
1969	Warks.		SP1648	
1969	Warks.		SP1748	
1969	Warks.		SP1157	
1969	Warks.		SP1158	
1970	Warks.		SP1647	
1970	Warks.		SP1848	
1970	Warks.		SP1747	
1970	Warks.		SP1548	
1970	Warks.		SP1549	
1970	Warks.		SP1449	
1972	Warks.		SP0959	
1972	Warks.		SP0859	
1972	Warks.		SP0860	
1972	Warks.		SP0759	
1973	Warks.		SP0760	
	Warks.		37.5	25” to 1 mile
	Warks.		37.9	25” to 1 mile
	Warks.		37.1	25” to 1 mile

	Warks.		37.14	25” to 1 mile
	Warks.		37.15	25” to 1 mile
	Warks.		43.7	25” to 1 mile
	Warks.		43.3	25” to 1 mile
	Warks.		43.11	25” to 1 mile
	Warks.		43.15	25” to 1 mile
	Warks.		49.8	25” to 1 mile
	Warks.		49.4	25” to 1 mile
	Warks.		49.3	25” to 1 mile
	Warks.		50.5	25” to 1 mile

Earl of Warwick Estate Maps, Kinwarton Parish	1760 & 1752	WCRO Ref: CR1886/ M311 and M1
Earl Brook Estate, Kinwarton and Alcester	1754	WCRO Ref: Z120U
Magdalen College Estate Old Inclosures in Quinton Parish	1808	WCRO Ref: DR328/26
Magdalen College Map of Estates in Quinton Parish	1868	WRO Ref: Z128/2 U
Hayes Estate Map in Long Marston Parishm	1776	WCRO Ref: Z 197L
Lordship of Welford	1770	WCRO Ref: CR2591
Richard Hemming's Estate Map, Haselor Parish	1819	WCRO Ref: CR1446
Haynes Estate Map, Haselor Parish	1823	WCRO Ref: CR1128/436
Holyoake Estate, Great Alne Parish	1820 – 1821	WCRO Ref: CR1094
Map of Coughton	1695	WCRO Ref: Z328U
Throckmorton Estate, Coughton	1746	WCRO Ref: CR1998/M29
Throckmorton Estate, Coughton	1838/9	WCRO Ref:CR1998/M23 and 24
Throckmorton Estate, Coughton	1880	WCRO Ref: CR1998/18

Appendix E

IMPORTANT HEDGEROWS

Important Hedgerows

Hedge	Reasons	Cross references
H2	Is part of, or associated with, an archaeological site	WSMR 5228
H8	Marks a pre-1850 parish or township boundary	E. 1756
H9	Forms an integral part of a pre-Parliamentary enclosure field system	E. 1756
H10	Forms an integral part of a pre-Parliamentary enclosure field system	E. 1756
H11	Forms an integral part of a pre-Parliamentary enclosure field system	E. 1756
H12	Is part of, or associated with, an archaeological site	WSMR 8686
H13	Is part of, or associated with, an archaeological site Forms an integral part of a pre-Parliamentary enclosure field system	WSMR 8686, E. 1756
H23	Forms an integral part of a pre-Parliamentary enclosure field system	WCC 1994ii
H24	Forms an integral part of a pre-Parliamentary enclosure field system	WCC 1994ii
H27	Forms an integral part of a pre-Parliamentary enclosure field system	WCC 1994ii
H28	Is part of, or associated with, an archaeological site	WSMR 4757
H29	Is part of, or associated with, an archaeological site	WSMR 4757
H37	Forms an integral part of a pre-Parliamentary enclosure field system	R&F Maps
H40	Is part of, or associated with, an archaeological site	WSMR 8559
H41	Is part of, or associated with, an archaeological site	WSMR 8217, WSMR 8559
H42	Is part of, or associated with, an archaeological site	WSMR 8217
H48	Forms an integral part of a pre-Parliamentary enclosure field system	T. 1840
H49	Forms an integral part of a pre-Parliamentary enclosure field system	T. 1840
H50	Forms an integral part of a pre-Parliamentary enclosure field system	AP. 34
H51	Forms an integral part of a pre-Parliamentary enclosure field system	R&F Maps
H54	Forms an integral part of a pre-Parliamentary enclosure field system	R&F Maps
H58	Forms an integral part of a pre-Parliamentary enclosure field system	R&F Maps
H66	Is part of, or associated with, an archaeological site	WSMR 4829
H67	Is part of, or associated with, an archaeological site	WSMR 4829
H68	Forms an integral part of a pre-Parliamentary enclosure field system	AP. 3
H69	Forms an integral part of a pre-Parliamentary enclosure field system	AP. 3

Appendix F

FIGURES 1 - 19

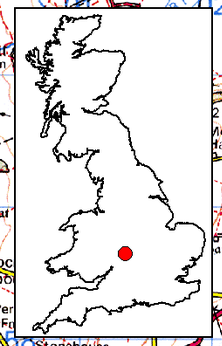

Figure 1: Location of pipeline route and Figures 2-9 (1:50 000)

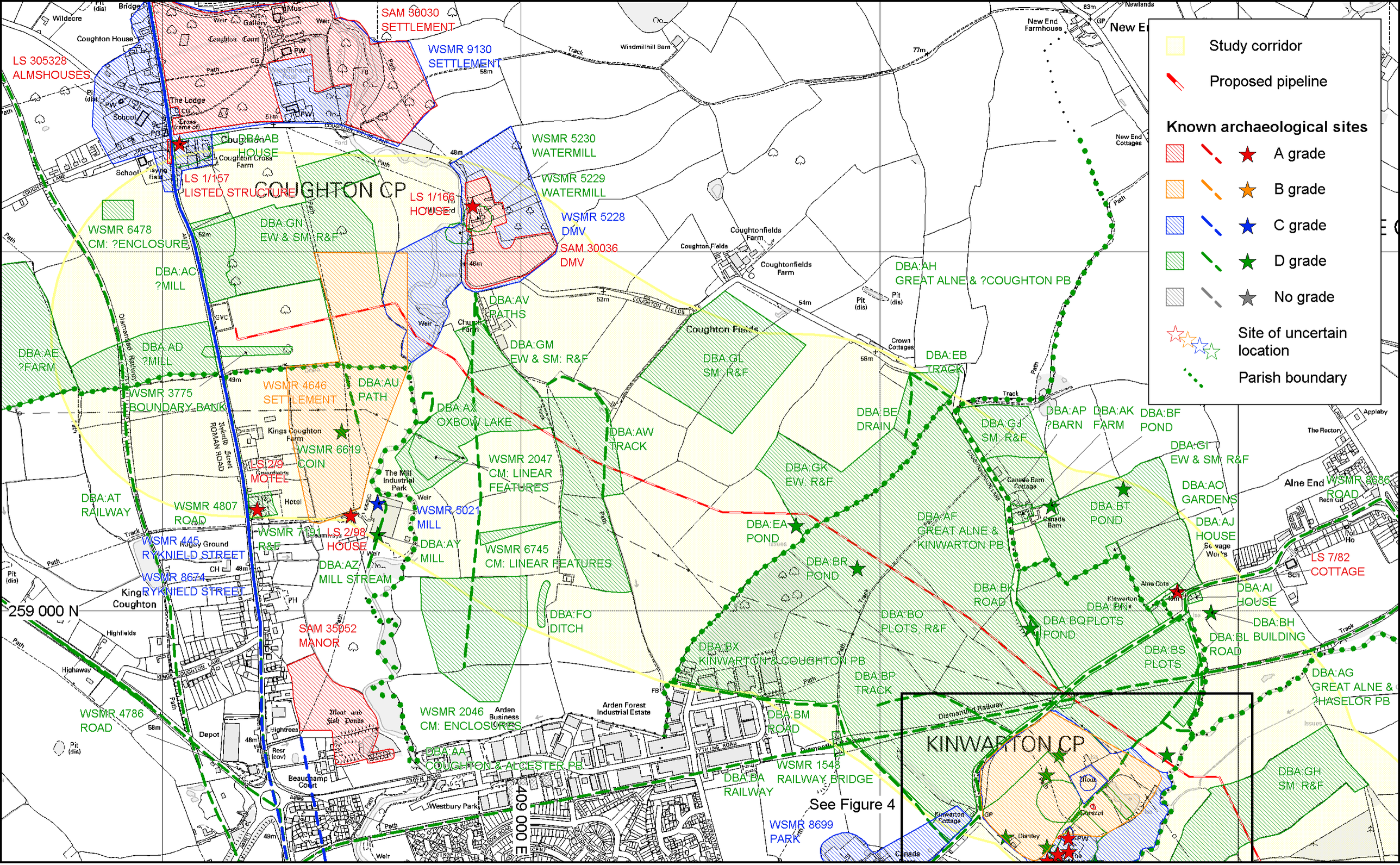

Figure 2: Archaeological constraints (1:10 000)

network archaeology

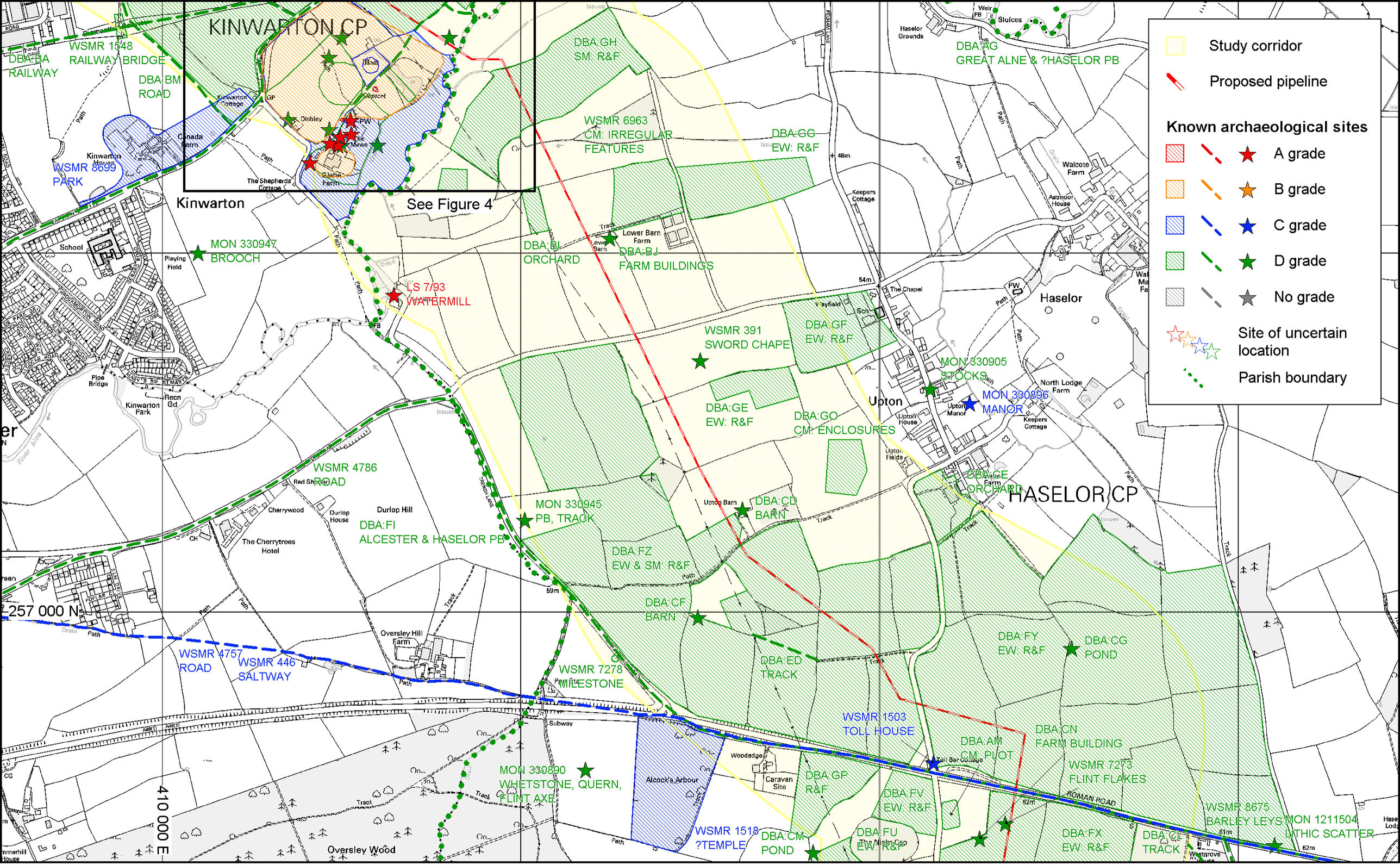

Figure 3: Archaeological constraints (1:10 000)

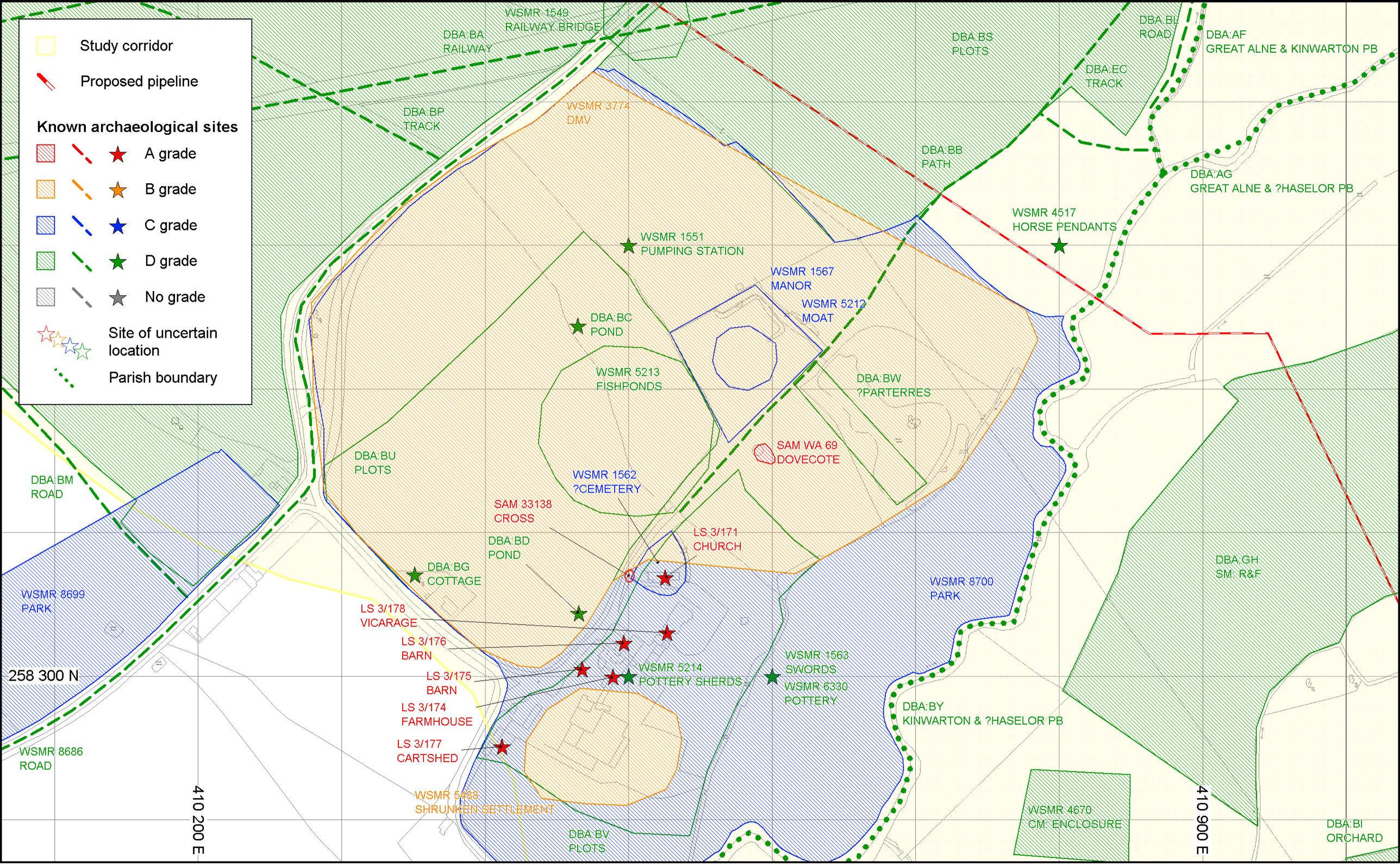

Figure 4: Archaeological constraints (1:2500)

network archaeology

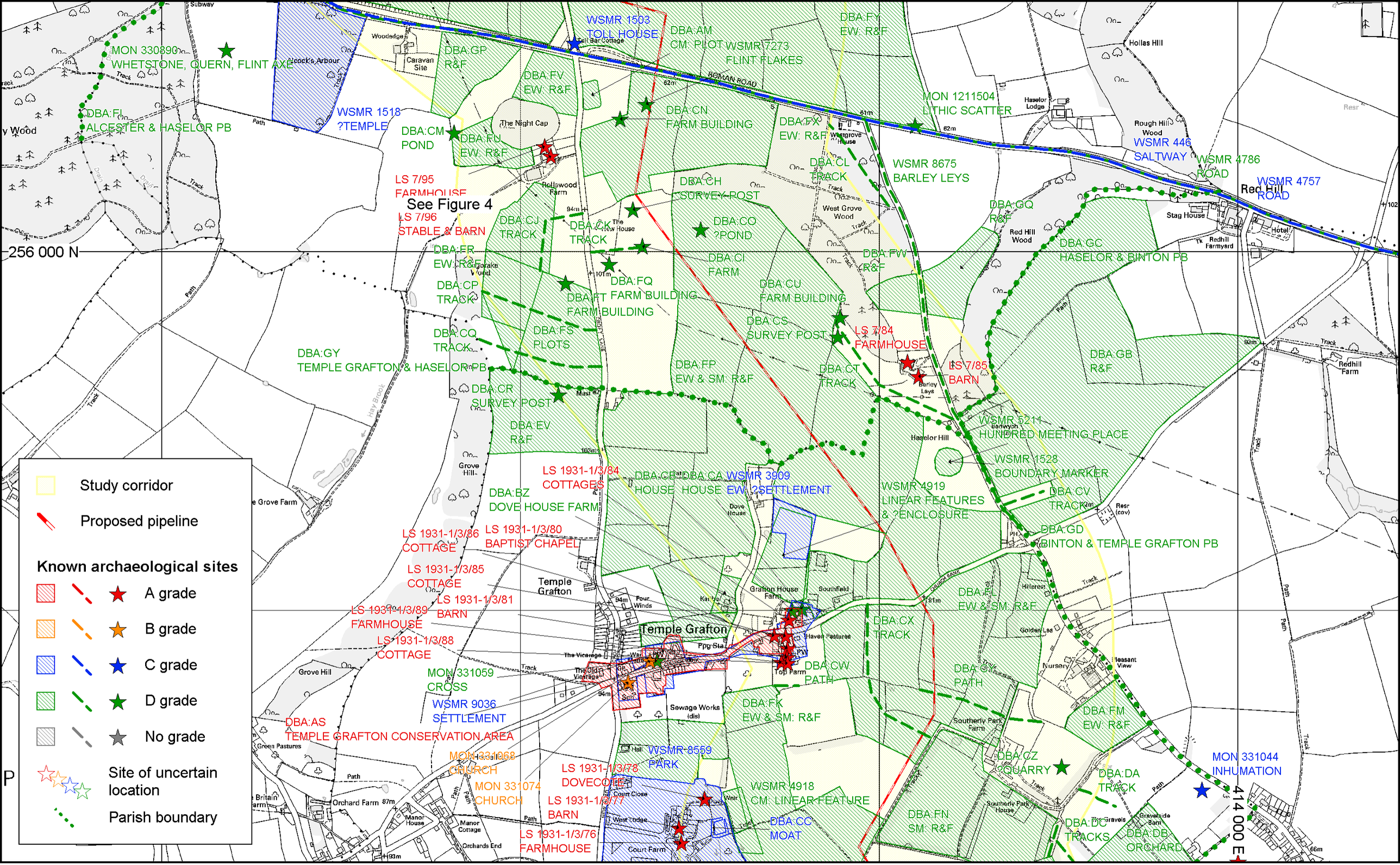

Figure 5: Archaeological constraints (1:10 000)

network archaeology

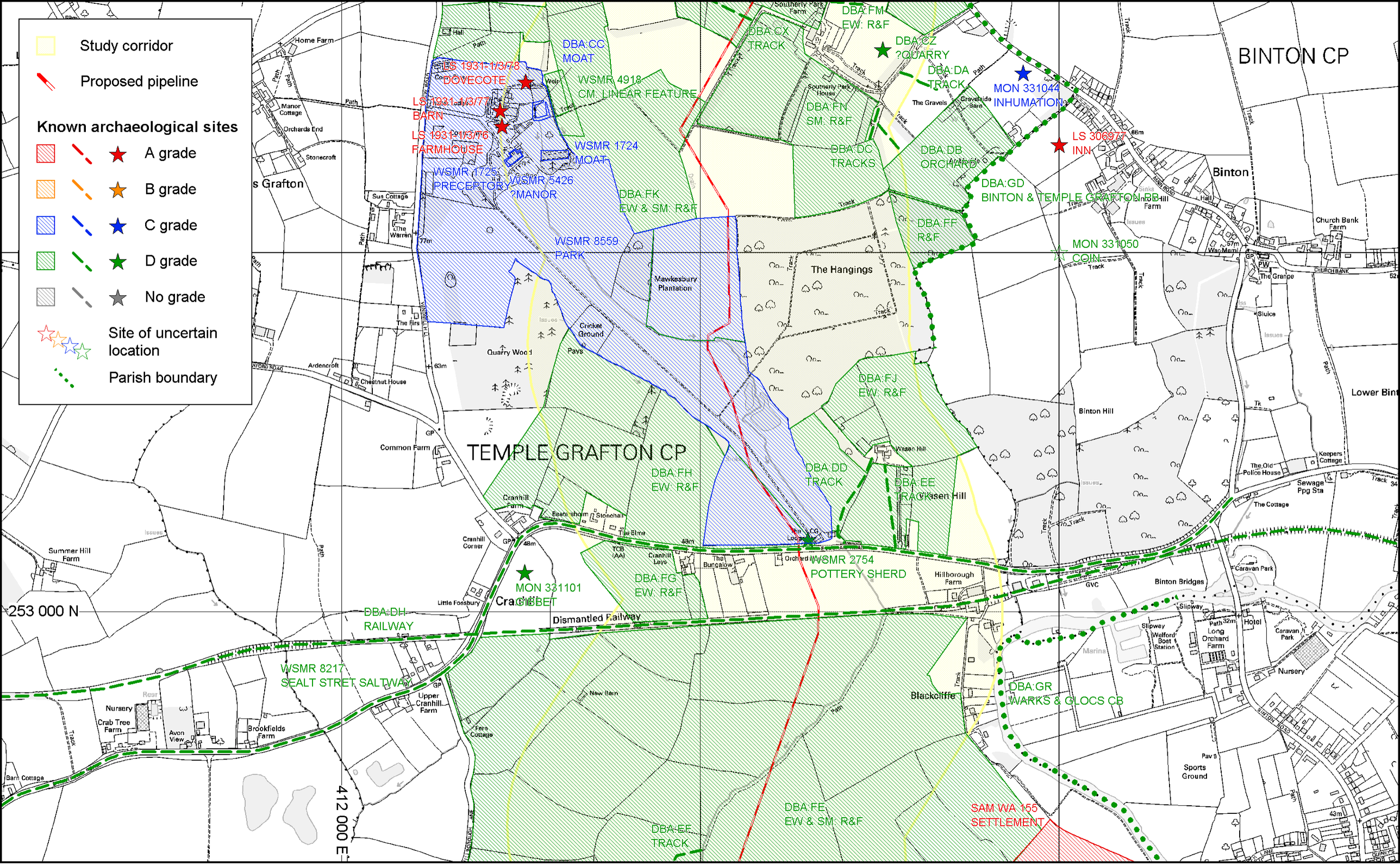

Figure 6: Archaeological constraints (1:10 000)

network archaeology

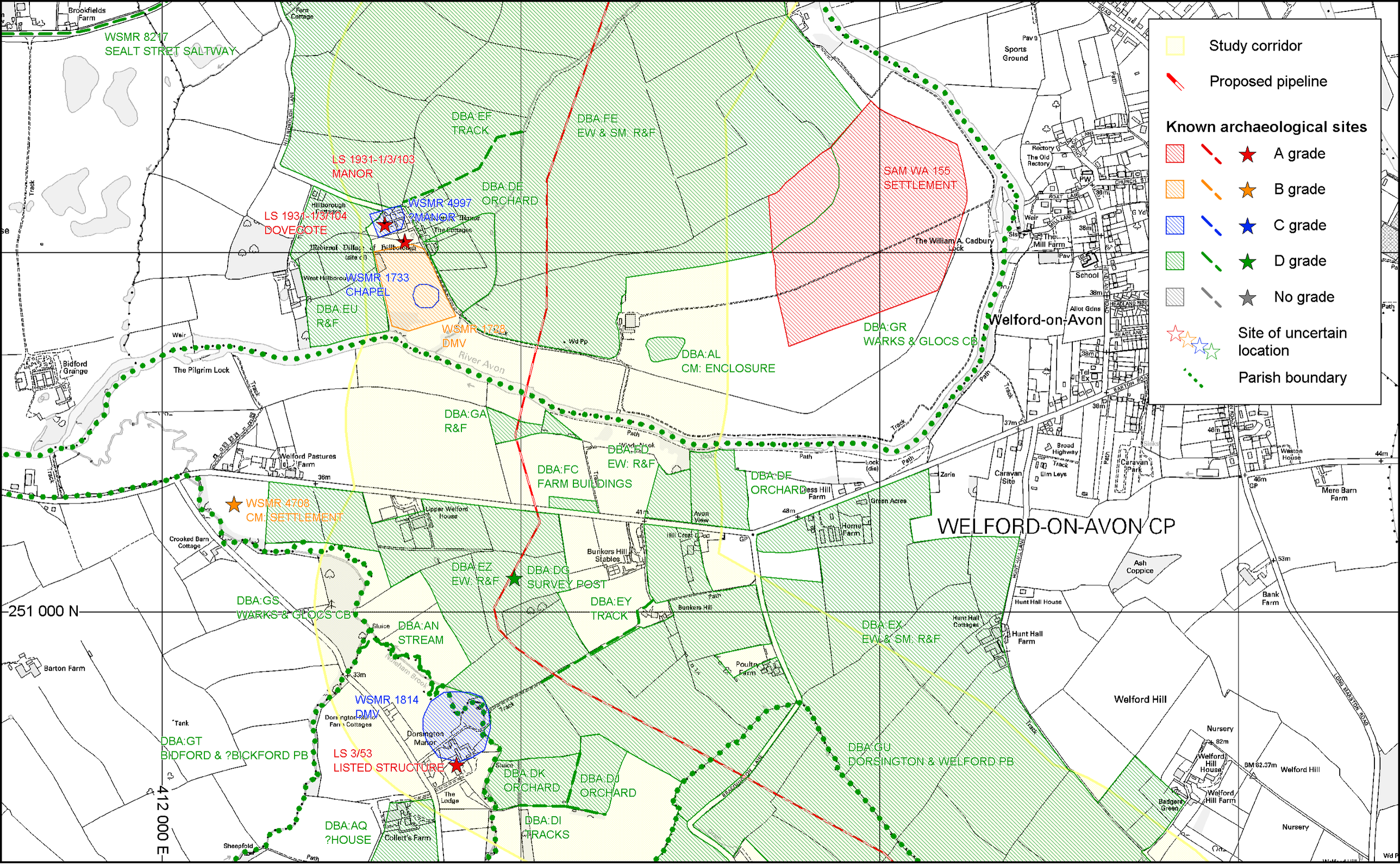

Figure 7: Archaeological constraints (1:10 000)

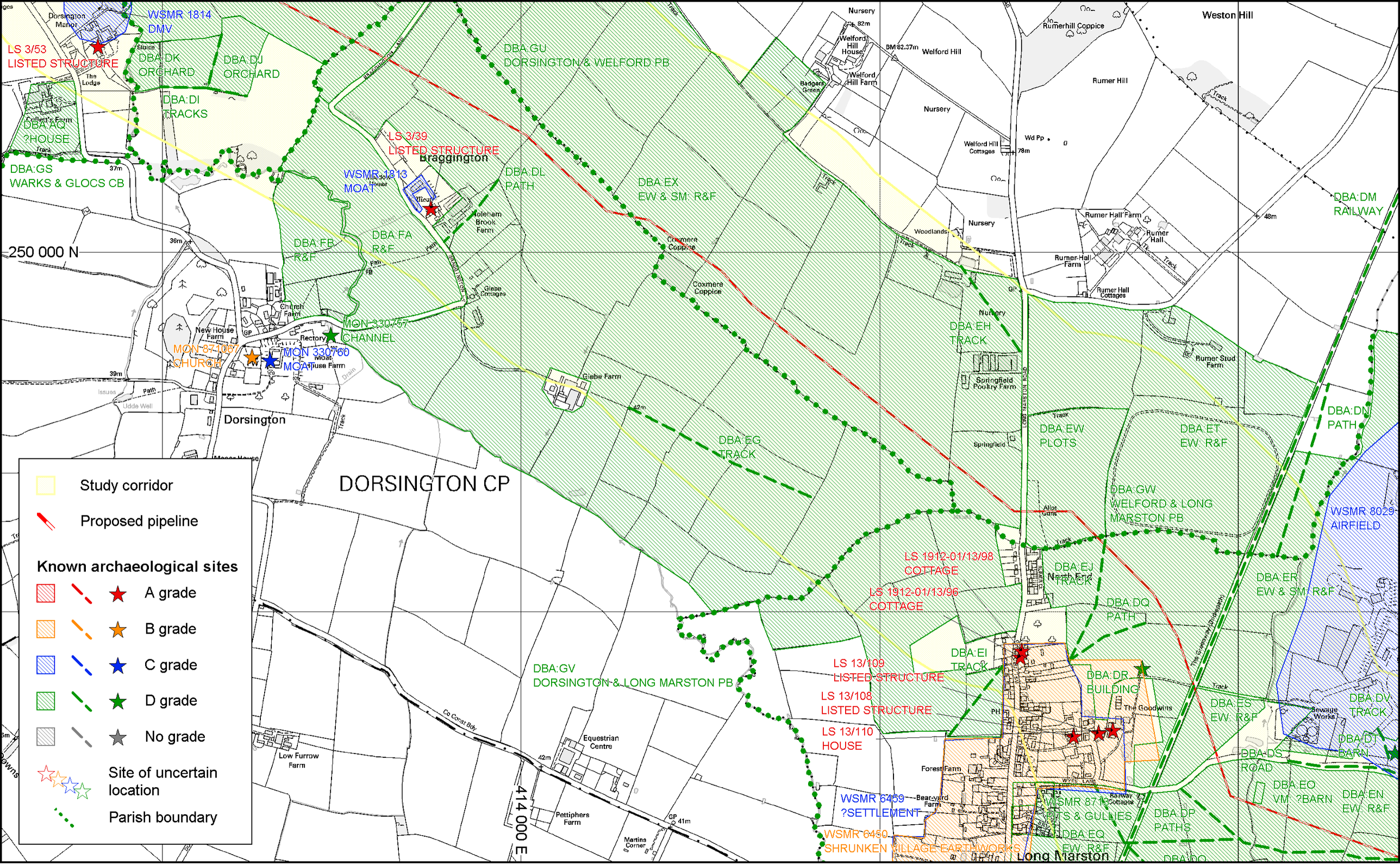

Figure 8: Archaeological constraints (1:10 000)

network archaeology

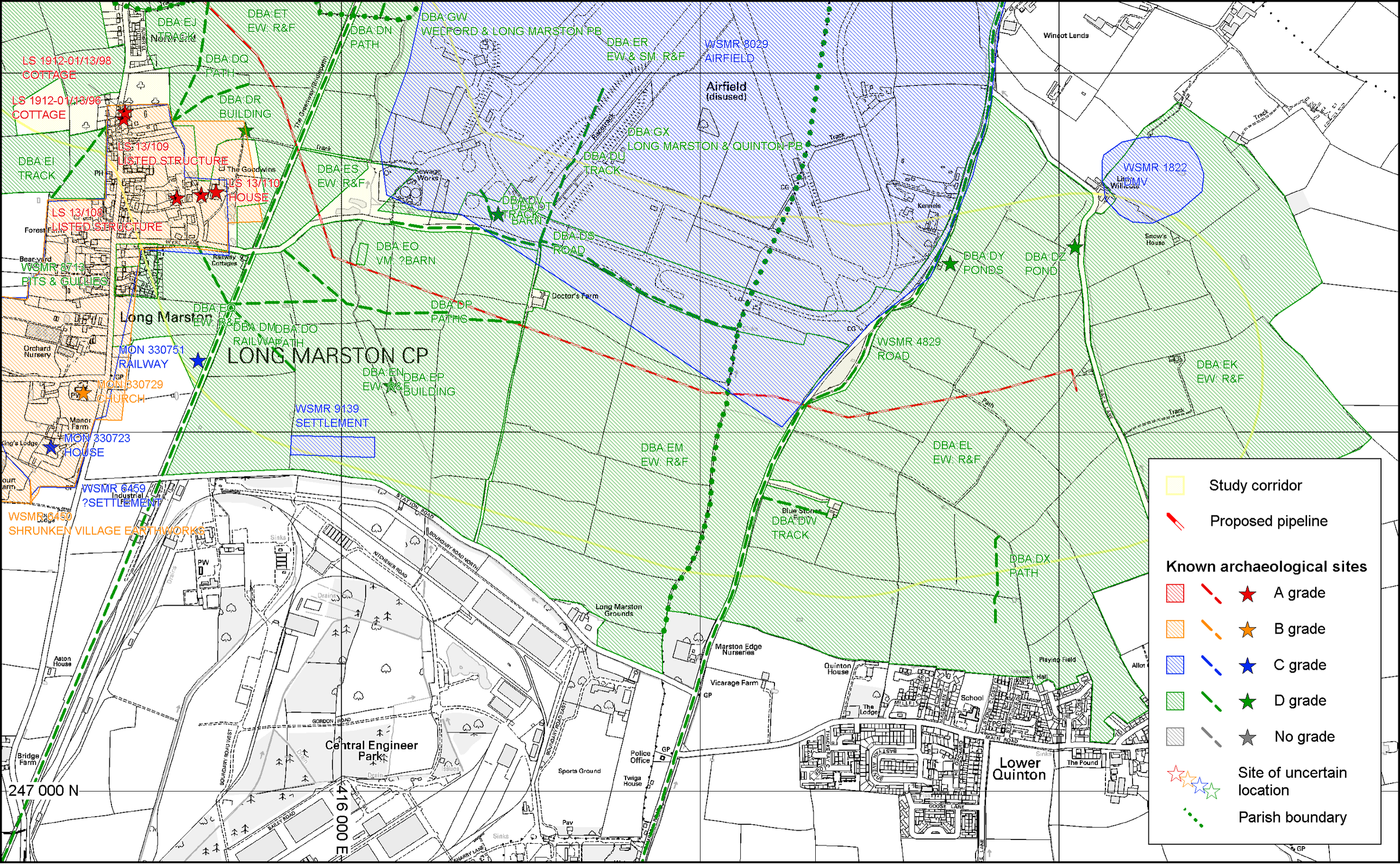

Figure 9: Archaeological constraints (1:10 000)

network archaeology

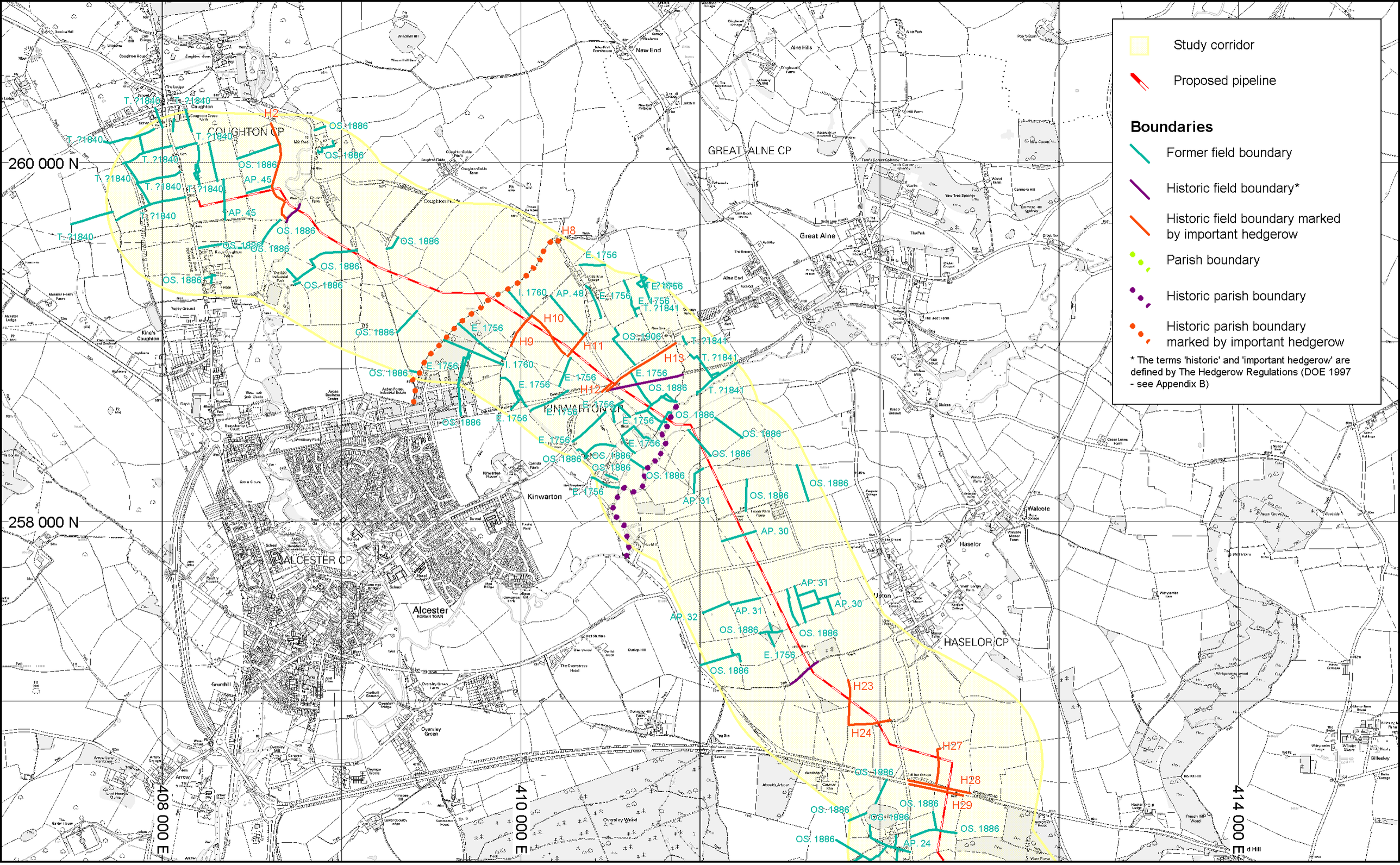

Figure 10: Field boundaries (1:20 000)

network archaeology

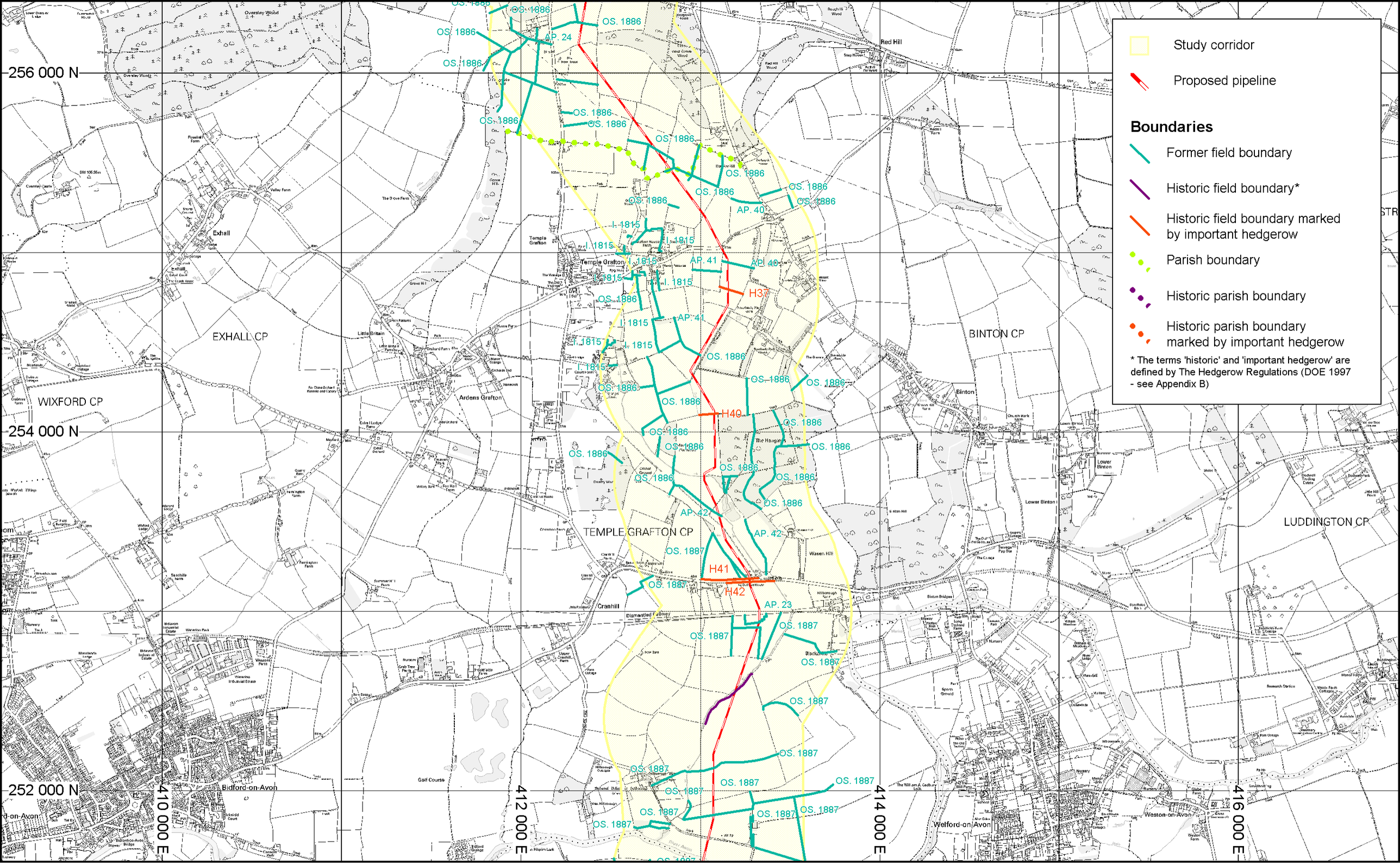

Figure 11: Field boundaries (1:20 000)

network archaeology

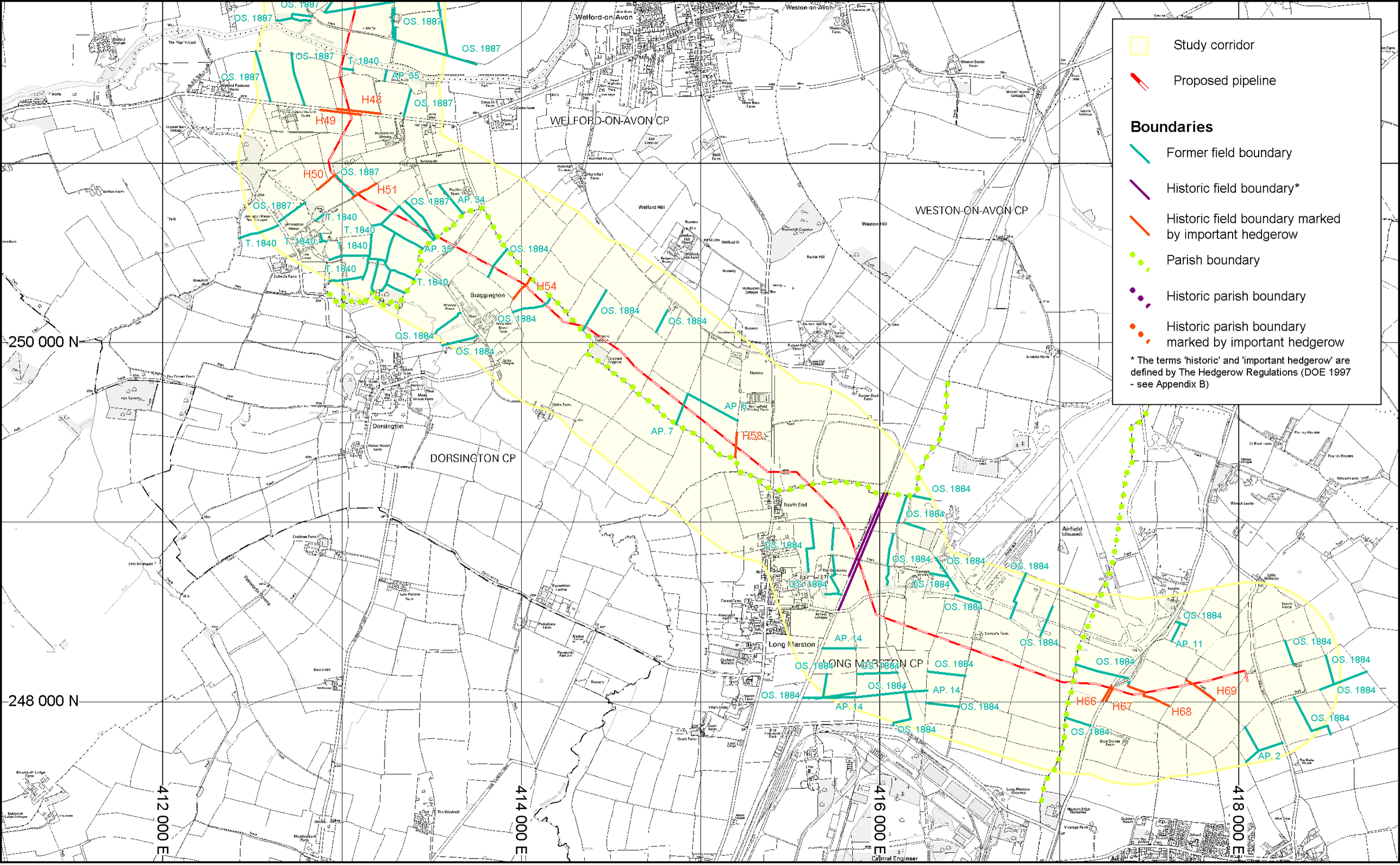

Figure 12: Field boundaries (1:20 000)

network archaeology

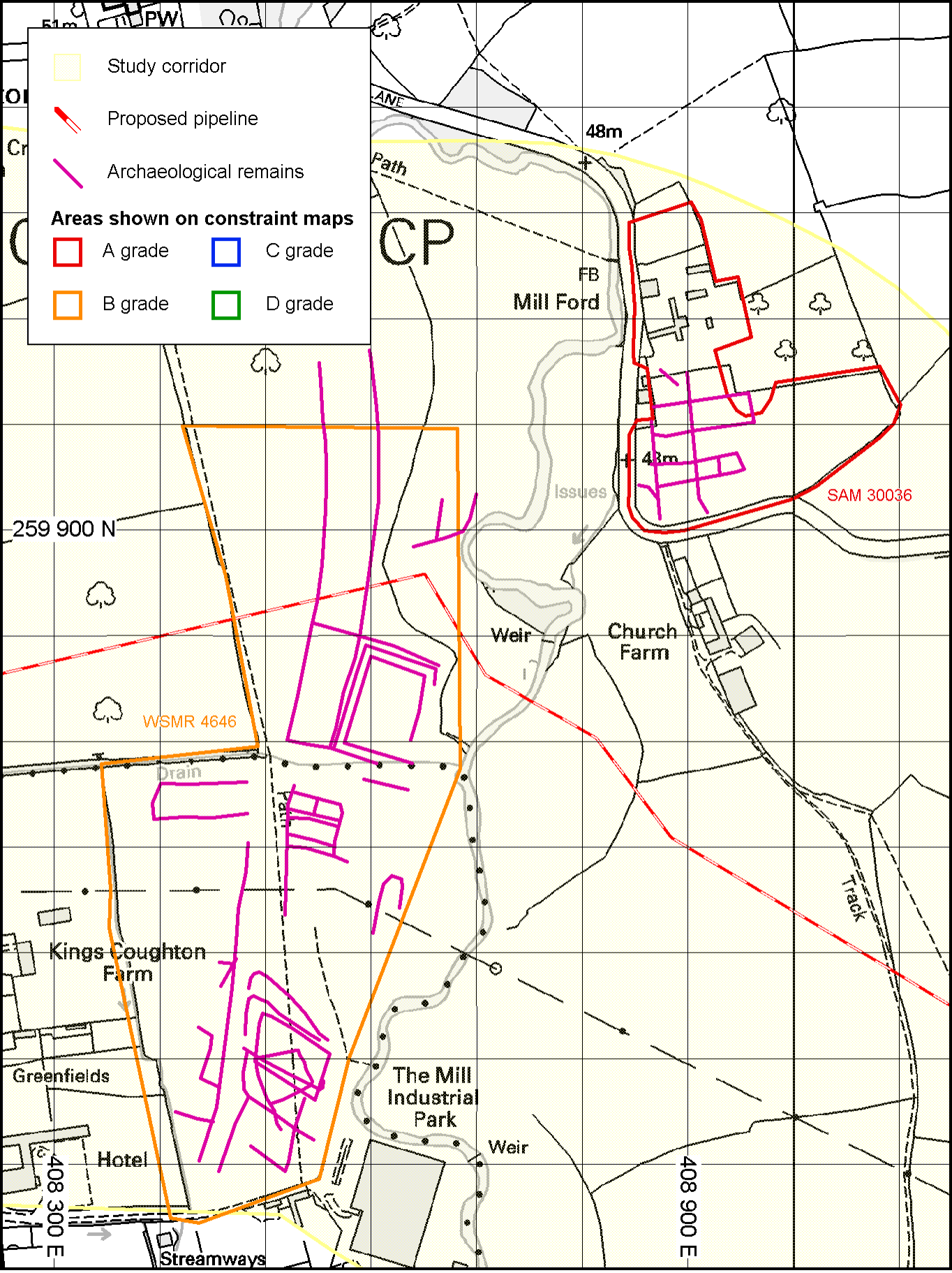

Figure 13: Aerial photographic data (1:5000)

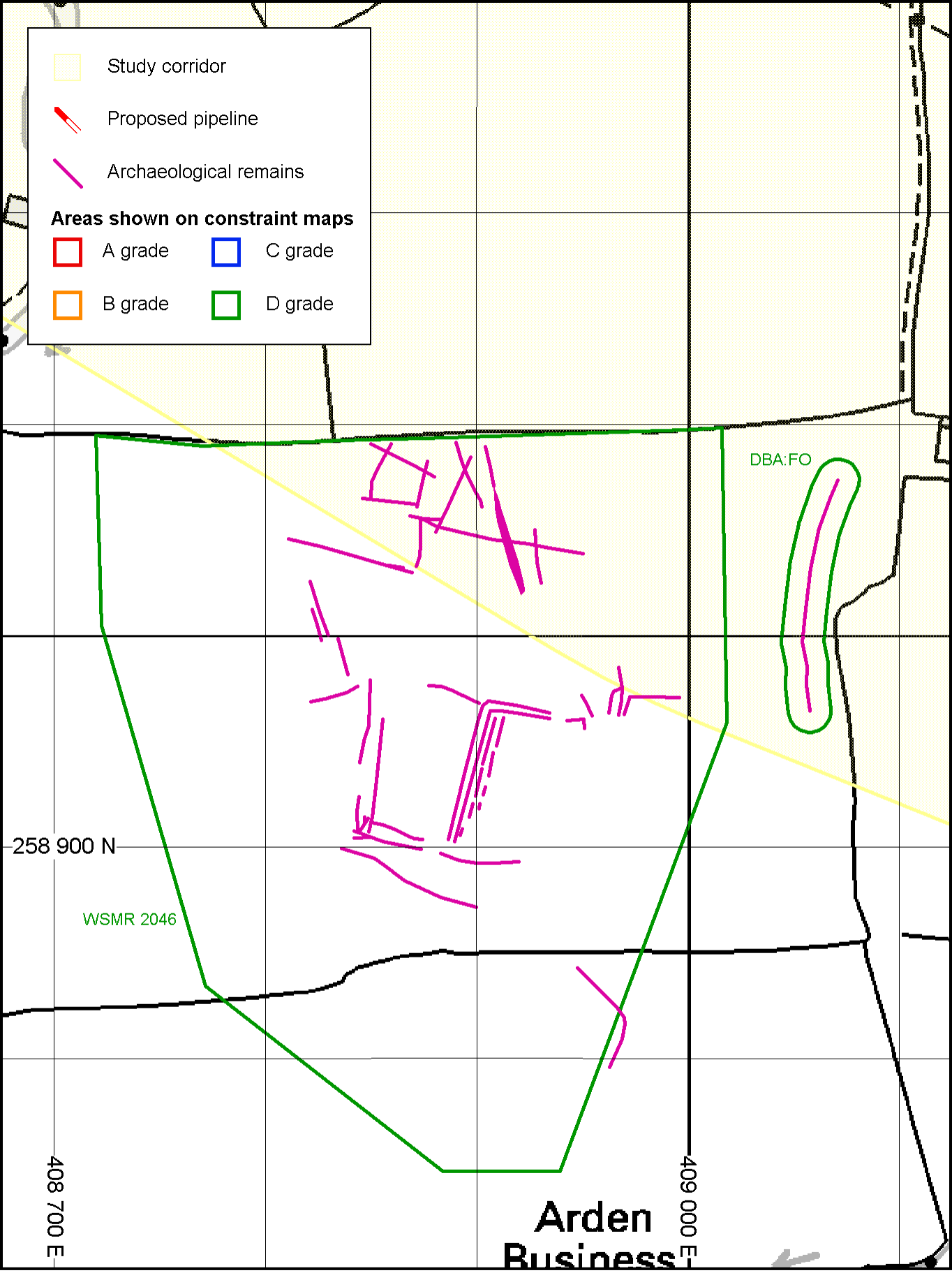

Figure 14: Aerial photographic data (1:2500)

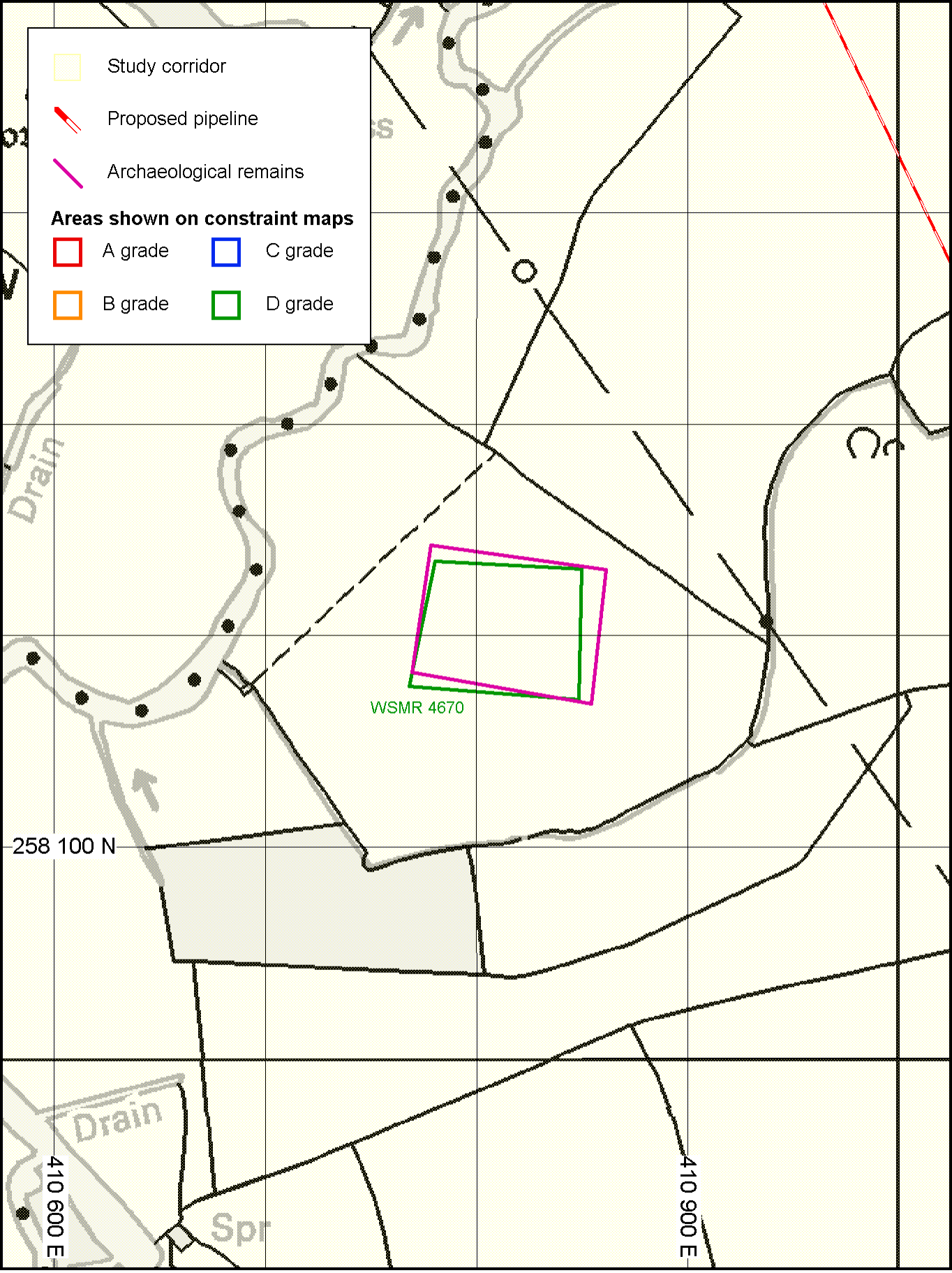

Figure 15: Aerial photographic data (1:2500)

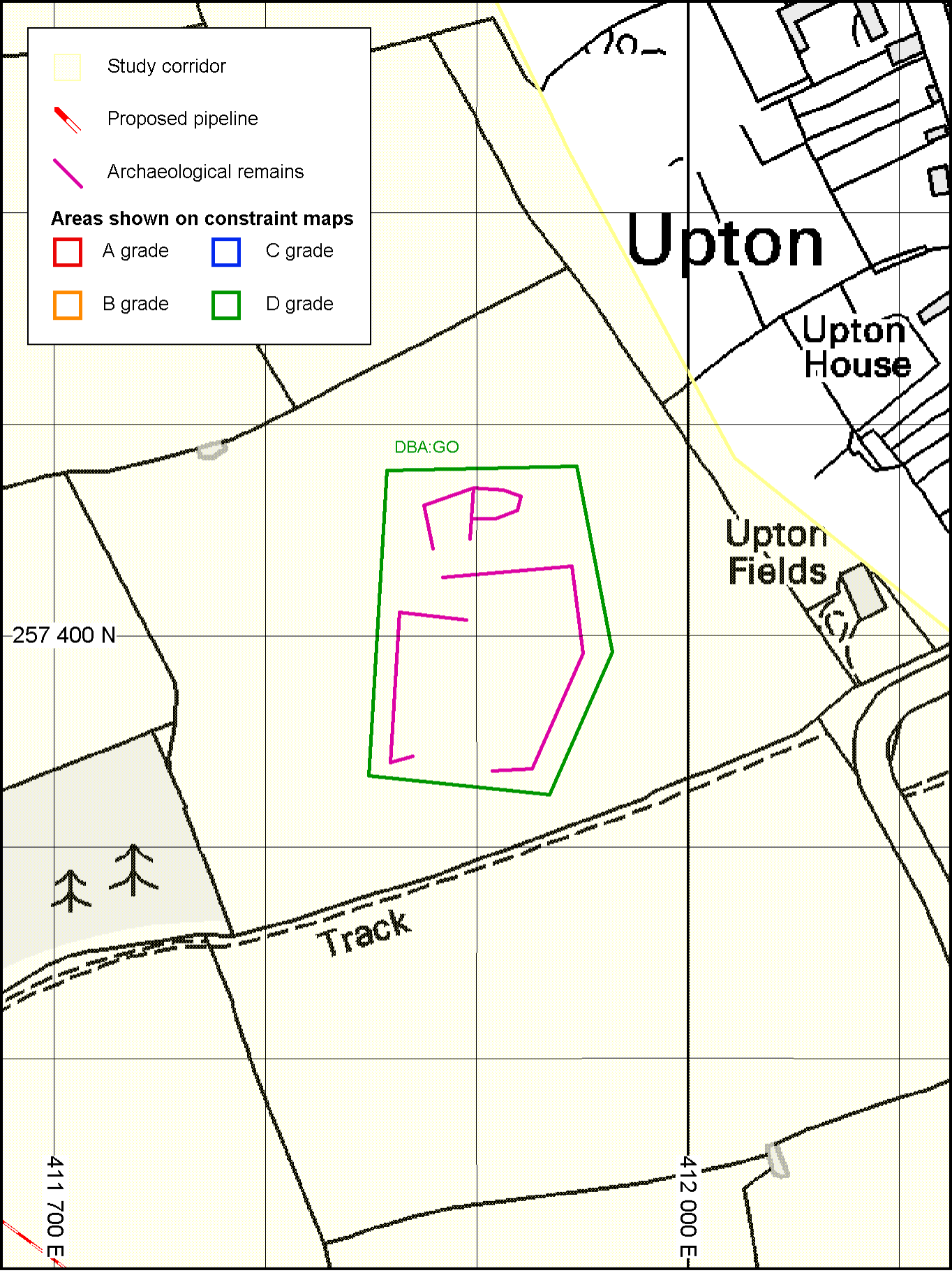

Figure 16: Aerial photographic data (1:2500)

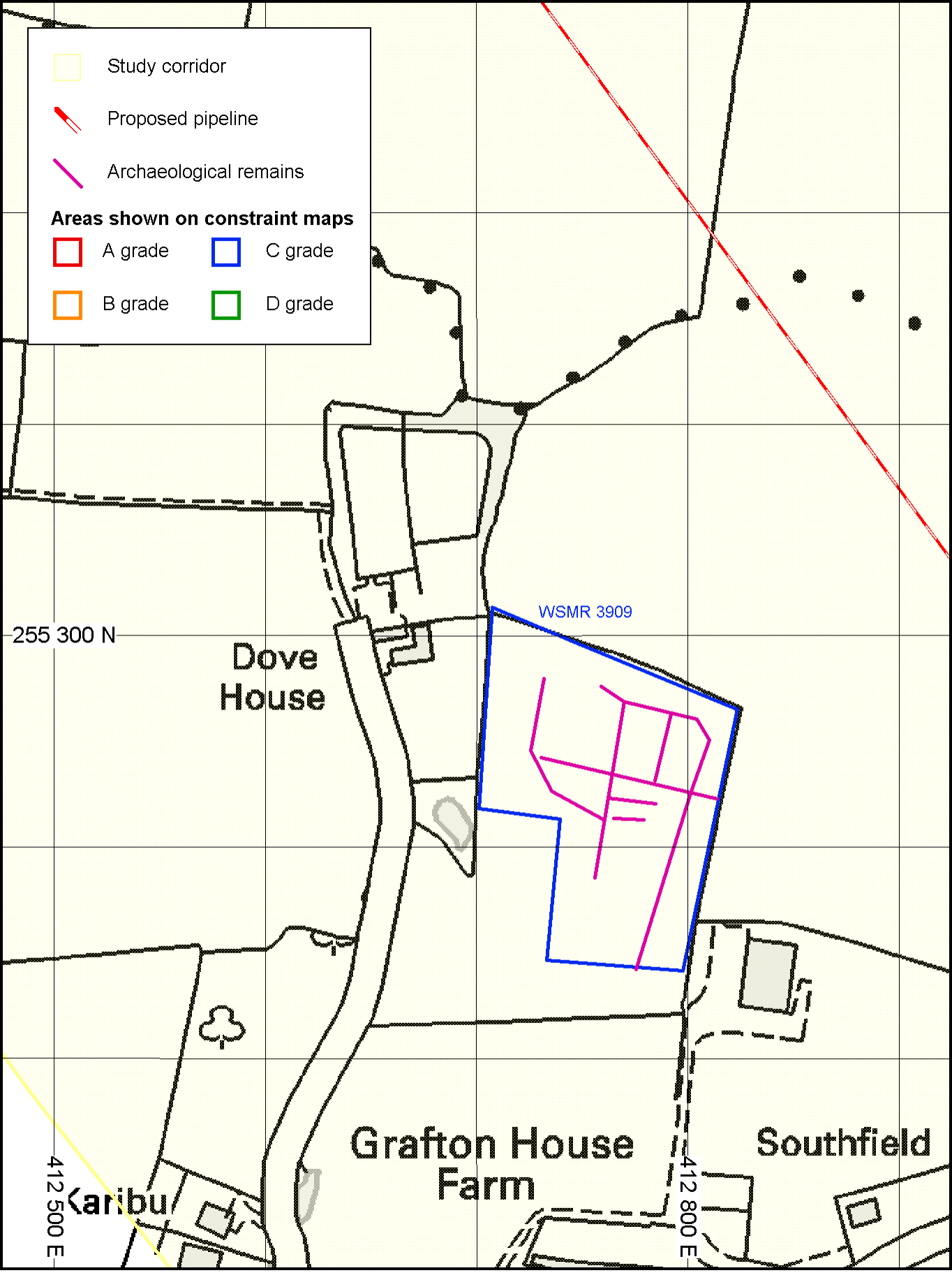

Figure 17: Aerial photographic data (1:2500)

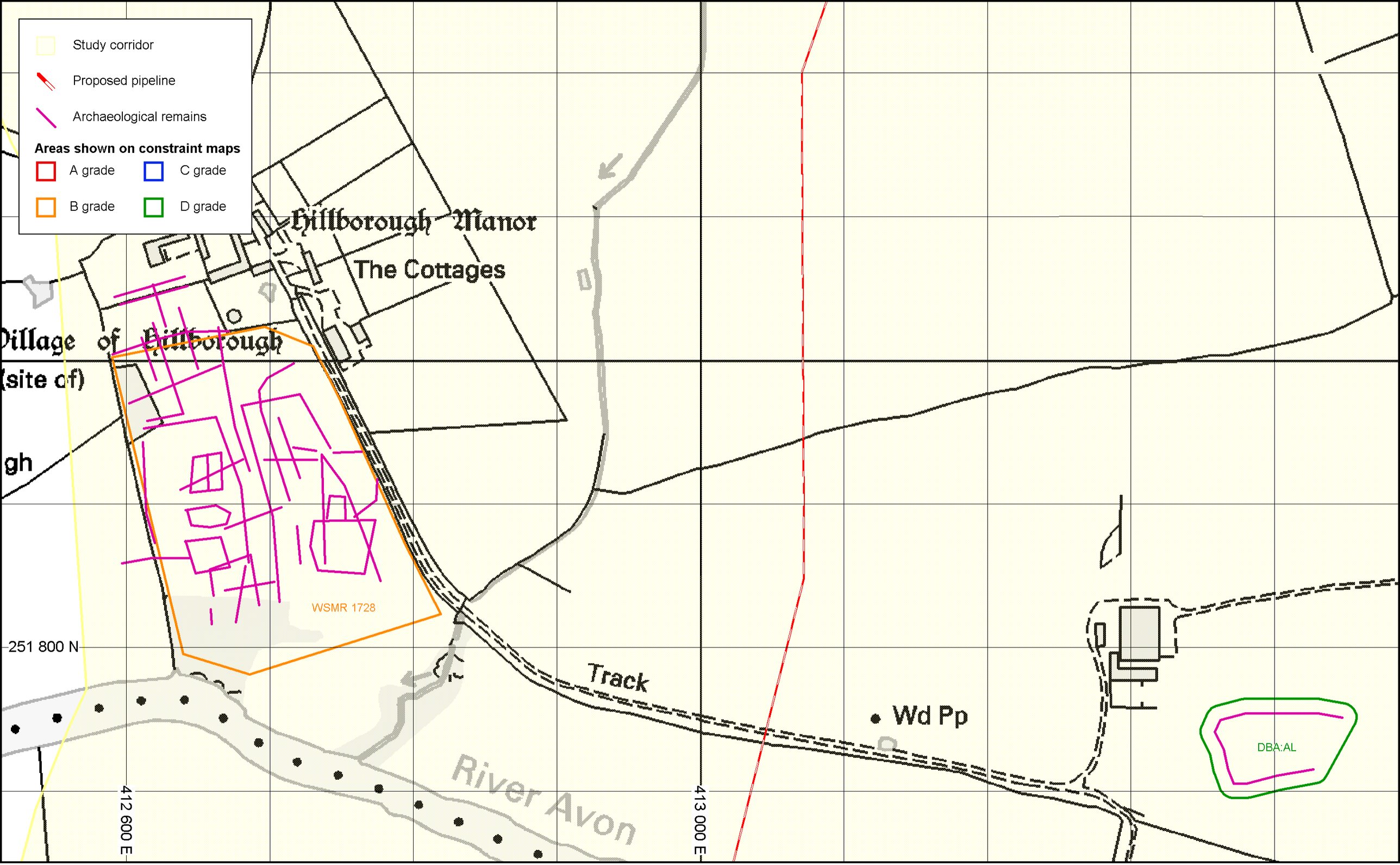

Figure 18: Aerial photographic data (1:2500)

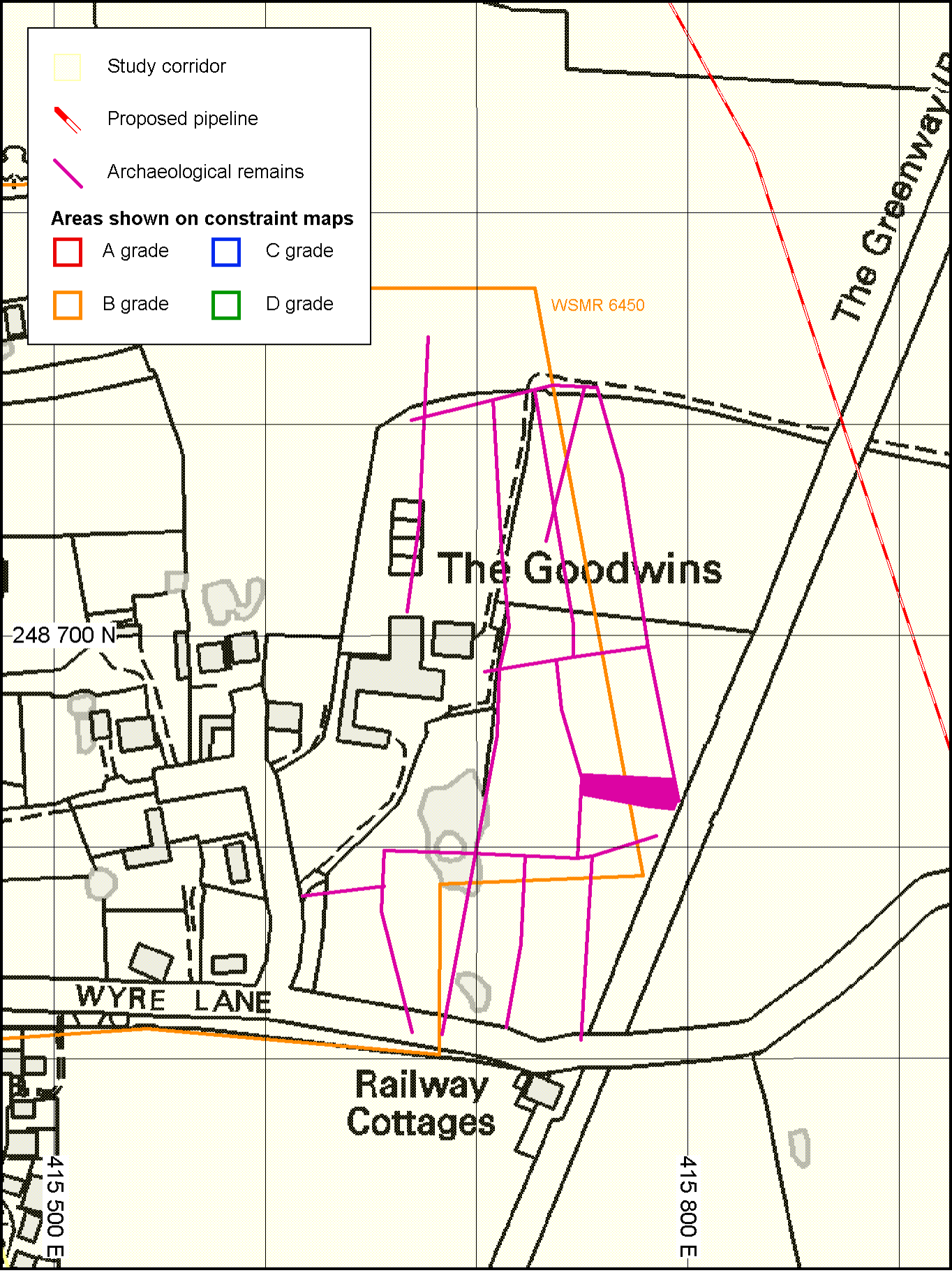

Figure 19: Aerial photographic data (1:2500)