

**Shipton by Beningbrough
Bypass**

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1. Summary

Client

Veryard & Partners, Consulting Engineers, Burton House, Rossett, Clwyd LL12 0HY

Site location

The archaeological assessment covered the corridor of the preferred route of the proposed bypass to a minimum of 100m either side of actual construction, and includes surrounding areas of archaeological interest where relevant. The village of Shipton by Beningbrough, hereafter referred to as Shipton, lies 10km north-west of the City of York along the A19 trunk road.

Method

Documentary evidence was collected during the preliminary archaeological assessment stage.

The first stage fieldwork evaluation was carried out in the areas of greatest archaeological potential within the bypass corridor as recommended using the results of the documentary research. This involved a combination of geophysical survey methods (magnetic susceptibility, fluxgate gradiometer and resistivity) and fieldwalking survey. A rapid survey of standing ridge and furrow plough strips was also carried out.

Summary of Results

Documentary evidence for the historical development of this area was sparse. In addition, late enclosure of much of the agricultural land means that the medieval landscape is difficult to reconstruct. Archaeological evidence is similarly poor, but there is evidence of pre-Conquest settlement to the north of the village, and an elliptical area of land demarcated by existing field boundaries and roads might relate to this. It is possible that the line of a Roman road passes through the bypass corridor.

The first stage field evaluations to the north of Shipton indicated possible prehistoric occupation together with two other areas of archaeological interest, one of which might relate to early industrial activity. Discrete areas where relatively high magnetic susceptibility correlate with high artefact distributions have been identified. These areas may be considered as having relatively high archaeological potential.

The resistivity survey located an anomaly which could well be due to the buried line of the Roman road. The fluxgate gradiometer survey failed to firmly locate any cut features, although a possible circular feature is evident near the area of possible prehistoric occupation.

Follow-up archaeological work in the form of a watching brief of an existing programme of trial pit excavations for engineering purposes will provide a clearer indication of any work needed to complete the evaluation of the site.

Shipton by Beningbrough Bypass

Part One

Preliminary Archaeological Assessment

2. Introduction

2.1 Assessment briefing

West Yorkshire Archaeology Service was commissioned by Veryard & Partners, on behalf of the Department of Transport, to carry out a preliminary archaeological assessment on the site of a proposed bypass at Shipton by Beningbrough, near York. Research for the assessment was carried out between 9th November 1992 and 27 November 1992. Fieldwork was conducted on 19th November 1992 and 26th November 1992.

Part One of this report contains the results of a desktop study of the archaeological potential of the site and its environs. Results of the rapid field survey carried out in accordance with the brief have been integrated with other sources (see Section 2.3). The assessment will form the basis of recommendations for further work deemed necessary to fully evaluate detailed aspects of the study.

2.2 The geographical setting

The village of Shipton, formerly a township, lies within the parish of Overton in Bulmer Wapentake. It now forms a separate civil parish. Shipton is a linear nucleated village straddling part of the A19 trunk road some 10km north of York.

The underlying geology of the area is Bunter Sandstone, over which there are substantial drift deposits, especially lacustrine clay. There are also areas of wind-blown sand, and smaller occurrences of boulder clay and glacial sands and gravels. The landscape is flat or gently undulating, and lies between 14m and 18m OD.

To the south-west the River Ouse runs south-east towards the City of York. The area of the survey is drained by artificial culverts and small streams such as Hurn's Gutter. The landscape is open, apart from the Overton Wood Plantation to the south-west of the bypass and a few small patches of farm woodland. Since the area of Shipton was within the medieval Royal Forest of Galtres it is likely that the area is now less wooded than it was for most of the last few hundred years.

The nearest settlements are the hamlet of Overton and the village of Skelton to the south, and the village of Beningbrough to the west.

2.3 Sources used in the assessment

Documentary sources for Shipton are generally poor. The earliest cartographic evidence which has so far been traced is from the Enclosure of 1815 (Map 1), although it is possible that there are earlier maps residing in estate archives which have not been identified.

Various county histories note Shipton in passing, and there is a brief reference to the village in Domesday. The village of Skelton, to the south, has been the subject of a concise history within the last 20 years, and there are some useful references here to Shipton.

For the archaeological record there are both oblique and vertical aerial photographs which have been used to reconstruct areas of ridge and furrow, and which have exposed a number of ancient field boundaries and enclosures. The North Yorkshire Sites and Monuments Record also has a record of a number of finds made in the village. These formed part of the

Featherstone Collection at the Museum of Hull, before it was razed by an incendiary attack in 1942. They probably no longer exist, but there was a catalogue which could be traced if necessary. The provenance of the finds appears to be vague.

All sources used in this assessment are listed in the bibliography at the end of the report. Those sources which have not been directly consulted are highlighted. Maps 1 and 2 are based on the Ordnance Survey Pathfinder Series maps, enlarged by 150% from 1:25000. Map 1 shows land-use, drainage, and the area covered by the 1815 Enclosure. Map 2 covers all available archaeological evidence.

3. Archaeological resources of the study area

References in this section refer to numbered points on Map 2. These identify either individual sites, or areas where some archaeological activity may be inferred to have occurred.

1. Cropmark site SE 547596

Photographer's ref: AJC075/29:PVA3762/022

Identified from the air as an area of ridge and furrow covering fields to the south of Shipton Grange. Other linear cropmarks show evidence of former field boundaries, which appear to be of post-medieval date. The ridge and furrow is of a narrow, straight form which is usually associated with 18th or 19th-century ploughing. At the southern end of this area of ridge and furrow aerial photographs show a small area of ditches or foundations which may reflect the presence of a building. A surface examination of ploughsoil here yielded no evidence of archaeological finds, and it is therefore impossible at present to identify the nature or date of any such structure. These cropmarks lie outside the bypass corridor.

2. Cropmark site SE 55475963 SMR no. 5938

Photographer's ref: PVA3762/023;033;034

A series of linear cropmarks indicating the presence of former field boundaries, and one small enclosure. No surface finds were observed in this area during survey, and there is no evidence to date these features since their form is not diagnostic of any particular period. The enclosure lies to the east of the road corridor.

3. Ancient settlement SE 556594

Possible site of a pre-Conquest settlement, not previously recorded on the SMR. The 1st edition 6" Ordnance Survey (sheet 156) indicates three or four fields in this vicinity under the name of *Audby Field* (see Appendix 1). In addition, the 1815 enclosure map names Audby Field and an Audby Close (SE 55755910). *Aud* is derived from *Ald*; the elements *Ald* and *-by* are Norse, specifically Danish, and refer to an 'Old farm', or settlement (Smith 1963 V, 38). The name itself probably belongs to the 9th or 10th century AD, but could be as late as the 12th century (Bob Yarwood, pers. comm.). It is clearly referring to a settlement that no longer existed when the name was given. It is possible, therefore, that the settlement itself belonged to the Anglo-Saxon, or possibly

even Romano-British period, the former being more likely. Place-name evidence is notoriously difficult to rely on without supporting evidence. An important feature of the landscape which may be associated with this field name is an elliptical shape formed by field boundaries and roads east of modern Shipton. This area is delineated by Shipton High Street to the west and Mucky Lane to the east. The dimensions of the area measure 1.8km N-S by 0.6km E-W, with East Lane dividing the area in half (Fig. 1). The location of Manor Farm towards the centre of this parcel of land may also be significant (see sections 4 and 8.5.1 for further discussion).

It is perhaps surprising that such a name (Audby Field) has survived into the 19th century, but it seems to indicate that these fields have been in constant use for a considerable period. Immediately to the south-east of Audby Field runs Mucky Lane; the name itself means more or less what it says, but its derivation from Old Norse or Danish, meaning 'dung', again suggests a pre-Conquest presence in the area.

4. Archaeological finds SE 550590 SMR no. 5932

Group of stone implements, not accurately provenanced, comprising 2 flint axes, 2 blades and a core. Probably Neolithic in date, they formed part of the Featherstone Collection housed in Hull Museum until it was destroyed by fire in 1942. A catalogue was published (HMP 211, 1940) which contained illustrations, but it has not yet been located. It is not clear under what circumstances the finds were made, but if found together they may represent a 'hoard' of implements. The probable find spot lies outside the corridor of the proposed bypass.

5. Areas of ridge and furrow SE 556586 and surrounding

Areas of strip cultivation in and around Shipton village identified from aerial photographs. Many of these fields exhibit narrow strips, less than 4-5m wide, indicating that they were formed during the 18th and 19th century, but there are other areas (such as the fields at SE 560587 and around SE 556578) where strip cultivation from the medieval period, characterised by wide strips and curved field boundaries, survived until recently. Further south, in North Field, Skelton, the classic reversed 'S' shape boundaries indicative of cultivation using the medieval mouldboard plough may follow boundaries belonging to an even earlier date (see below, section 3.9).

Manor Farm at SE 554585 reflects the former site of the Manor of Shipton, which was probably in existence before Domesday, when Count Alan had six carucates there (Page 1923, 168). Little is known of the history of the manor, except that it changed hands frequently during the medieval period. Since 1668 it has formed part of the Manor of Beningbrough. Many of the fields in the immediate vicinity of the manor were probably held in demesne - that is, they were farmed as part of the manor itself. It is possible that the origins of the Manor may be associated with the settlement referred to in Audby Field (see above, section 3.3).

6. Cropmark site SE 561581

Photographer's ref: PVA77:4:02/25-28

A series of field boundaries and enclosures located to the south and east of Hurn's Gutter (Fig. 1). The form of the cropmarks, detected from aerial photographs, is not diagnostic of any particular period, but they may pre-date medieval field boundaries in the area. It may be of note that the south-east end of the cropmark butts against the track which runs adjacent to the stream to the east. This track appears to be raised on a bank at this point, and coincides with the conjectured line of the Roman road (see section 3.9), and it is tempting to associate the two. For the present, though, this is speculative. The area covered by the cropmarks was briefly examined for surface finds, but without result.

7. Cropmark site SE 565576

Photographer's ref: PVA77:4:02/25. PVA3762/020. 035

Field boundaries identified from aerial photographs, and probably representing earlier field boundaries. The form is not diagnostic of a particular period.

8. Cropmark enclosure SE 556570

Part of an apparently square enclosure with slightly rounded corners and a ditch of substantial width. The interior of the enclosure showed evidence on aerial photographs of narrow ridge and furrow, suggesting its survival as an earthwork into the post-medieval period, but the enclosure itself probably dates from the Romano-British period. Stapleton and Thompson (1971, 2) note that its form suggests a Roman fort. Their fieldwalking yielded one or two sherds of possible Romano-British date. In their view, the general paucity of finds indicates very limited occupation, and they suggest that it may have been a practice fort similar to that previously found on Bootham Stray, a few miles to the south. This seems a reasonable inference, given that its proximity to the Roman city of *Eboracum* (York) probably rules out a full-scale fort. The location close to the conjectured road is plausible. It lies well outside the corridor of the projected bypass.

9. Possible Roman road SE 567567

In 1966, workmen digging a trench for a water pipe at the north end of St Giles Road, Skelton, encountered, at a depth of 18" (0.4m), an 'ancient road', some 50' (15m) wide, metalled with cobbles, and set on a bed of clay (note in *Yorkshire Archaeological Journal* 1967, 105). It ran along the line of St Giles Road, and appeared to continue to the north-west.

It is hardly surprising that the A19 trunk road between York and the North-East should have its origins in the Roman period, although it is, perhaps, odd that this has not been accepted before now. Local oral tradition has it that a Roman road used to run through fields to the east of the present Shipton Road, and the former name of this road, recorded on the 1st edition of the Ordnance Survey as Shipton Street, is significant. The *Street* element is frequently associated with former Roman roads (as in Watling Street), and this supports the inference that the A19 does indeed run along the line of an ancient road.

It is clear, though, that the original road must have run on a different alignment

from the present road, probably from south of Skelton. The dog-leg on which the village of Shipton is situated has probably been caused by a diversion around some obstacle, either a settlement or area of unsuitable, perhaps boggy, ground. From Shipton church northwards the road appears to regain the classic straight lines of a military Roman road, and this is the basis on which the conjectured line has been drawn in Map 2. The raised portion of bank noted above (section 3.6) may reflect attempts to retain the straight line of the road above boggy ground close to the stream, but this evidence must be regarded as circumstantial. Confirmation of the conjectured line would be necessary at various points, and its present condition, if still extant, is likely to vary considerably.

4. Discussion

Our earliest knowledge of Shipton is from Domesday (AD 1086), in which it is named as *Hipton*. The name is derived from Old English *heope* meaning 'briar or bramble', and *tun*, meaning village or settlement. It did not become Shipton until much later, perhaps the 15th century (Smith 1928, 15).

Shipton appears never to have been much larger or smaller than it is now, but the date of its origin is difficult to determine. It is reasonable to believe that a road ran close to the village from the Roman period onwards (see above, Section 3.9) and there is likely to have been domestic settlement in the area, located close to York and on a main thoroughfare heading north. Any such settlements (especially if they were of native British form, lacking masonry building foundations) are likely to be difficult to detect, given the apparent lack of surface finds from the area. Gradiometer survey may pick up substantial ditches and pits, while resistivity survey would be appropriate for the location of solid structures. However, it is necessary to identify discrete areas for such work to be carried out. One such location is Audby Field (see Section 3.3 above), where the 19th-century field name reflects Anglo-Saxon and, possibly, earlier occupation. Detection of any settlement here would depend on the techniques used, and on the nature of any subsurface archaeological features. It is still possible that an intensive programme of fieldwalking might highlight areas of specific interest.

The present location of the village may offer a clue to its date. Whatever the reason for the diversion in the line of the Roman road, it seems that the core of the village grew afterwards on the new line. It is important, therefore, that as much as possible of the original line of the road be established, and its abandonment dated.

Nevertheless, it is clear that by the time of the Conquest there was a small village or hamlet here, taking advantage of the road, and perhaps appearing as a clearing within what was to become the medieval Royal Forest of Galtres. Skelton village lay at the southern edge of the forest, so Shipton would have been about 2km within it. Such a settlement would have exploited forest resources for pannage (grazing of pigs), charcoal burning and, periodically, assarting or clearing for pasture or cultivation. It has to be stressed, of course, that a Royal Forest did not necessarily comprise dense areas of woodland. A forest implied a set of legal and land-use characteristics rather than an expanse of wildwood. The place-name *heopetun* may, though, reflect unmanaged coppice or abandoned clearings, as the presence of briar (dogrose) and brambles are associated with the neglect of woods.

An enclosure act for the lands around Shipton was not passed until 1815 (52 Geo III), when Shipton was a township in the parish of Overton. Where enclosure maps survive from the 18th century, they often reflect much of the pattern of the late medieval landscape. The 1815 map of Shipton covers only a small area around the centre of the township (shaded area in Map 1), and it seems likely, therefore, that piecemeal enclosure had accounted for much of the land around in the centuries before. Indeed, the irregular shape of many of the boundaries around the village, especially in the region of Audby Field, suggests that many of the fields were formed by informal enclosure of woodland assarts, which may have been taking place over several hundred years. As noted above (Section 3.5), much of the ridge and furrow which survived into the present century is probably of 19th-century date, characterised by narrow, straight parallel ridges.

Shipton's only claim to historical fame was a battle which almost took place on Shipton Moor, to the north of the village, in 1405. Archbishop Roger Scrope raised 20,000 men against Henry IV after publishing his Articles of Impeachment against the King. Henry, with 30,000 men, confronted Scrope at Shipton Moor. The archbishop was persuaded to enter negotiations in a nearby clearing in the forest, where he was arrested. He was subsequently executed as a traitor (Knight, undated, 259). Even less impressive, Shipton's most famous resident was one S. Ireland, a 'celebrated voltigeur', apparently a tumbler or acrobat (Allen 1831 III, 373).

The present road from Skelton north towards Easingwold apparently dates from 1752, when a new turnpike road was constructed by the York and Northallerton Trust. It remained as a turnpike until 1875.

5. The archaeological response

5.1 Significance criteria

Assigning values to archaeological resources whose nature is unclear presents a problem. Nevertheless, some general principles can be applied in this assessment. Firstly, there are no archaeological sites which, on present evidence, merit scheduling as Ancient Monuments, or preserving *in situ*. For the majority of potential sites in this study the primary requirement is to establish the quality of the information that they may offer, so that an adequate response can be established. There are, in addition, areas which are unlikely to require further evaluation.

The Monuments Protection Programme has adopted the following discrimination criteria for 'scoring' sites (Darvill *et al.* 1987, 393-408):

- Survival: the general form and state of a monument class
- Group value: association with other monument classes
- Potential: likely quality of the archaeological record
- Documentaion: the quality of secondary information
- Diversity: the variety of components included in the monument
- Amenity value: monuments and their place in the community

Scoring within the MPP is done on such a level as to be able to discriminate between sites of a national, regional and local level. None of the sites within the survey area offers sufficient information at the present to be able to assess them properly. However, for the purposes of

the study it is useful to note the following:

- a) Field boundaries detected from aerial photographs with no apparent associated enclosure or structures are unlikely to offer more than minimal information, and conversely.
- b) Potential for obtaining information on the date, form and function of boundaries and associated enclosures increases with:
 - likely preservation of stratified deposits in ditches, etc.
 - likely preservation of organic remains: bone, seeds, wood, etc.
 - potential for recovering significant completeness
 - quality and quantity of cultural material (finds, especially pottery)
- c) Location of previously unknown settlement, land-use patterns and communications systems would have implications at least at regional level.
- d) Significant preservation of structures and deposits relating to settlement, land-use and communications would require preservation by archaeological recording.

5.2 Ranking of sites

With these points in mind, sites 1-9 referred to in section 3 may be ranked in terms of their potential:

I Audby Field (section 3.3)

Geology: solid: SSG; drift: silt and clay with some blown sand

Area covered: fields within the northern half of the elliptical area east of Shipton

Likely form: uncertain, possibly structures and enclosures

Within corridor? At least partly

Possible documentary sources: none identified

Relation to other sites: possible relation to Roman road to west

Current land-use: cereal and root crops

Possible damage: topsoil depth 0.4m: plough damage unlikely; some drainage and possible modern house foundations at south edge.

II Roman road (section 3.9)

Geology: solid: SSG; drift: glacial sand and gravel, blown sand

Area covered: uncertain, see line on Map 2.

Likely form: metalled surface, linear, clay foundation, gutters

Within corridor? At least partly

Possible documentary sources: none identified

Relation to other sites: Audby Field; cropmark site (section 3.6)

Current land-use: cereal crops

Possible damage: field drains, possible robbing in antiquity

III Cropmark enclosures (section 3.6)

Geology: solid: SSG; drift: silt and clay

Area covered: see extent of cropmark, Map 2

Likely form: ditches, possible structures

Within corridor? Yes

Possible documentary sources: none identified

Relation to other sites: Roman road (section 3.9)
Current land-use: cereal crops
Possible damage: topsoil depth c. 0.4m: plough damage unlikely

IV Possible Roman fort (section 3.8)

Geology: solid: SSG; drift: silt and clay
Area covered: see extent of cropmark on Map 2
Likely form: rectilinear enclosure; substantial ditches, possible internal structures
Within corridor? No
Possible documentary sources: none likely
Relation to other sites: unlikely
Current land-use: cereal crop
Possible damage: plough damage to ditches and internal features may have occurred

V Cropmark field boundaries, possible structure (section 3.1)

Geology: solid: SSG; drift: clay with sandy patches; blown sand
Area covered: see extent of cropmarks on Map 2
Likely form: field boundary ditches; possible structural foundations
Within corridor? No
Possible documentary sources: none identified
Relation to other sites: unknown
Current land-use: cereal crops and grass
Possible damage: field drains; possible ploughing

VI Archaeological finds (section 3.4)

Geology: solid: SSG; drift: clayey sand with pebbles
Area covered: provenance uncertain, but see Map 2
Likely form: possible hoard; structures unlikely
Within corridor? No
Possible documentary sources: Hull Museum catalogue
Relation to other sites: unknown
Current land-use: unknown
Possible damage: destruction of context during retrieval; finds probably destroyed in 1942

VII Ridge and furrow (section 3.5)

Geology: solid: SSG; drift: sandy clay with pebbles
Area covered: see extent of strip fields in Map 2
Likely form: parallel ridges and furrows, where extant
Within corridor? Only partly
Possible documentary sources: tithe awards, if they still exist
Relation to other sites: unknown
Current land-use: grass and cereal crops
Possible damage: almost all destroyed by modern ploughing.

VIII Cropmark boundaries (section 3.2)

Geology: solid: SSG; drift: silt and clay

Area covered: see extent of cropmark on Map 2

Likely form: linear ditches

Within corridor? Only partly

Possible documentary sources: unlikely

Relation to other sites: unknown

Current land-use: grass and cereal crops

Possible damage: plough damage probably minimal

IX Cropmark boundaries (section 3.7)

Geology: solid: SSG; drift: clayey sand with pebbles

Area covered: see extent of cropmarks on Map 2

Likely form: linear ditches

Within corridor? only partly

Possible documentary sources: unlikely

Relation to other sites: unknown

Current landuse: cereal crops

Possible damage: plough damage probably minimal

Parts of the survey which do not show evidence of archaeological activity do not necessarily imply a lack of such activity. There are generally three factors which may be involved:

- a) An area of the survey which is blank may indicate actual absence of archaeological activity.
- b) Archaeological activity may not have created an impact which is detectable through aerial photography, or in documentary sources. Such activity might include small structures or individual finds.
- c) Depositional conditions and current land-use may affect the potential for even substantial sites to be detected from above ground. Land covered by housing, woodland, industrial development or permanent pasture is especially unsuitable.

It is not possible in the present study to point to areas where there might be as yet undetected activity, apart from the conjectured line of the road. Audby Field may contain no archaeological remains, but it is entirely possible that remains which do exist there have not been detected because of the second factor.

5.3 Recommendations

With the above in mind, it would not be appropriate to highlight blank areas for further work, except in the general sense that there may still be historical documentation to be found which will refer to Shipton. One group of material might be located in the Public Record Office in London, which holds the records of the Duchy of Lancaster. Any relevant material concerning the Forest of Galtres is likely to have been deposited here. In addition, it may be possible to trace further records of the Manor of Shipton, if they were transferred with the ownership of the Manor to Beningbrough Hall in the late 17th century. However, such research is likely to be extremely time consuming.

It is assumed here that topsoil stripping will occur over the entire area of the corridor as marked on the survey, and that buried land surfaces, or features cut into underlying subsoil, are likely to be severely damaged or destroyed under such conditions. Lesser impacts may affect any recommendation for further work.

There are clearly three major areas of interest in the survey (ranked I to III in Section 5.2 above), which fall within the corridor of the bypass. It is recommended that all three are, in the first instance, further evaluated by fieldwork:

1. Audby Field (section 3.3)

Geophysical survey, probably gradiometer, of a suitable sample of fields to the north of East Lane within the area bounded by points SE 55355950, SE 55805950, SE 55305900, SE 55905900. Survey to be preceded by intensive fieldwalking to locate any concentrations of finds. Fieldwalking should take place at the optimum time, i.e. 2-3 weeks after harrowing, to allow for weathering. Any finds concentrations would, of course, considerably reduce the size of gradiometer survey necessary to locate settlement features. Features of archaeological significance located by the survey would require assessment by limited trial trenching.

2. Roman road (section 3.9)

Resistivity survey of transects across the conjectured line of the road, at a position most likely to locate the feature within the line of the corridor. If detected, the road would need to be recorded by excavation prior to any destruction.

3. Cropmark enclosures (section 3.6)

Gradiometer survey of a suitable sample of the area covered by the cropmarks to determine the presence of any features within the enclosure, and possible relationship with the conjectured Roman road to the east of Hurn's Gutter. An intensive programme of fieldwalking may point to areas of specific interest. Confirmation of the presence of internal features would probably lead to the need for limited trial trenching to establish date, form, and state of preservation of any archaeological deposits.

4. Possible Roman fort (section 3.8)

Since this feature lies well outside the corridor, there is no recommendation for further evaluation.

5. Cropmark enclosures to south of Shipton Grange (section 3.1)

Since the cropmarks lie outside the corridor, there is no recommendation for further evaluation.

6. Archaeological finds (section 3.4)

The probable location of the finds lies outside the corridor, and there is no recommendation for further evaluation.

7. Ridge and furrow (section 3.5)

There are areas of ridge and furrow which lie within the area of the corridor. However, as much is already known of these features as is possible, and further evaluation is unlikely to provide fresh information. No recommendation for further evaluation.

8. Cropmark boundaries (section 3.2)

Part of this series of boundaries lies within the corridor, but their form does not suggest that there are significant archaeological features associated with them. A watching brief should be undertaken during stripping operations.

9. Cropmark boundaries (section 3.7)

Again, part of the series lies within the corridor, but there is insufficient evidence to warrant more than a watching brief during stripping operations.

Shipton by Beningbrough Bypass

Part Two

First Stage Field Evaluations

Magnetic susceptibility

It is known that in some cases a relationship exists between enhanced magnetic susceptibility and past human activity. Although the precise reasons for this are not clear, it is thought that the magnetic minerals, particularly iron oxides, play a major role in the enhanced magnetic susceptibility. The magnetic susceptibility is measured by a magnetic susceptibility meter (MSM) which is a highly sensitive instrument. The MSM is used to measure the magnetic susceptibility of soil samples. The magnetic susceptibility of soil samples is measured by a magnetic susceptibility meter (MSM) which is a highly sensitive instrument. The MSM is used to measure the magnetic susceptibility of soil samples.

6. Preliminary field evaluations: methods

An initial stage of field evaluations by geophysical survey and fieldwalking were carried out between 11th January 1993 and 12th February 1993.

6.1 Non-destructive evaluation methods

Non-destructive methods are those means of acquiring further information about the archaeological record without destroying that record itself. The collection of soil samples for magnetic susceptibility measurement has been included here as it "destroys" an insignificant amount of topsoil but the "experiment" can be repeated. This is not the case for surface collection of artefacts by fieldwalking, a technique considered to be partially destructive.

a) Magnetic susceptibility

It is known that in some cases a relationship exists between enhanced magnetic susceptibility in the topsoil and past human activity. Although the precise reasons for this relationship remain obscure, it is thought that the association of the use of fire with human occupation plays a major role in the enhancement of this property. Heating converts iron oxides from their slightly magnetic form (haematite) to more strongly magnetised forms (magnetite, maghaemite). Biological organisms associated with humans might also play a part in the conversion of these oxides (Clark, 1990).

Soil samples of c. 100g were collected at points 20m apart on a known grid covering the entire area to be evaluated. Each sample was dried in air at room temperature and reduced to a powder in a mortar and pestle (artificial drying by heating might have produced a falsely enhanced susceptibility). Approximately 100g of each dried sample was then placed in a coil which produced a magnetic field of known frequency and amplitude. The secondary response induced in the soil sample was then measured, allowing the soil susceptibility with respect to the sample's mass to be calculated. In this case the readings given are $\times 10^{-8}$ SI/kg. A contour map was then produced showing variations in magnetic susceptibility over the evaluated area of site.

b) Fluxgate gradiometer survey

This is a means of detecting subsurface features which act like induced magnets in the earth's magnetic field. For a feature to respond the magnetic properties of the soil within it must differ significantly from those of the surrounding soil. This is particularly good for features containing soil, such as pits and ditches, and burnt features such as kilns.

A survey grid was laid out in 20m by 20m squares based on the grid laid out for the magnetic susceptibility survey and measurements (nanoTesla) taken at 0.5m intervals using a Geoscan FM36 fluxgate gradiometer. The traverses were orientated north-south, spaced 1m apart and were surveyed in zig-zag fashion (alternate traverses in opposite directions).

c) Twin-probe resistivity survey

This is the best method for detecting buried solid structures, such as walls and roads, where the electrical conductance of the structure's make-up differs markedly from the surrounding geology and soils.

A survey grid of 20m by 20m squares was laid out perpendicular to the line of the projected Roman road in a field lying to the west of Hurn's Gutter. Measurements were taken at intervals of 1m, on traverses 1m apart.

d) Earthwork survey

Ridge and furrow was rapidly measured so that the average distance between peaks and troughs could be calculated. Where the features stood as earthworks these were measured on traverses perpendicular to the line of ridge and furrow. In other cases the distances were measured from the geophysical survey results.

6.2 Partially destructive evaluation methods

a) Fieldwalking - finds collection

The presence of past human occupation can be identified through concentrations of cultural debris on the surface of a ploughed field where buried deposits have been damaged by ploughing.

Finds were collected from each 20m by 20m grid (in this case, the same grid used for magnetometer survey). Grid numbers 1-18 could not be walked as slurry had been put down for the sugar beet in the field. Grids 91-99 were under pasture and therefore unsuitable for fieldwalking. Each 20m square was divided into six traverses which were walked by separate individuals. The only finds not collected were sherds of 20th-century china. All other objects were retained for further analysis.

Finds were bagged by 20m by 20m grid and, for the purposes of the future archive, each grid number constitutes a context. The finds were then washed and marked with the site code (AUD93) and grid/context number. Following this they were weighed and counted by category. These categories are discussed with the results.

7. Results

7.1 Audby Field (Figs 1 and 2a)

a) The magnetic susceptibility survey (Colour Plot 1)

For the purposes of plotting the results of the magnetic susceptibility survey, individual high readings have been discounted and anomalous high responses removed by "spike removal". Therefore, Colour Plot 1 indicates general changes in levels of magnetic susceptibility across the site.

On the basis of the magnetic susceptibility survey the site can be divided into two halves. The eastern half displays responses on average 20×10^{-8} SI/kg less than the western half. This probably reflects a change in recent land use, and certainly marks the boundary between higher well drained land and lower boggy or waterlogged ground. Land which has only recently been subject to cultivation tends to have a lower magnetic susceptibility than land which has been ploughed over a relatively long period of time. Another noticeable feature of the magnetic susceptibility results is alternate high and low striations running E-W across the site. These run

down slope, and fall on the same alignment as the medieval field layout.

One explanation for the linearity displayed in the results is that soil with high magnetic susceptibility has migrated both up and down the slope during ridge and furrow formation. If so, then any magnetically enhanced soil displaced in this manner is either contemporary with this cultivation or pre-dates it.

The following discrete areas of interest were identified (Colour Plot 1):

- A) A region of enhanced susceptibility measuring 35×10^{-8} SI/kg. This has been displaced linearly eastwards in the manner previously mentioned. Unfortunately the field was a quagmire and no further investigation could be realistically carried out.
- B) A distinct region of enhanced magnetic susceptibility peaking at about 45×10^{-8} SI/kg. This was a very significant set of responses against a background of 15×10^{-8} SI/kg and required further investigation.
- C) A patch of moderately high susceptibility, the significance of which becomes apparent in the light of the fieldwalking results.
- D) An area with the most enhanced magnetic susceptibility in the survey area, occupying the south-western extremity of the site, c. 55×10^{-8} SI/kg.

b) The fluxgate gradiometer survey (Figs 2a, 2b and 2c)

An area of c. 4 ha was surveyed using the fluxgate gradiometer. Areas of ridge and furrow can be seen in the survey results from the western half of the site.

Two other features are predominant:

- i) A feature associated with anomaly B on the magnetic susceptibility survey (see Colour Plot 1). This is shown in Figures 2b and 2c. The high response is suggestive of burning, and may represent a feature associated with early industrial activity.
- ii) A possible circular feature to the west of Area C on the magnetic susceptibility survey (see Figs 2b and 2c), requiring further investigation to confirm its presence and form.

c) Fieldwalking (Colour Plots 2 - 5)

All the fieldwalking finds have been catalogued by weight and number in Appendix 2. Four categories of finds from the site were of potential archaeological significance:

- i) Worked flint (Colour Plot 2)
A catalogue of this material is included as Appendix 3. Only flint which has been worked by human hand is included on the distribution map (Colour Plot 2). A total of 90 pieces were examined, of which 62 were struck flint. The 28 gravel fragments are probably natural to the site, deposited there by fluvio-

glacial activity. Much of the unpatinated flint is grey in colour, sometimes with white specks or mottles, which would be consistent with an original source on the Wolds. A dark red/dusky flint could be from boulder clay on the Wolds. At least one other, unknown, source of flint is represented: a pale brown flint.

The ratio of tools to waste flakes is 8:42, suggesting a very careful use of resources. Although all the flint belongs to the prehistoric period, two pieces can be more precisely identified. A transverse arrowhead from the eastern part of the site can be dated to the Late Neolithic (c. 2500-2000 BC), whilst one of the cores is quite small and could be Mesolithic in date (c. 10000-8000 BC).

The main distribution of worked flint is concentrated on the high, well-drained land to the north-west of the investigation area. This would be the most probable location for prehistoric occupation, if it occurred in this area.

The possible circular anomaly (Fig. 2c) located on the gradiometer survey may be associated with the flint concentration.

ii) Pottery: medieval and earlier (Colour Plot 3)

Only three sherds of pre-medieval pottery were found. Two of these were Roman in date and were so abraded that they must have been transported a considerable distance before deposition on the site. One sherd of Anglo-Saxon pottery, which was recovered on the higher ground, is probably residual and therefore insufficient evidence from which to infer occupation of that period for this site.

Medieval pottery dating from the 12th-15th centuries was examined by Dr C. G. Cumberpatch. The relatively low density implies a distribution due to agricultural practice rather than occupation. A slightly larger proportion of the material occurs on the higher, well-drained ground.

iii) Burnt material (Colour Plot 4)

This material was divided into three types: fired clay, slag and burnt stones. Fired clay was by far the most abundant material and it should be noted that the date of this material is unknown. There is a slight concentration of burnt clay to the south of the magnetic susceptibility area B, with the remaining material showing a general random spread over the fields. This concentration of material might well be related to the anomaly located by geophysical survey (Colour Plot 1; Figs 2b and 2c).

iv) Tile (Colour Plot 5)

The tile, all of an unknown date, was counted and weighed and the distribution of the material plotted (Colour Plot 5). None of the concentrations of tile are significant.

7.2 The crop-mark site (Figs 3a and 3b)

a) Fluxgate gradiometer survey

An area of 2ha was surveyed on land to the south and east of Hurn's Gutter. Cropmarks (interpreted as a series of field boundaries and enclosures of unknown date and origin) had previously been identified from aerial photographs.

The generally low magnetic responses over this area (-1nT to +1nT) made identification and interpretation of possible features difficult. However several possible linear and curvilinear anomalies have been highlighted (Fig. 3b). Further anomalies, such as the enclosures mentioned above (Section 3.6), may be present but remain unresolved due to the low magnetic responses.

b) Surface finds

Although this area was not systematically fieldwalked, several pot sherds were found during the course of the gradiometer survey. Sherds identified as prehistoric, Iron Age and Roman were found in grids 33 and 34 (see Fig. 3a), while an additional Iron Age sherd was found in Grid 41. A piece from a bronze vessel was found in the south of the field, outside the survey area.

7.3 The possible Roman road (Figs 4a, 4b and 4c)

a) Resistivity survey

Resistivity measurements were taken at 1m intervals using a Geoscan RM4 resistivity meter with a DL10 data logger across a strip of twelve grids orientated NW-SE (see Fig. 4a). It was thought that this sample would reveal the position and orientation of the supposed Roman road between Shipton and Skelton. The sample was later increased to sixteen grids in order to investigate the patches of water-worn pebbles and clay which had been ploughed up from the subsoil in this area (they were not observed elsewhere across the sample area).

Two areas of particularly high resistance can be seen in the data (Fig. 4c). The most southerly of the two could possibly represent the Roman road. An anomaly running north/south through the postulated Roman road, therefore post-dating it, is also apparent. Its position and alignment corresponds with a field boundary marked on the first edition Ordnance Survey map of 1850 (see Appendix 1). The northernmost area of high resistance is probably due to the underlying geology.

7.4 Ridge and furrow measurement

Ridge and furrow was measured in three fields (see Fig. 1) so that the average distance between peaks and troughs could be calculated. The raw data is presented in tabular form in Appendix 4.

In Field 1 only 0.15m-0.20m of undulation was extant. The ridge to ridge distance measured 7.3m on average and would probably be too narrow for an early medieval date.

The morphology and topography was best preserved in Field 2 where the earthworks survived to a height of 0.5m. Here the ridges were pronouncedly S-shaped and probably derive from the use of a mouldboard plough during the medieval period (Section 3.5). An average ridge to

ridge distance of 11.2m implies an earlier rather than later date for these features.

In Field 3 the ridge and furrow was barely visible and it was therefore not possible to take measurements in this field.

8. Discussion and Recommendations

8.1 The implementation of the recommended first stage of field evaluation (section 5.3; 1-3), employing a combination of geophysical techniques and fieldwalking, has provided further evidence of the likely archaeological potential within the proposed road corridor. Moreover, the results have been able to identify discrete areas where relatively high magnetic susceptibility correlating with high artefact distributions may reasonably be considered as areas of higher archaeological potential.

8.2 In some respects, however, the results have proved to be rather inconclusive. In part this has been due to a generally low level of magnetic susceptibility in the soil of the area. Consequently, this has resulted in a poor level of resolution in detecting subsurface features using the fluxgate gradiometer. Other detrimental factors have been the possible nature of the solid geology which has created ambiguity in the interpretation of the resistivity results, and a combination of waterlogging and slurring which prevented the completion of the fieldwalking survey on the Audby Field site.

8.3 In the light of both the new evidence and the areas of unresolved archaeological potential the following recommendations are proposed as a second stage of evaluation by watching brief. This work would be carried out as part of an existing programme of trial pit excavations for engineering purposes, along the preferred road corridor.

8.4 Due to the apparently high archaeological potential throughout most of the corridor it is proposed that an archaeological watching brief be carried out during the excavation of all trial pits. In the majority of cases the desired trial pit positions for engineering purposes will serve as an adequate random archaeological sample. Nevertheless, there should be a requirement for these pit locations to be accurately located for future reference, and, where possible, slight adjustments in locations in order that medieval ridge and furrow plough strips may be physically investigated. The most appropriate areas for the latter would be to the north and north-west of the sewage works, in the vicinity of grid references SE 558586 and SE 559584 respectively. However, in the areas that have already received field evaluation it is recommended that, in certain instances, trial pit locations are adjusted (or supplementary pits introduced) in order that their locations correspond to actual areas of discrete high archaeological potential, or detected subsurface anomalies. In such cases it is advised that these trial pits are actually positioned by the archaeologists. The requirements for the trial pits in these areas are discussed in the context of the existing archaeological data below.

8.5 Audby Field (Fig. 1)

8.5.1 From further scrutiny of cartographic sources it has become apparent that the *Audby Field* on the 19th-century maps is just the northern half of a symmetrical elliptical enclosure (sections 3.3 and 4). Such an enclosure is typical of what some historians have referred to as a 'magnate farm' (Prof. C. Dyer, pers. comm.), which is clearly respected by all subsequent land divisions or route ways around it. It seems likely that the *Audby Field* was just one component of the land associated with this early enclave and that any early settlement within it was probably to the east of the church, centred on East Lane, near the middle of the enclosed area. It is further conjectured that any early settlement probably migrated to its present position, perhaps with the church being a common pivotal point, some time in the early medieval period, in order to exploit the economic benefits of lying on the main York road.

8.5.2 The above interpretation may be quite significant in explaining the trend towards relatively high magnetic susceptibility readings in the south-western area (and southern edge) of the evaluation area (Colour Plot 1). It is recommended that two trial pits are located generally within this area in the vicinity of grid reference SE 554592.

8.5.3 It would be advantageous if two pits were located where the significant correlation of relatively high magnetic susceptibility with flint occurred (colour plots 1 and 2), centred around grid reference SE 556593 (on the actual line of the proposed bypass). The lack of any distinct features revealed by the gradiometer survey means that the exact location of these pits is not critical and that the proposed locations for engineering purposes will suffice for the purposes of the watching brief.

8.5.4 Two magnetic anomalies located by the gradiometer survey (Section 7.1b; Fig. 2c), the possible area of industrial activity and the possible circular feature, will require further evaluation by trial excavation in order to establish their form, date and function. Although there are engineering trial pits proposed in the close vicinity of these features, it is recommended that the actual siting of the pits be determined by the archaeologists so that the precise nature of the features causing these anomalies can be ascertained.

8.6 The Cropmark Site (Fig. 3b)

8.6.1 The full extent of this cropmark complex is unknown, though it seems highly probable that the preferred bypass route will cut through it. Disappointing gradiometer results (Section 7.2a) have not radically enhanced the significance criteria for the site and it remains essentially a site of unknown form, date and function. Twelve trial pits for engineering purposes are already proposed for the general area, mainly to the east of the survey area, and archaeological inspection of these may provide further information regarding the eastern extent of the complex. At present there is not enough information to specify a particular trench location along the bypass route in this area.

8.6.2 However, it is further recommended that four supplementary trenches be excavated across the lines of the few known linear magnetic anomalies identified within the survey area, in order to establish, where possible, their form, date and function. In this instance the excavations will have to be in the form of mechanically excavated slit trenches, between 10m and 20m long, 1.2m wide, to a depth of no more than 1.2m, and located and orientated by the

archaeologists. The nominal trench positions are indicated on Figure 3b. This exercise would not necessarily coincide with the engineering works and might be better organised as a separate phase of full trial excavation which would then also be able to take the results of the watching brief into account.

8.7 The possible Roman road (Figs 4b and 4c)

8.7.1 The lack of conclusive results from the resistivity survey (Section 7.3a) demands that the most southerly high resistance anomaly is further investigated through the slight relocation of an already proposed trial pit in this area (the exact location of this pit must be determined by the archaeologists in order that the postulated line of the 'road' anomaly is targeted accurately).

9. Specification for trial pit evaluations

9.1 It is recommended that the following procedures be adopted by the consulting engineers and archaeological contractors in pursuance of the archaeological objectives.

- i) There shall be a full and regular liaison between the engineers and archaeologists in order that the objectives of both parties are clearly understood and most effectively fulfilled.
- ii) The archaeological component of the work shall first be approved by the North Yorkshire Sites and Monuments Record.
- iii) The works shall be effected with the full prior consent of the landowners, who shall also be fully apprised of their rights of ownership to any archaeological artefacts recovered.
- iv) The archaeological contractors shall make contingencies in their costings for the storage, conservation and future curation of any finds that may be recovered during the work through consultation with the appropriate museum (subject to owners relinquishing ownership).
- v) The engineers shall provide the archaeological contractors with a programme of works and provide at least one week's notice of their intention to commence each part of that programme.
- vi) The archaeological contractors shall inform the North Yorkshire Sites and Monuments Record, with adequate notice, of their intention to start on-site investigations, in order that the latter may make arrangements to monitor the archaeological work.
- vii) The trial pits, measuring 2m by 1m, that occur outside the areas already defined as being of high archaeological potential, shall only require inspection by an archaeologist prior to being backfilled. However, trial pits within the areas of high archaeological potential (including the areas of ridge and furrow; see

Section 8.4) shall be mechanically stripped of their topsoil down to natural, or the first archaeological horizon, using a toothless bucket and under the supervision of an archaeologist. Archaeological inspection shall be facilitated by the engineers and any necessary recording or sample excavation carried out without delay by the archaeologists, prior to the trial pit being excavated to its full required depth.

- viii) With respect to trial pits in areas of known/suspected high archaeological potential in specific areas (i.e. Audby Field, Cropmark Site, Roman Road, Ridge and Furrow), the initial trial pit may be enlarged at the request of the archaeologist in order to clarify the nature of the archaeological deposits. Such extensions will not exceed 20m² in area.
- ix) All confirmed archaeological deposits (below the topsoil) should only be manually excavated by the archaeological contractor within trial pits or trenches which specifically serve an archaeological purpose, unless prior agreement for mechanical excavation is approved with the North Yorkshire Sites and Monuments Record. Manual excavation shall not proceed to a depth greater than 1.2m in any event.
- x) The archaeological contractors shall provide a full and detailed report of their findings in accordance with the procedures laid down in English Heritage's *Management of Archaeological Projects* (1991) document. A draft report shall be supplied to the consultant engineers within one month of the completion of the on-site work.

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Source not examined

Hull Museum Publications 1940 (The Featherstone Collection)

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Preliminary Archaeological assessment

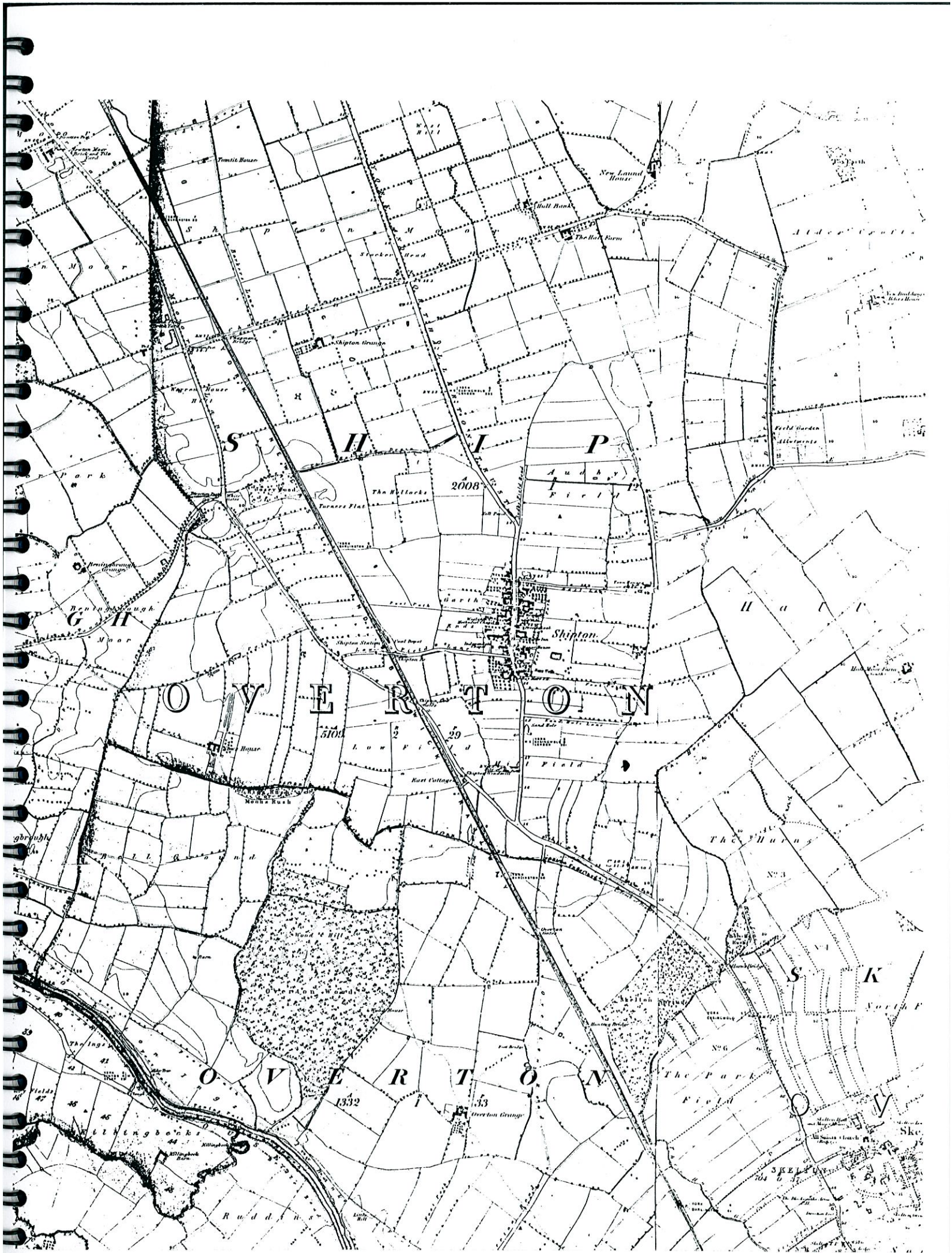
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Appendix 1

The Ordnance Survey 1st Edition 6" map (1850)



Shipton Bypass Archaeological Evaluation
The Ordnance Survey 1st Edition 6" map (1850)

Appendix 2

Concordance Table of Fieldwalking Data

GRID	Medieval Pot		Tiles		Fired clay		Flint		Burnt stone		Slag		Miscellaneous	Left over weight	Find mass	TOTAL MASS
	No.	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight				
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62.8	
20	5	24.6	0	0	0	0	0	0	0	0	43	Pb 10.6	7.5	231.2	238.7	
21	3	92.7	3	127	3	70	0	0	1	5	2.7	Pb 7.9	65	297.4	362.4	
22	2	59	3	197	2	128.5	1	6.9	1	1	0	0	31.4	392.4	423.8	
23	2	40	3	58	0	0	0	0	0	0	282	0	55.4	380	435.4	
24	1	20	1	89	0	0	0	7.2	0	0	0	Ae	33	116.2	149.2	
25	1	3.8	0	0	3	205	0	0	0	0	0	0	24.1	208.8	232.9	
26	2	4.8	1	99	1	7.4	1	1.6	0	0	1.5	0	175.5	114.3	289.8	
27	1	8.5	3	124	2	55	0	0	0	0	0	0	57.7	187.5	245.2	
28	1	36.2	0	0	3	28	0	0	0	0	0	0	88.7	64.2	152.9	
29	3	43.7	0	0	0	0	0	0	0	0	7.9	0	36.3	51.6	87.9	
30	2	10.1	1	19.7	3	50.1	1	83.4	0	0	0	0	72	163.3	235.3	
31	2	7	0	0	3	61	1	2.5	0	0	0	0	9.2	70.5	79.7	
32	2	15	0	0	0	0	1	11.5	0	0	26	Fe	59.7	52.5	112.2	
33	1	9.8	0	0	2	5.3	1	0.5	0	0	43.6	0	97.2	59.2	156.4	
34	5	36.8	0	0	2	7.1	0	0	0	0	3.5	Roman 1.4	13.2	47.4	60.6	
35	7	30.5	6	357	2	78.7	1	0.3	0	0	2	0	17	468.5	485.5	
36	3	18.3	1	55.4	1	13.1	6	9.2	0	0	29	0	50	125	175	
37	2	22.9	3	99.8	3	39.1	3	1.3	0	0	0	0	12.2	163.1	175.3	
38	2	27.5	0	0	6	117.2	2	3.7	0	0	4.5	0	103.7	152.9	256.6	
39	2	3.8	5	105.2	1	28.3	4	5.3	0	0	0	volcanic	89	142.6	231.6	
40	7	32.8	0	0	2	57.5	5	7.6	0	0	15.2	0	94	113.1	207.1	
41	4	110.9	0	0	0	0	4	20.9	1	74.2	15	0	67.2	221	288.2	
42	3	22.9	0	0	4	78	2	5.7	0	0	0	volcanic	130	106.6	236.6	
43	2	18.6	0	0	0	0	0	0	1	31	0	0	93	49.6	142.6	
44	0	0	2	96.8	2	39.7	0	0	1	78.7	0	0	134.8	215.2	350	
45	2	12.4	2	60	5	81.1	0	0	0	0	0	0	12.8	153.5	166.3	
46	9	67.9	1	8.4	4	75.9	3	5.5	0	0	0	0	40	157.7	197.7	
47	9	29.6	0	0	1	13.8	4	18.6	0	0	12.7	Saxon, Stone 181	0	74.7	74.7	
48	2	18.7	2	64	0	0	2	22.8	0	0	0	0	56.4	105.5	161.9	
49	5	26	2	68	1	53	2	4.1	0	0	0	0	76.1	151.1	227.2	
50	5	47	2	30	3	62.7	2	1.2	0	0	0	0	29.3	140.9	170.2	
51	8	57	0	0	1	17.6	1	1	0	0	2.1	0	10.9	77.7	88.6	
52	3	6.9	0	0	0	0	2	4.5	0	0	0	0	32	11.4	43.4	
53	5	38	2	77	2	130	3	4	0	0	0	0	35.4	249	284.4	
54	5	30.4	1	22	0	0	0	0	0	0	0	0	13.1	52.4	65.5	
55	3	16.1	1	39.3	4	61.5	1	1	0	0	0	0	22.7	117.9	140.6	
56	5	33.9	1	22	0	0	0	0	0	0	0	0	32.2	55.9	88.1	
57	4	43.6	5	134	2	84.4	2	11	0	0	16.4	0	74	289.4	363.4	
58	1	16.3	2	190	0	0	0	0	0	0	0	0	78.9	206.3	285.2	
59	5	29	5	196	0	0	1	1.9	0	0	0	0	75.8	226.9	302.7	
60	6	16.8	2	96.9	0	0	0	0	0	0	0	0	139.7	113.7	253.4	
61	2	11.3	2	51	1	4.6	0	0	0	0	0	Roman 9g	0	66.9	66.9	

GRID	Medieval Pot		Tiles		Fired clay		Flint		Burnt stone		Slag		Miscellaneous	Left over weight	Find mass	TOTAL MASS
	No.	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight				
62	6	26.8	2	24.8	0	0	1	4.4	0	0	0	0	0	46.4	56	102.4
63	3	11.6	0	0	0	0	0	0	1	10.2	0	0	0	45	21.8	66.8
64	3	15.8	0	0	1	328	0	0	1	14.5	0	0	0	44.6	358.3	402.9
65	1	9.1	0	0	0	0	0	0	1	11.6	0	0	Fe	84.3	20.7	105
66	2	12.7	2	57	1	47	0	0	1	9.5	0	0	0	42.9	126.2	169.1
67	2	35	5	115.7	1	26.3	0	0	0	0	0	0	0	123.6	177	300.6
68	2	10.4	0	0	5	100.7	0	0	2	6.4	0	0	0	46.1	117.5	163.6
69	5	34.2	5	188.4	11	202	0	0	1	9	0	0	0	51.4	433.6	485
70	3	8.4	4	209.9	1	63.1	1	2	1	10.7	0	0	0	1.7	294.1	295.8
71	3	24.7	3	178.8	1	116.6	0	0	0	0	0	0	mould, Roman stamped ware	87.7	320.1	407.8
72	3	23.6	3	177.4	1	93.8	0	0	0	0	1	137.9	0	45	432.7	477.7
73	0	0	4	158.7	0	0	0	0	0	0	0	0	0	26.4	158.7	185.1
74	0	0	7	295.2	5	102	0	0	1	17.4	0	0	0	168.2	414.6	582.8
75	0	0	2	108	2	148.2	0	0	0	0	0	0	0	108	274.9	382.9
76	4	20	4	120.9	2	20.1	0	0	0	0	0	0	0	108	161	269
77	3	16.3	5	395	4	120.4	1	4.5	0	0	0	0	0	77.9	536.2	614.1
78	9	51.8	2	33	2	45	0	0	0	0	0	0	0	296.7	129.8	426.5
79	5	33.9	3	112	0	0	0	0	0	0	0	0	0	40	145.9	185.9
80	4	30.4	0	0	0	0	0	0	0	0	0	0	0	10	30.4	40.4
81	3	7.8	1	95.7	2	56.7	2	21.9	0	0	0	0	0	3.2	182.1	185.3
82	0	0	1	40.9	3	30.8	1	0.1	0	0	0	0	0	100.9	71.8	172.7
83	1	36.1	2	59.8	1	22.6	0	0	0	0	0	0	0	8.8	118.5	127.3
84	0	0	1	43.6	3	53.5	3	11.4	0	0	0	0	0	65.3	108.5	173.8
85	3	14.4	2	0	2	14.1	1	0.6	0	0	0	0	0	51.8	29.1	80.9
86	1	10.2	2	219.2	0	0	0	0	0	0	2	10.7	11thC sherd	15.1	240.1	255.2
87	0	0	0	0	3	26.8	1	0.7	0	0	2	42	0	5.1	69.5	74.6
88	0	0	2	96.6	2	50.6	0	0	0	0	0	0	0	7.3	147.2	154.5
89	1	3.8	3	60	0	0	1	7	0	0	1	1	0	40	71.8	111.8
90	7	81.7	0	0	1	13	0	0	0	0	0	0	0	39	94.7	133.7
TOTAL	218	1719.8	125	5277.1	126	3498.5	70	295.8	14	279.2	24	717.4		4199.3	11787.8	15987.1
Mean	3.07	24.22	1.76	74.33	1.77	49.27	0.99	4.17	0.20	3.93	0.34	10.10		59.15	166.03	225.17

Key:
Roman = Pottery of Roman date
Saxon = Pottery of Saxon date
Pb = Lead object

All weights in grams

Appendix 3

Flint Catalogue

Appendix 3 Flint catalogue

P, S and T refer to the amount of cortex (Cort.) surviving. A primary (P) flake has c. 50% cortex, a secondary (S) flake has c. 5% often on the proximal or distal end and a tertiary (T) flake has no surviving cortex. The length (L), breadth (B) and thickness (Th) of the flint are given in millimetres.

Grid	Type	Cort.	Colour	L	B	Th	Description
19	Burnt scrap	S	-	15	13	6	Small fragment, flake scars on two sides, rest burnt
22	Core	S	patinated white	17	17	16	At least 6 flake scars, initially worked from one platform but getting more random
24	?flake	S	v. dark/dark grey	31	21	8	Cherty flint, recently shattered but possibly worked in antiquity
	Fragment		Patinated white/grey	19	14	7	No diagnostic signs
25	Stone						
26	?Limestone						
	Flake	S	patinated white	24	16	3	Six flake scars on dorsal, damage or possible retouch on right
28	Ironstone			29	16	8	
	Chert	-	grey	24	25	8	Possibly worked
	Gravel	-	Pat. green/brown	45	33	20	Abraded river gravel with deep patination
30	?Core	-	Grey/white	55	42	3	Grey with white mottles, white cortex, 3 or 4 flake scars, ?pecking on cortex poss. from use as hammer stone, natural damage to one edge
31	Flake	T	Pat. light grey	21	17	5	Scars on dorsal, hinge fracture
	Gravel	-	-	50	26	20	Battered river gravel pale grey/white patination some iron staining
32	Gravel	-	Pat. grey	21	17	10	-
	Scraper	-	Reddish brown/pink	30	30	13	Natural piece with invasive retouch to form round scraper, subsequent damage to edges
33	Flake	T	pat. light grey	12	9	4	-
	Gravel	-	-	20	16	15	-
35	Fragment	-	-	13	12	5	-
36	Borer	T	Dusky red,translucent	35	18	2	Inverse retouch on left and proximal to create a point and a scraping edge, butt worked off, proximal broken
	Flake	S	Patinated white	15	17	2	Butt missing, hinge fracture

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36	Flake	T	Patinated white	11 8 2	Piece of debitage
	Stone	-	-	13 14 6	Fragment, ?not flint
	Gravel	-	Patinated white	17 15 7	Possibly heat or cold shattered
	Gravel	-	Patinated white	26 8 6	Naturally shattered, certainly deeply patinated
	Gravel	-	-	27 16 11	Amorphous shape, would be useless to flake
	Gravel	-	-	20 10 7	As above
	Gravel	-	-	14 9 6	Too small to be of use
37	Flake	T	Patinated white	10 14 3	-
	Flake	T	Patinated white	12 18 3	Butt broken off
	Fragment	T	Patinated white	7 11 4	Possibly debitage
38	Fragment	S	Patinated white	21 9 8	Possibly debitage
	Gravel	-	-	20 15 6	Too small to use
39	?Flake	P	Patinated white	40 39 12	Could have been struck
	Flake	T	Clear, translucent	15 12 3	Distal end of a flake or blade, snapped off butt, translucent
	Gravel	-	-	22 12 6	Too small to use
	?Flake	T	Patinated white	16 16 4	Possibly debitage, possibly natural shatter
	Scraper	T	Patinated white	17 15 4	Snapped distal end of flake with retouch on distal end possibly on left side
40	Core	S	Dark grey	15 23 13 8	Flake scars
	Flake	T	Patinated white	18 8 4	-
	Flake	T	Patinated white	8 6 1	-
	?Flake	T	patinated white	12 11 10	Possible debitage
	Gravel	-	Patinated grey	19 12 8	Too small to utilise
41	Core	T	Olive brown/dark grey	30 30 12	Many flake scars, possibly re-used as scraper but much damage along edges
	Flake	P	Grey mottled white	25 40 15	Possible attempted use as core
	Flake	T	Light grey/white	22 11 5	-
	?Flake	T	Light grey	21 13 6	Possible flake much damaged
	Gravel	-	-	23 22 10	-
	Gravel	-	-	23 8 8	-
42	Flake	T	Patinated light grey	17 16 6	-
	Flake	S	Olive brown	18 25 11	-
46	Burnt flint	T	White	18 21 5	Debitage later burnt
	Struck frag.	T	Grey/white	18 9 6	-
	Gravel	-	-	20 17 6	Has natural rings of percussion
47	Notched flake	T	Grey	41 20 5	Proximal end retouched to make a notch, possibly used on a hard material

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47	?Utilised flake	T	Pale olive/white	23 21 11	Has scars of flakes on dorsal, ?retouch around edges but also v. heavy damage
	Struck frag	T	Grey/white	13 12 9	Debitage
	Gravel	-	-	40 15 14	-
	Gravel	-	-	37 23 23	-
	Stone	-	-	65 53 32	Unknown type of hard stone, ovoid with one end ?pecked away
48	Gravel	-	-	55 23 18	Has concoidal features suggesting flaking but they straddle the edge and are prob. natural
	?Gravel	-	-	20 17 5	-
49	Scraper	S	Patinated	20 22 5	Retouch on distal and right side to make 'thumb-nail' scraper
	Burnt flint	S	Grey	15 11 5	Struck flake with cortical platform subsequently burnt causing loss of distal end
	Gravel	-	Yellow	29 21 6	Heavily patinated river flint
50	Flake	T	Grey	12 13 7	Debitage
	Burnt flint	T	-	15 11 4	Small scrap, possibly struck
51	Flake	S	Grey	12 12 7	Debitage, possibly heat affected
52	Core	S	Grey	19 16 7	Scars of 4 flakes struck from one platform, scar of 1 struck in opposite direction
	Flake	S	L. brown/white specks	20 15 4	Damage on right edge
53	?Core	T	White	19 14 7	Three or four flake scars, platform in bad state
	Scraper	T	V. pale brown	20 18 4	Retouch on left and right sides and on distal end, making a sort of square horseshoe scraper
	Burnt flint	T	-	13 11 7	Struck and then burnt, shattered
55	Flake	T	White/v.pale brown	28 10 3	Damage on left edge
57	Flake	S	Brown/v.pale brown	28 11 4	-
	Core	T	V. pale brown	21 29 18	Four or five flake scars, was abandoned ?as poor quality
59	Core	T	Grey/pale grey	21 9 9	Small flakes/blades being struck, ?Mesolithic
60	Gravel	-	-	19 15 6	Too small and patinated to be of use
62	Flake	T	Dark reddish brown	35 20 3	Damage on right side, distinctive flint
	Gravel	-	-	20 13 13	?Natural damage rather than flaking
65	Gravel	-	-	13 10 4	Small amorphous piece of flint that was not worth picking up
70	Limestone	-	-	21 20 5	-
77	Burnt flint	S	Patinated white	27 23 6	Piece of struck and then burnt flint

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81	Arrowhead	T	Dark greyish brown	42	40	2	Translucent flint. Retouch and inverse retouch on left and right sides to make transverse arrow-head. Clarke's type ?. Later retouch on distal end to make scraper
	Gravel	T	Grey	37	25	16	Possibly had flake or two struck from it but also there are damage flakes
82	Flake	S	Patinated white	12	12	3	-
	Gravel	-	-	20	7	7	Small piece of gravel
83	?Flake	S	Patinated white	12	7	4	Possible piece of debitage
84	Utilised flake	?S	V. pale brown	32	27	9	Irregular flake with invasive retouch to make 13mm scraping edge, some use damage
	Burnt flake	T	Grey	15	13	6	Flake with retouch on left side, subsequently burnt and shattered
	Flake	T	Grey	14	15	1	Hinge fracture
85	Burnt flint	-	Grey	30	27	15	Probably used as a core then burnt
	Burnt flint	T	Patinated grey	17	7	4	Small struck flake later burnt
88	Scraper	S	Light yellowish brown	16	15	7	retouch on distal end of flake, some use damage
	Gravel	-	-	22	16	5	-
	Gravel	-	-	20	14	8	-
89	Flake	T	White	35	22	9	Struck from poor quality flint

Appendix 4

Ridge and Furrow Data

**Shipton Bypass Archaeological Evaluation
Ridge and Furrow Measurements (see Fig. 1)**

Field 1

	Distance (m)		Distance (m)
ridge1-furrow1	2.4	ridge1-ridge2	6.2
furrow1-ridge2	3.8	ridge2-ridge3	8.8
ridge2-furrow2	3.5	ridge3-ridge4	6.4
furrow2-ridge3	5.3	ridge4-ridge5	8.6
ridge3-furrow3	3.2	ridge6-ridge7	7.4
furrow3-ridge4	3.2	ridge7-ridge8	8.2
ridge4-furrow4	4.3	ridge8-ridge9	8.0
furrow4-ridge5	4.3	ridge9-ridge10	6.7
ridge5-furrow5	4.3	ridge10-ridge11	6.9
		ridge11-ridge12	6.1
ridge6-furrow6	3.0	Mean	7.3
furrow6-ridge7	4.4		
ridge7-furrow7	4.4	furrow1-furrow2	7.3
furrow7-ridge8	3.8	furrow2-furrow3	8.5
ridge8-furrow8	4.2	furrow3-furrow4	7.5
furrow8-ridge9	3.8	furrow4-furrow5	8.6
ridge9-furrow9	3.7	furrow6-furrow7	8.8
furrow9-ridge10	3.0	furrow7-furrow8	8.0
ridge10-furrow10	3.3	furrow8-furrow9	7.5
furrow10-ridge11	3.6	furrow9-furrow10	6.3
ridge11-furrow11	3.5	furrow10-furrow11	7.1
furrow11-ridge12	2.6	Mean	7.7
Mean	3.9		

Field 2

furrow1-ridge1	2.8	ridge1-ridge2	12.3
ridge1-furrow2	7.5	ridge2-ridge3	10.2
furrow2-ridge2	4.8	ridge3-ridge4	13.1
ridge2-furrow3	6.0	ridge4-ridge5	10.8
furrow3-ridge3	4.2	ridge5-ridge6	10.1
ridge3-furrow4	6.4	ridge6-ridge7	10.8
furrow4-ridge4	6.5	ridge7-ridge8	11.0
ridge4-furrow5	5.2	Mean	11.2
furrow5-ridge5	5.6		
ridge5-furrow6	5.6	furrow1-furrow2	10.3
furrow6-ridge6	4.5	furrow2-furrow3	10.8
ridge6-furrow7	5.3	furrow3-furrow4	10.6
furrow7-ridge7	5.5	furrow4-furrow5	11.7
ridge7-furrow8	5.6	furrow5-furrow6	11.2
furrow8-ridge8	5.4	furrow6-furrow7	9.8
ridge8-furrow9	4.8	furrow7-furrow8	11.1
Mean	5.4	furrow8-furrow9	10.2
		Mean	10.7