

Alison Deegan

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| SNY | 731 |
| ENY | 383 |
| CNY | 1832 |
| Parish | 8045 |
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8045
NYS 731
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Rec'd 15/5/01

AIR PHOTO MAPPING,

INTERPRETATION AND

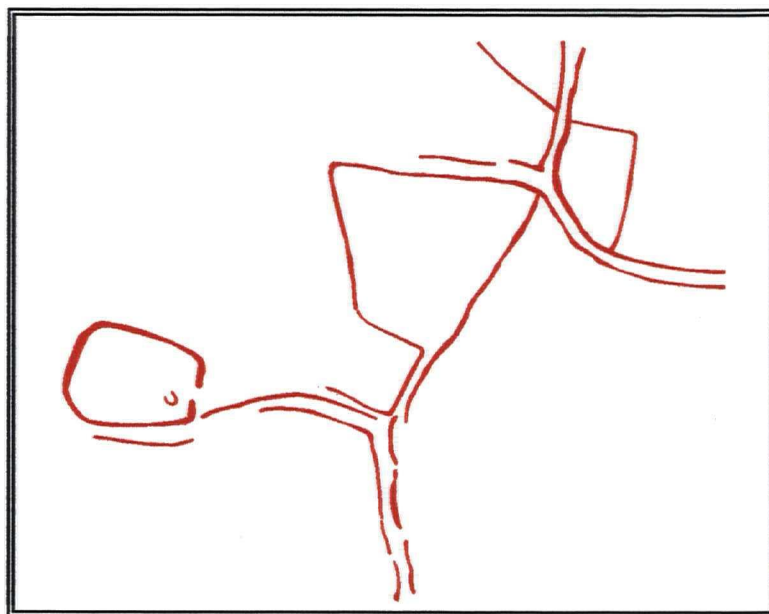
ANALYSIS FOR ALL

ARCHAEOLOGICAL APPLICATIONS

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Air photo mapping and interpretation of land around
Barnsdale Bar Quarry Southern Extension, Norton,
South Yorkshire

centred around 451390,414090



Archaeology

October 2000

Project number 00/01006

Undertaken by Alison Deegan BSc MIFA

Commissioned by:

Archaeological Services WYAS
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Morley
Leeds
LS27 0UG

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I GAZETTEER OF ARCHAEOLOGICAL FEATURES

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INSIDE BACK COVER X1 FLOPPY DISK CONTAINING *BARNSDALE.DWG* FILE.

1. INTRODUCTION AND BACKGROUND

1.1 CLIENT DETAILS

- 1.1.1** This air photo investigation was commissioned by Mr Paul Wheelhouse, Archaeological Services WYAS in September 2000.

1.2 SPECIFICATION

- 1.2.1** The client required the mapping of levelled and upstanding archaeological features visible on the available air photographs to 1:2500 scale accuracy and detail.

1.3 THE SURVEY AREA

- 1.3.1** The survey area of 9km² is centred close to the mutual borders of South, North and West Yorkshire on the A1 at Barnsdale between SE495 125 and SE525 155 (fig. 1.).

1.4 THE GEOLOGY, SOILS AND LAND USE OF THE SURVEY AREA

- 1.4.1** Differences in soils and geology can influence the appearance of crop marks. The crop marks delineating buried and levelled archaeology are the effect of differential growth between that on archaeological deposits and that on surrounding undisturbed ground. These marks are clearest when there is a considerable difference in matrix, water and nutrient availability between the archaeological and natural deposits. These responses can be seen most clearly in large areas of homogenous, fast-growing plants such as cereal crops, but grass and root crops can be similarly effected.

- 1.4.2** The survey area lies on Magnesian Limestone (British Geological Survey 1979). The soils are of the well-drained and calcareous ABERFORD 511a soil associations (SSEW 1983).

- 1.4.3** The survey area lies between the River Went and The Skell, both tributaries of the River Don. This is a landscape of gentle hills and dry valleys with the highest ground, at no more than 70-80 metres OD, near the centre of the survey area, falling to The Skell in the south-west. It is surrounded by villages and small towns such as Upton, North and South Elmsall in West Yorkshire, Skelbrooke, Skellow, Campsall and Norton in South Yorkshire and Kirk Smeaton in North Yorkshire. However modern settlement within the survey area is sparse and dispersed at Hollins Farm, Warren House Farm and Woodfield Farm.

- 1.4.4** The area is traversed north-west to south-east by the A1 trunk road, A disused rail line, a relic of the coal industry at North and South Elmsall, curves across the landscape between Upton and Kirk Smeaton.

- 1.4.5** There has been quarrying activity at Kirk Smeaton and Barnsdale Bar since 1945, but in the last decade there has been a considerable expansion of these operations.

- 1.4.6** There are small areas of woodland such as Barnsdale Wood and other small plantations. Much of the remainder of the land is given to arable farming; generally cereal crops but also root crops and brassicas.

- 1.4.7** Thus the conditions across much of the survey area are or have been conducive to the identification of levelled archaeological sites from the air.

1.5 ARCHAEOLOGICAL BACKGROUND

- 1.5.1** The survey area is centred upon archaeological features identified by geophysical survey and excavated in September 2000 at Barnsdale Bar Southern Extension, Norton, South Yorkshire (Webb 2000, WYAS in prep.b).

- 1.5.2** The area to the immediate north, lying in the county of North Yorkshire has been subject to a series of archaeological investigations since 1989 in response to the expanding quarrying operations at Barnsdale Bar (fig. 2.). To summarise these consist
- A. Kirk Smeaton Quarry (centred SE511 148) magnetometer survey and trial excavations (Abramson 1989a and b),
 - B. Barnsdale Bar Quarry (centred SE510 144) gradiometer survey, archaeological evaluation and archaeological watching brief (Boucher 1993, Webb 1993, Brown & Morris 1997),
 - C. Barnsdale Bar Quarry Western Extension (centred SE508 143) gradiometer survey, field walking and archaeological evaluation (Webb 1995, Speed 1997),
 - D. Barnsdale Bar Quarry Western Extension (centred SE506 146) gradiometer Survey (Webb 1996),
 - E. Barnsdale Bar Quarry (centred SE514 145) geophysical survey (Cottrell 1996),
 - F. Long Lane Quarry (centred SE517 148) gradiometer survey and archaeological evaluation (Webb 1997, O'Neill 1997a) and
 - G. Barnsdale Bar East (centred SE516 145) geophysical survey, archaeological evaluation and mitigation strategy (O'Neill and Wittingham 1999).
- 1.5.3** In addition a preliminary archaeological assessment was undertaken for the area around Barnsdale Bar Eastern Quarry extension between SE500 120 to SE530 160 (exclusive) (Boucher 1996). This included an examination of selected air photographs from the North and South Yorkshire Sites and Monuments Record and the National Monuments Record Centre and sketch plotting of the archaeological features identified.
- 1.5.4** At South Elmsall, West Yorkshire, c. 3 km south-west of the Barnsdale Bar Southern Extension, a series of geophysical surveys, archaeological evaluations and excavations have been undertaken at Dale Lane and Field Lane in advance of development (Burgess 1998, Howell 1998, McNaught 1998 and in prep. O'Neill 1997b and 1998). In addition air photo mapping of these sites and the surrounding landscape has been undertaken to a similar specification as this survey (fig. 1.) (Deegan 2000).

2. METHODOLOGY

2.1 AIR PHOTO RECTIFICATION AND MAPPING

- 2.1.1 This assessment was undertaken according to guidelines set out in the Institute of Field Archaeologists Technical Paper "Uses of aerial photography in archaeological evaluations" (Palmer & Cox 1993).
- 2.1.2 All the available air photographs were examined under x2 magnification where necessary and profitable and the vertical photographs were examined stereoscopically where possible and profitable. Details of the relevant archaeological, natural and modern features and control points were transferred to acetate sheets overlain to appropriate air photographs.
- 2.1.3 This information was rectified to control points derived from the map data supplied by the client. Rectification was undertaken using the Bradford Aerial Photographic Rectification Programme, AERIAL5.14. Visible, levelled archaeological features were mapped to 1:2500 scale accuracy and detail. The Ordnance Survey published tolerances at 1:2500 scale are 1.88m (99% degree of confidence). AERIAL5.14 gives error readings for each control point, where 5 or more control points are used. In all cases attempts were made to attain error readings of less than 3 metres for any one control point.
- 2.1.4 The rectified plots were collated in MAPINFO Professional 5.5 and converted from raster images to vector plots. The vector plots were then exported to AutoCAD LT® 2000 for assimilation and editing with reference to the photocopies of the original prints.
- 2.1.5 The data is presented in the AutoCAD LT® 2000 (AutoCAD® release 14 and AutoCADMAP® compatible) *barnsdale.dwg* file and *barnsdale* MAPINFO table to be viewed up to 1:2500 scale. This data is also presented in fig. 2. and at 1:5000 scale in fig. 5.
- 2.1.6 Summary information regarding groups of the archaeological features recorded is given in the gazetteer in Appendix I. A key to the gazetteer information is presented in the file *barnsdale.dwg* and in the *barnsdale* MAPINFO table.

2.2 DATA SOURCES

- 2.2.1 Oblique and vertical air photographs held in the following collections were consulted for this investigation.
- Cambridge University Committee for Aerial Photography (CUCAP), The Mond Building, Free School Lane, Cambridge,
 - National Monuments Record Centre (NMRC), Kemble Drive Swindon
 - North Yorkshire Sites and Monuments Record (NY SMR), County Hall, Northallerton, North Yorkshire,
 - South Yorkshire Sites and Monuments Record (SY SMR), Town Hall, Sheffield, South Yorkshire,
 - Map Office, Regeneration Department, Wakefield Metropolitan District Council (WMDC), Newton Bar, Wakefield and
 - West Yorkshire Sites and Monuments Record (WY SMR), Registry of Deeds, Newstead Road, Wakefield.
- 2.2.2 All air photographs consulted for this survey are listed in Appendix III.

3. RESULTS

3.1 THE AIR PHOTOGRAPHS

3.1.1 Summary of data consulted for this assessment

| Collections consulted | No. of air photographs consulted |
|-----------------------|--|
| CUCAP | 70 oblique photographs |
| NMRC | 228 oblique and 144 vertical air photographs |
| NY SMR | 6 oblique photographs |
| SY SMR | 90 oblique photographs |
| WMDC | 15 vertical air photographs |
| WY SMR | 22 oblique photographs |
| Total | 575 air photographs † |

† includes prints duplicated between collections

3.1.2 Together the air photographs consulted for this investigation provided complete coverage of the AP survey area.

3.2 ACCURACY

3.2.1 In all cases attempts were made to achieve accuracy of shape and form and positioning to within ± 3 metres. Features in AP complexes 24 and 32 were sketched plotted as there was insufficient information on the photographs of these features to relate them with any confidence to the map data. The errors in the positioning and mapping of these features is unquantifiable and may be large. The positioning of features in AP complexes 23 and 25 may exceed ± 3 metres as the photographs of these features do not show adequate map reference points. Features in AP complex 29 were positioned with reference to the corresponding anomalies in the geophysical data as the photographs of these features did not show adequate map reference points for accurate plotting.

3.3 SITE VISIBILITY

3.3.1 No features corresponding to the ditches identified by geophysical survey and investigated during excavations in September 2000 at the Barnsdale Bar Southern Extension were identified on the air photographs. Furthermore, of the numerous features identified by geophysical surveys, archaeological evaluations and excavations to the north only those at the Barnsdale Bar quarry centred at SE514 145 were visible on the air photographs examined (Cottrell 1996). This apparent blank area extends west of the A1 but is in considerable contrast to the rest of the air photo survey (see below).

3.3.2 Although a greater part of the aerial reconnaissance predates much of the quarrying at Barnsdale Bar there were only a limited number of oblique air photographs of this area and none of the Barnsdale Bar southern extension. However there was vertical coverage from several decades available for the whole of the study area and some of these photographs recorded crop mark features elsewhere in the survey area.

3.3.3 Several factors may contribute to the absence of evidence on the air photographs for the archaeological features known to exist at Barnsdale Bar. Glacial and periglacial features were observed during most of the excavations and the difficulties experienced in distinguishing them from anthropogenic features noted (e.g. Webb 1993, Brown & Morris 1997). These features, in the form of naturally infilled cracks and solution holes can also produce crop marks which may contrive to camouflage and mask archaeological features from the archaeological aerial photographer. Some of the later features identified

on the geophysical survey and examined during excavation were observed to be cut entirely within the subsoil and to be extremely difficult to distinguish visually (Speed 1997). In such cases the differences between the sub-soils and feature fills may be insufficient to produce visible differences in crop growth or maturation.

3.3.4 These areas may also have been planted with a less responsive non-cereal crop on the occasions of archaeological aerial reconnaissance.

3.3.5 The preliminary archaeological assessment of the Barnsdale Bar area undertaken in 1996 recorded a barrow cemetery visible on air photographs centred at SE5081 1458 (Boucher 1996). The source of this information is a North Yorkshire SMR record PIN9170, which identifies the relevant photographs as DNR0035/36 and DNR0036/13-14 dated to 01 July 1972. These photographs are not held by the North Yorkshire SMR and could not be identified with prints in any other of the collections consulted. This site was not visible on any of the photographs consulted for this survey and thus the validity of the interpretation remains unknown. Part of the area in which the cemetery is recorded has been subject to geophysical survey but the no barrows were not identified in the interpretation of the results (Webb 1995).

3.4 THE ARCHAEOLOGY (FIGS 2-5)

3.4.1 The following is a brief summary of the results of this investigation, descriptions of individual groups of features can be found in Appendix I.

3.4.2 The crop marks reveal a predominantly agricultural landscape of enclosures, trackways and fields, reflecting the results of the previous archaeological investigations (Abramson 1989a and b, Boucher 1993, Cottrell 1996, Brown & Morris 1997, O'Neill 1997a, O'Neill and Wittingham 1999, Speed 1997, Webb 1993, 1995, 1996 and 1997).

3.4.3 Skeletal remains were excavated at Kirk Smeaton Quarry and at the Barnsdale Bar quarry centred SE510 144 (Abramson 1989, Webb 1993). The remains were both located within simple grave cuts but are not thought to be contemporary (Brown & Morris 1997). These or any similar graves in the area were not identified on the air photographs.

3.4.4 An enclosure in AP Complex 33 is tentatively identified as a Neolithic or Bronze Age funereal monument. The sub-circular enclosure, possibly the ring ditch of a truncated barrow is surrounded by a more irregular outer enclosure. The crop marks of these features were rather weak in comparison with those in the same field in AP complex 32 which may suggest narrower or shallower ditches and/or an earlier date. Field walking at the Barnsdale Bar Quarry Western Extension centred at SE508 143 recovered flint material from an area concentrated around SE5093 1419 (Webb 1995). The overall assemblage indicated activity predominantly of Neolithic date. However the evidence available is insufficient to associate the possible barrow with this material.

3.4.5 As noted above the barrow cemetery previously observed on air photographs was not identified by this survey (Boucher 1996)

3.4.6 The archaeological investigations from 1989 onwards have contributed to a growing understanding of the landscape at Barnsdale Bar. This landscape is characterised by field boundaries, trackways, enclosures and small discrete features. Although there has been a relative paucity of dateable material the accumulated evidence suggests this to be a multi-phase landscape developing from the late Iron Age through the Roman period. With the current knowledge base it seems reasonable to extrapolate these findings to most of the features identified by this air photo survey. Thus some elements of these landscapes must be contemporary with the construction and occupation of the Roman Fort at Burghwallis (late 1st to 2nd century?).

3.4.7 Post-medieval field boundaries and hedge lines were also interpreted from the geophysical surveys and confirmed by excavation (Webb 1995, Brown & Morris 1997).

If these later features have been removed before the time of Ordnance Survey First Edition 1 inch to 1 mile mapping it is difficult to distinguish them from earlier field boundaries on the evidence of the air photographs alone and some examples may have been grouped in the gazetteer with significantly earlier remains.

- 3.4.8 More than 38 enclosures were identified on the air photographs in the survey area, mostly relatively evenly dispersed, there were no large clusters or groups, and no particular area had a significant under representation with the exception of the 'blank' area noted above.
- 3.4.9 Most of the enclosures were rectilinear or polygonal in plan with three notable exceptions, including the possible barrow in AP complex 33 discussed above (fig. 3).
- 3.4.10 The enclosures in AP complex 7 and 31 are of similar oval plan but the latter, covering 0.17ha is considerable larger than the former which is only 0.05ha. Nevertheless they occur in similar contexts, close to sinuous trackways and have outer ditches that may be part of those trackways. AP complex 31 contains a small circular feature that may be the remains of a hut circle and in turn indicate a possible domestic function for this type of enclosure plan.
- 3.4.11 The rectilinear enclosure in AP complex 15 was truncated along the western side by a pipeline in 1984. Despite this intrusion a detailed plan of the surviving features could be identified in the crop marks. The enclosure is defined by a ditch 3-4m wide with an east-facing entrance, inside there are numerous rectilinear compartments defined by ditches or gullies and pits. The arrangement of the internal features does not leave space for an internal bank suggesting it was either positioned external to the enclosure or that the ditch material was re-deposited elsewhere. The entrance opens into another enclosed area. The plan of these features as seen from the air undoubtedly belies a complex sequence of development.
- 3.4.12 A similarly detailed plan was observed for the enclosure in AP Complex 10. The broad-ditched rectilinear enclosure of 0.28ha has a east-facing entrance and is bisected by a ditch or gully. There is a possible hut circle in the southern half and clusters of pits in both areas. However contemporaneity between these features and the enclosing ditch should not perhaps be presumed as it would appear that the enclosure overlies a smaller slighter enclosure in its north-east quadrant.
- 3.4.13 The enclosure in AP complex 1 is of similar outline plan to the AP complex 10 enclosure. This rectilinear enclosure is larger at 0.52ha but is of similar proportions and is again sub-divided. This enclosure has only been photographed on one occasion and the crop marks did not reveal the level of detail seen in the examples above.
- 3.4.14 Enclosures in AP complexes 8 and 19 and the possible incomplete enclosure in AP complex 28 have internal divisions separating small corners from the rest of the enclosure.
- 3.4.15 In many cases internal divisions and structural features could not be identified within or around the enclosures. In examples such as AP complexes 3, 19 and 29 this is undoubtedly a factor of visibility. These features were ill-defined by crop marks and it is not surprising that any slighter features in their vicinity have not produced a visible crop response.
- 3.4.16 The two broad ditched enclosures and slighter features in AP complex 27, being the most substantial features visible in the vicinity may the settlement remains associated with the multi-phased field systems identified at the Barnsdale Bar quarry centred SE510 144, the Barnsdale Bar quarry Western Extension centred SE508 143 and the Barnsdale Bar Southern Extension.

- 3.4.17 The enclosures in AP complex 24 (0.08ha) and 26 (0.04ha) are relatively small and both appear in association with linear features. These may be simple stock pens in the corner of fields and may not have been associated with any other structures.
- 3.4.18 A large proportion of the enclosures observed within the study area are found in direct association with double-ditched features thought to be trackways or lanes. Enclosures in AP complexes 31, 18, 30, 35, 22, 25 and 35 all abut one of the ditches of these trackways. The function of each of these enclosures is unlikely to be consistent, the polygonal example in AP complex 22 may be the remains of human occupation whilst the large, irregular examples in AP complex 31 are more likely to be paddocks or fields.
- 3.4.19 Although the visible sections of trackway are not contiguous, with the integration of evidence from the geophysical surveys and excavations several routes can be projected across the study area (fig. 4.). In the north, an east to west aligned trackway can be traced over 2 kilometres through AP complexes 17, 18, 30, 24 and 35. At AP complex 17 the trackway appears to intersect with a north-west to south-east aligned trackway and at its eastern extent in AP complex 35 it joins a north to south aligned branch extending beyond the study area.
- 3.4.20 AP Complex 31 contains sections of branching trackway which extend beyond the study area, unseen into Barnsdale Wood and westward in AP complex 28. A curving section of double-ditched feature to the north of Barnsdale Wood in AP complex 32 may be part of the same network.
- 3.4.21 Other meandering sections of trackway are seen in AP complexes 8 and 9. Trackways of similar sinuosity were observed in the South Elmsall Area (Deegan 2000). Parts of trackway in AP complexes 8 and 9 follow the line of the c. 60 metres contour but other trackways cross slopes and were presumably routed with respect to other natural and anthropogenic features in the landscape that have not been identified here.
- 3.4.22 There is no clear relationship between Roman Ridge Roman road and these trackways.
- 3.4.23 Several sections of trackway are abutted linear features at or close to right angles. These are probably field boundaries. In AP complexes 20 and 22 four rows of rectangular fields can be between the two trackways. These fields are defined by irregular often apparently discontinuous ditches as is the linear feature in AP complex 11. Similar features excavated at South Elmsall and further north on the Magnesian Limestone at Roman Ridge in West Yorkshire have been found to be defined by elongated pits of irregular length and shape (Howell 1998, O'Neill 1998, WYAS in prep.a).
- 3.4.24 Elsewhere the layout of the fields is less clear. Away from the trackways and enclosure there is less crop mark evidence for the field boundaries, though the evidence from geophysical survey and excavations and they are known to exist in expansive and coherent patterns. It is likely that these slighter features defined by a single, often discontinuous ditch simply cannot promote the same effect on overlying crop as the ditches of trackways and enclosures. However, it may also be the case that essential differences between the processes of infilling the trackway and enclosure ditches and those demarcating the fields results in differential visibility.
- 3.4.25 The features in AP complex 14 were not recorded as crop marks but rather by clearly defined tonal differences in the bare soils where ploughing had cut the archaeological deposits. It is possible that these features are the remains of later, medieval or post-medieval activity.
- 3.4.26 The inter-relationships between the enclosures, trackways and fields are complex as has been demonstrated amply by the excavations at Barnsdale Bar Southern Extension and the other sites in the vicinity.

- 3.4.27 The features in AP complexes 17, 18, 30, 34, and 35 form an extensive trackway flanked by various stock enclosures, pens or domestic enclosures but with admittedly meagre evidence for fields. A brief examination of the air photographs to the immediate north of this study area suggests that a similar landscape of features extends northward to edge of the Went valley.
- 3.4.28 The trackways, discontinuous field boundaries and enclosures in AP complexes 20 and 22 constitute a suite of features very similar to those excavated at land north of Field Lane, South Elmsall. There the discontinuous boundaries and enclosures were identified as part of a sequence of development originating in the Bronze Age and developing through the late Iron Age and Roman Period (Howell 1998, McNaught 1998 and in prep., O'Neill 1998). The earliest phases of development in the landscape north of Field Lane were unenclosed settlement defined by hut circles and windbreaks and a rectangular palisaded enclosure, possibly enclosing settlement. These ephemeral features were not identified on the air photographs examined for the South Elmsall survey (Deegan 2000). The absence of evidence for Bronze Age unenclosed and enclosed settlement as seen at South Elmsall, but the presence of early prehistoric flint artefacts at Barnsdale Bar Western Extension suggests a significant dimension is missing in the perceived development of the landscape of this survey area.
- 3.4.29 Although the remains identified by this survey may correspond predominantly with agricultural activity, the presence of evidence for metal working at South Elmsall in similar landscape contexts suggests that such interpretations should not be made to the exclusion of the possibility of other industries (Howell 1998, O'Neill 1998).
- 3.5 SURVIVAL OF THE ARCHAEOLOGY
- 3.5.1 All of the archaeological features identified by this survey were levelled. The excavations around Barnsdale Bar indicates that some of these features may be severely truncated.
- 3.5.2 The trackway in AP complex 31 thought to continue through Barnsdale Wood to AP complex 32 may survive better in the woodland.

4. DISCUSSION AND CONCLUSION

- 4.1.1** This air photo survey has demonstrated that extensive agricultural landscapes of probable late-Iron Age to Roman date exist around Barnsdale Bar. The coherent character of some aspects these landscapes can indicate the likely presence of archaeological features not visible on the air photographs. This predictive quality may be of value in the planning process in the absence of any other direct archaeological evidence.
- 4.1.2** Geophysical surveys and excavation at Long Lane Quarry, Kirk Smeaton Quarry and Barnsdale Bar Quarry and the Western, Eastern and Southern Extension have demonstrated the high archaeological potential where the air photographs could not.
- 4.1.3** The evidence of the excavations at Barnsdale Bar Southern Extension and the other sites in the vicinity has demonstrated that the apparently simple layout of the enclosures, trackways and fields suggested by the crop mark evidence is deceptive and rather that the development of this predominantly agricultural landscape is gradual and to some extent cumulative.
- 4.1.4** This air photo survey has placed the features identified and excavated at Barnsdale Bar Southern Extension in a broader context which can inform the mitigation and planning of future archaeological investigations in the area.

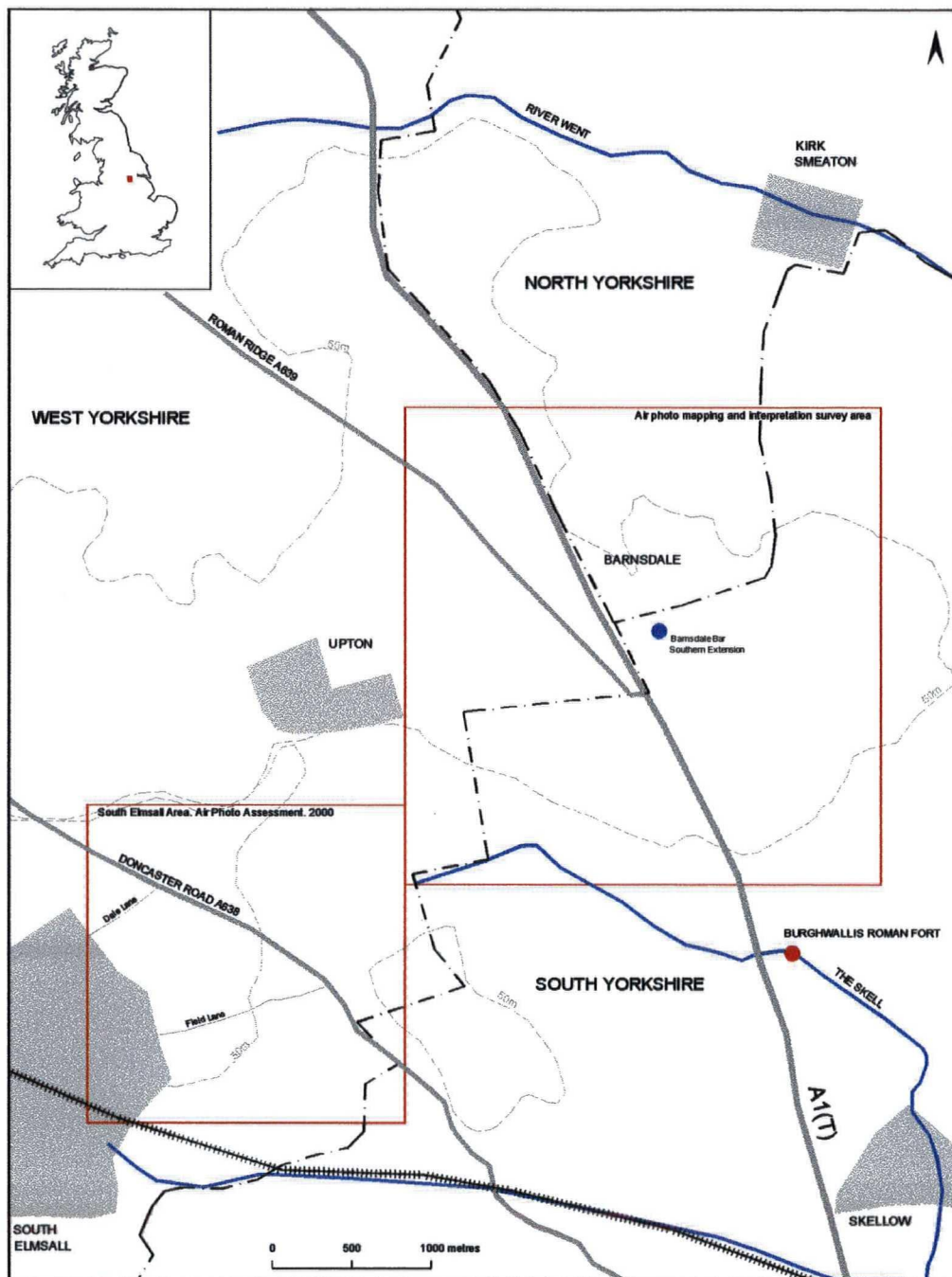


Fig. 1. Location plan of the Barnsdale Bar Quarry Southern Extension air photo survey area and the South Elmsall air photo survey area.

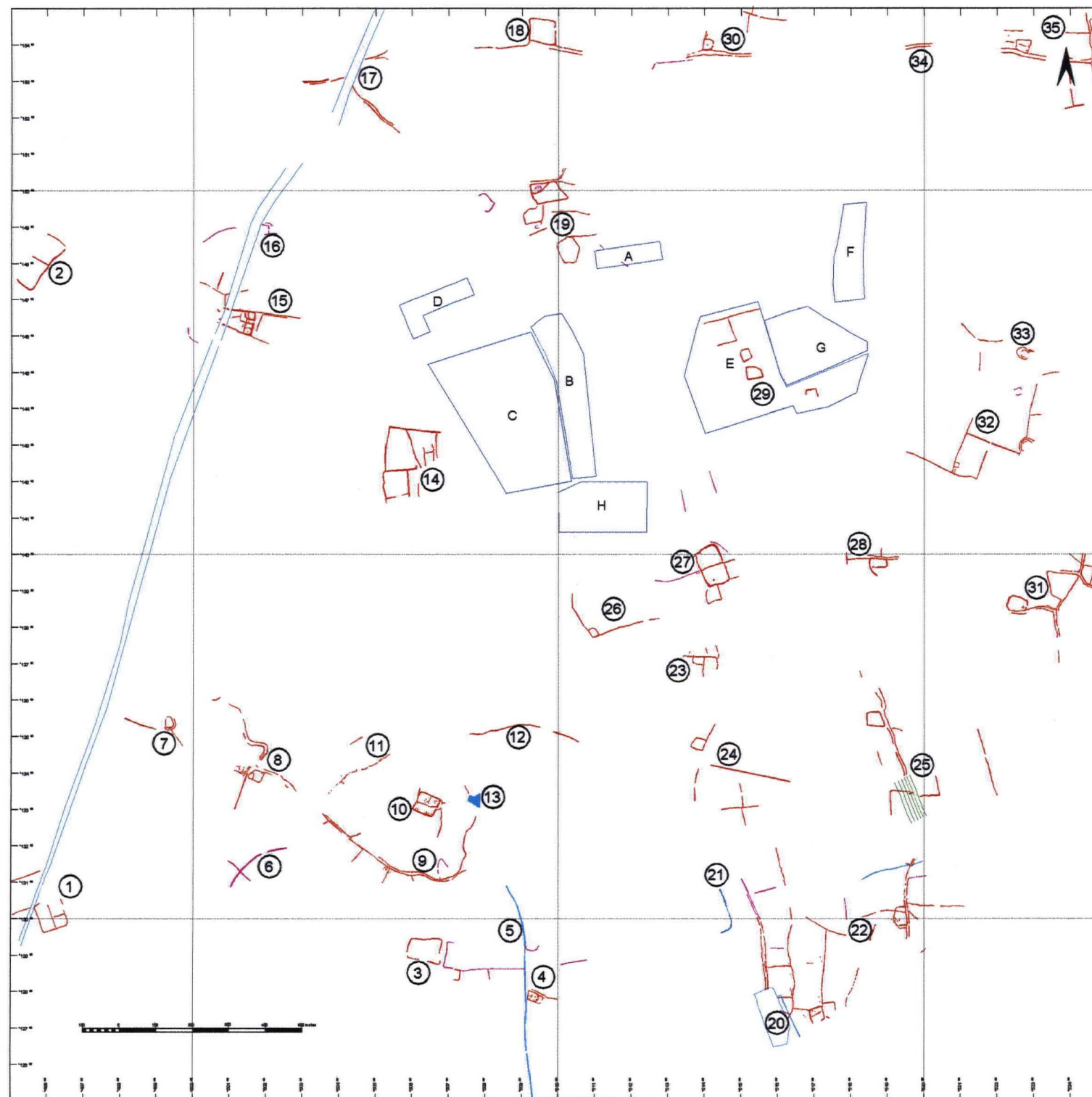


Fig. 2. Air photo mapping and interpretation and location of previous archaeological investigations at Barnsdale Bar Quarry

| Key | |
|---|--|
| --- | Archaeological ditch |
| --- | Dubious archaeological ditch |
| --- | Ridge and furrow |
| --- | Crop mark features of recent origin |
| --- | Crop mark features of natural origin |
| (27) | AP complex number |
| [] | Approximate area of geophysical survey |
| A | Kirk Smeaton Quarry |
| B | Barnsdale Bar Quarry |
| C | Barnsdale Bar Quarry Western Extension |
| D | Barnsdale Bar Quarry Western extension |
| E | Barnsdale Bar Quarry |
| F | Long Lane Quarry |
| G | Barnsdale Bar East |
| H | Barnsdale Bar Southern Extension |
| Title | |
| Air photo mapping of land around Barnsdale Bar Quarry Southern Extension, Norton, South Yorkshire | |
| Project number | 0001008 |
| Author | Allison Deegan BSc MIFA |
| Client | Archaeological Services WYAS |
| Date | October 2000 |
| Original mapping scale | 1:2500 |
| Original source | CUCAP, NMRC, NYSMR, SYSMR, WMDC, WYSMR |
| © Alison Deegan 2000 | |

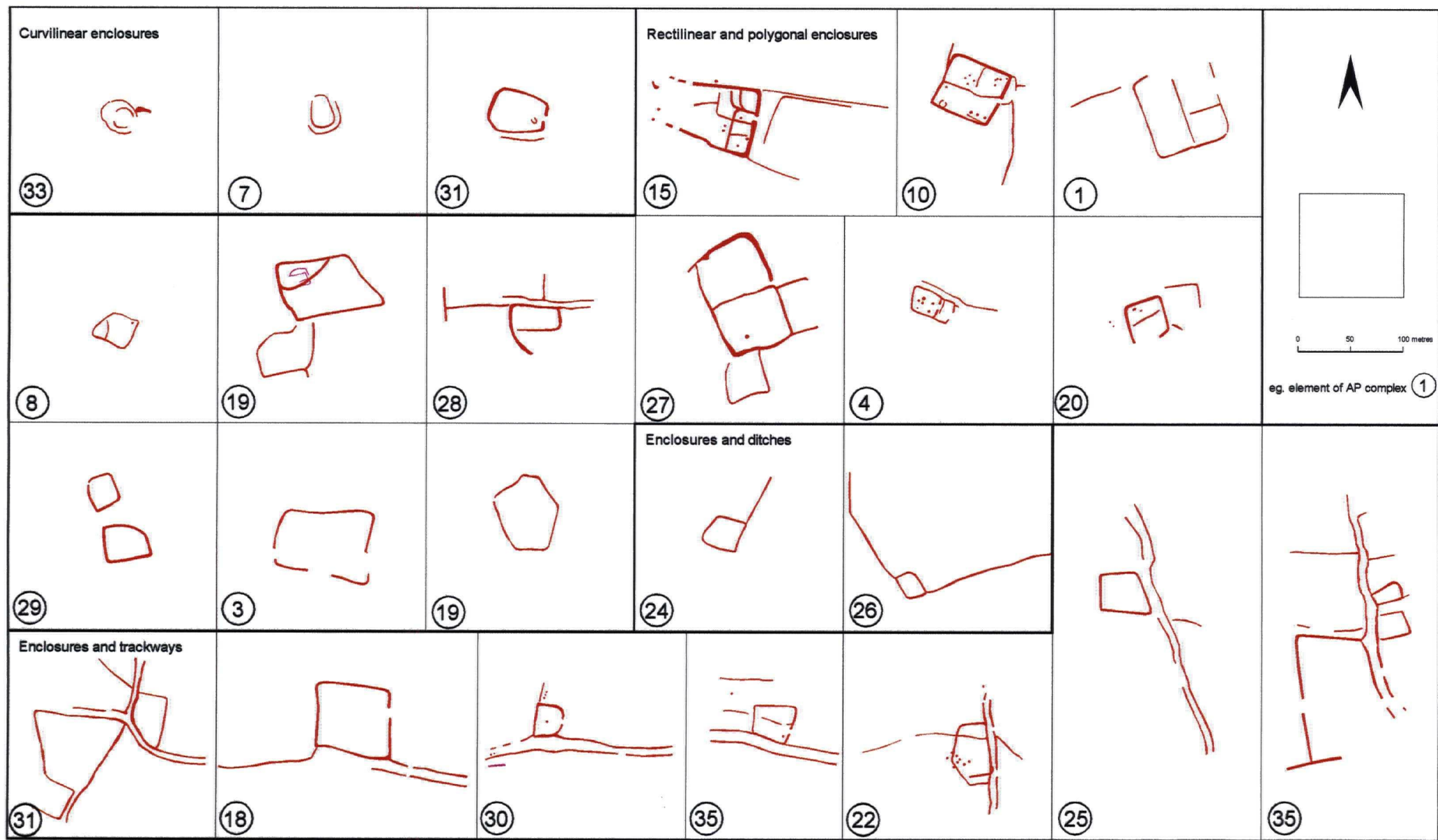


Fig. 3. Selected enclosures from the Barnsdale Bar Quarry Southern Extension survey area (1:5000 scale)

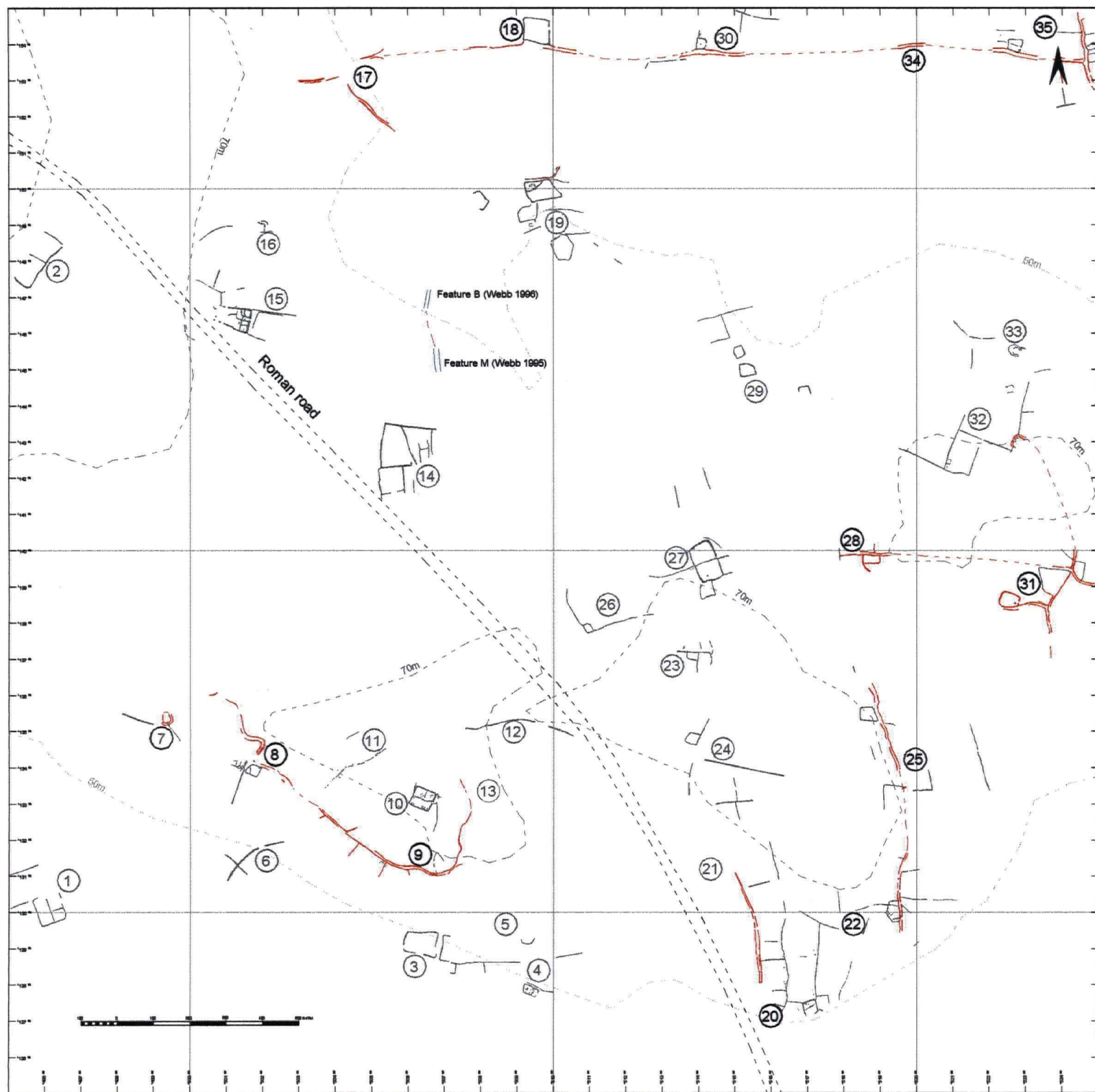


Fig. 4. Trackways in the Barnsdale Bar Quarry Southern Extension survey area

Key

- Trackways
- - - Geophysical anomalies (approx. position)
- - - Projected routes of trackways
- - - Other archaeological features
- ① AP complex number

Title

Air photo mapping of land at Barnsdale Bar, South Yorkshire

Project number

0001006

Author

Alison Deegan BSc MIFA

Client

Archaeological Services WYAS

Date

October 2000

Original mapping scale

1:2500

Original source

CUCAP, NMRC, NYSMR, SYSMR, WMDC, WYSMR

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| | |
|-------------------------|--|
| AP complex no. | 1 |
| <i>Central NGR</i> | SE 49604 13008 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | sub-divided rectilinear enclosure and parallel linear features |
| <i>Interpretation</i> | late prehistoric to Roman enclosure and field boundaries |
| <i>Comments</i> | cut by pipeline in 1984. |
| <i>Photo references</i> | SE4913/5 NMRC |
| AP complex no. | 2 |
| <i>Central NGR</i> | SE 49594 14795 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | dubious perpendicular linear features |
| <i>Interpretation</i> | possible late prehistoric to Roman enclosures |
| <i>Comments</i> | |
| <i>Photo references</i> | MAL67054 39 WMDC Regeneration Dept |
| AP complex no. | 3 |
| <i>Central NGR</i> | SE 50686 12906 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | rectilinear enclosures and dubious linear features |
| <i>Interpretation</i> | possible late prehistoric to Roman enclosures and field boundaries |
| <i>Comments</i> | |
| <i>Photo references</i> | MAL71041 175 NMRC DNR554/22A SY SMR DNR738/20 WY SMR DNR738/22 WY SMR |

| | |
|-------------------------|--|
| AP complex no. | 4 |
| <i>Central NGR</i> | SE 50936 12786 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | small rectilinear enclosure with internal pits and annexe and linear feature |
| <i>Interpretation</i> | late prehistoric to Roman farmstead and field boundary |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | SE5012/12 NMRC |
| | DNR738/22 WY SMR |
| | WY241/10 WY SMR |
| | WY241/10 WY SMR |
| AP complex no. | 5 |
| <i>Central NGR</i> | SE 50906 12661 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | broad linear feature |
| <i>Interpretation</i> | medieval or post-medieval field boundary |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | MAL71041 175 NMRC |
| | SE5012/12 NMRC |
| | DNR738/22 WY SMR |
| | WY241/10 WY SMR |
| AP complex no. | 6 |
| <i>Central NGR</i> | SE 50128 13130 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | dubious perpendicular linear features |
| <i>Interpretation</i> | possible late prehistoric to Roman ditches |
| <i>Comments</i> | possibly associated with AP complex 9 |
| <i>Photo references</i> | |
| | 82/1266 28 NMRC |

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|-------------------------|--|
| AP complex no. | 7 |
| <i>Central NGR</i> | SE 49934 13533 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | curvilinear enclosure with outer ditch and linear features |
| <i>Interpretation</i> | prehistoric to Roman enclosure and unknown ditches |
| <i>Comments</i> | possibly associated with AP complex 8 |
| <i>Photo references</i> | SE4913/8 NMRC |
| AP complex no. | 8 |
| <i>Central NGR</i> | SE 50159 13412 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | sinuous double-ditched linear feature, one rectilinear enclosure with internal pit and corner enclosure, one incomplete sub-divided enclosure with pits and linear feature |
| <i>Interpretation</i> | late prehistoric to Roman trackway, settlement and field boundary |
| <i>Comments</i> | probably associated with AP complex 9, and possibly associated with AP complex 7 |
| <i>Photo references</i> | MAL71025 99 NMRC SE5013/19 NMRC |
| AP complex no. | 9 |
| <i>Central NGR</i> | SE 50644 13115 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | sinuous double-ditched linear feature with perpendicular linear features and pit cluster |
| <i>Interpretation</i> | late prehistoric to Roman trackway and field boundaries and cluster of possible storage pits |
| <i>Comments</i> | probably associated with AP complex 8 |
| <i>Photo references</i> | BTX67 CUCAP DNR554/22A SY SMR DNR738/17 WY SMR WY230/17A WY SMR WY241/6 WY SMR |

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|-------------------------|--|
| AP complex no. | 10 |
| <i>Central NGR</i> | SE 50639 13316 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | small rectilinear enclosure, overlain by large broad-ditched, sub-divide rectilinear enclosure also pits, circular enclosure and linear features |
| <i>Interpretation</i> | multi-phase late prehistoric to Roman settlement with pits, possible hut circle and external ditches |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | DNR738/17 WY SMR |
| | WY230/17A WY SMR |
| | WY241/6 WY SMR |

| | |
|-------------------------|--|
| AP complex no. | 11 |
| <i>Central NGR</i> | SE 50469 13410 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | linear arrangement of elongated pits and parallel linear feature |
| <i>Interpretation</i> | late prehistoric to Roman segmented boundary and field boundary |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | MAL71025 99 NMRC |
| | SE5013/18 NMRC |

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|-------------------------|------------------------------------|
| AP complex no. | 12 |
| <i>Central NGR</i> | SE 50904 13530 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | sinuous linear feature |
| <i>Interpretation</i> | late prehistoric to medieval ditch |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | MAL71041 175 NMRC |

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|-------------------------|---|
| AP complex no. | 13 |
| <i>Central NGR</i> | SE 50774 13331 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | amorphous feature |
| <i>Interpretation</i> | late prehistoric to medieval quarry |
| <i>Comments</i> | |
| <i>Photo references</i> | DNR738/17 WY SMR |
| AP complex no. | 14 |
| <i>Central NGR</i> | SE 50593 14256 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | system of rectilinear enclosures |
| <i>Interpretation</i> | possible medieval or post-medieval paddocks or fields |
| <i>Comments</i> | |
| <i>Photo references</i> | SE5015/12 NMRC |
| AP complex no. | 15 |
| <i>Central NGR</i> | SE 50116 14641 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | broad-ditched, sub-divided enclosure with internal pits and linear features |
| <i>Interpretation</i> | late prehistoric to Roman settlement and paddocks |
| <i>Comments</i> | cut by pipeline in 1984 |
| <i>Photo references</i> | CQI22 CUCAP SE5014/24 NMRC WY241/2 WY SMR |

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|-------------------------|---|
| AP complex no. | 16 |
| <i>Central NGR</i> | SE 50204 14895 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | dubious linear feature |
| <i>Interpretation</i> | possible late prehistoric to Roman enclosure and field boundaries |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | CQI22 CUCAP |
| | SE5014/24 NMRC |

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|-------------------------|--|
| AP complex no. | 17 |
| <i>Central NGR</i> | SE 50438 15285 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | perpendicular, double-ditched linear features |
| <i>Interpretation</i> | late prehistoric to Roman trackways |
| <i>Comments</i> | east to west aligned branch possibly associated with AP complex 18 |
| <i>Photo references</i> | |
| | MAL81038 121 NMRC |

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|-------------------------|---|
| AP complex no. | 18 |
| <i>Central NGR</i> | SE 50937 15418 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | rectilinear enclosure and double-ditched linear feature |
| <i>Interpretation</i> | late prehistoric to Roman enclosure and trackway |
| <i>Comments</i> | probably associated with AP complexes 17 and 30 |
| <i>Photo references</i> | |
| | CCX64 CUCAP |
| | 2422/26 SY SMR |

| | |
|-------------------------|---|
| AP complex no. | 19 |
| <i>Central NGR</i> | SE 50958 14990 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | rectilinear enclosure with corner enclosure, two irregular-shaped enclosures, hexagonal enclosure and linear features |
| <i>Interpretation</i> | late prehistoric to Roman enclosure, possible paddocks and trackway and field boundaries |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | 70H-Y 32 CUCAP |
| | CQI3 CUCAP |
| | CQI3 CUCAP |
| | SE5215/2 NMRC |
| | AJC70/38 NY SMR |
| | 2422/24 SY SMR |
| | MAL67054 39 WMDC Regeneration Dept |

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|-------------------------|--------------------------------------|
| AP complex no. | 20 |
| <i>Central NGR</i> | SE 51591 12767 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | amorphous feature and linear feature |
| <i>Interpretation</i> | post- medieval quarry and boundary |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | CQI19 CUCAP |
| | SE5112/35 NMRC |
| | 2431/24 SY SMR |

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|-------------------------|--|
| AP complex no. | 21 |
| <i>Central NGR</i> | SE 51461 13027 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | curving linear feature |
| <i>Interpretation</i> | post-medieval woodland boundary |
| <i>Comments</i> | woodland extant on 1951 vertical photographs |
| <i>Photo references</i> | |
| | SE5112/35 NMRC |
| | 2422/18 SY SMR |

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|-------------------------|---|
| AP complex no. | 22 |
| <i>Central NGR</i> | SE 51715 12861 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | two double-ditched linear features, sinuous, perpendicular linear features, two adjoining rectilinear enclosures with pits, one pentagonal enclosure with pits and a broad linear feature |
| <i>Interpretation</i> | extensive system of late prehistoric to Roman trackways, field system and enclosures and post-medieval ditch |
| <i>Comments</i> | probably associated with AP complex 25 and possibly associated with AP complex 24 |
| <i>Photo references</i> | |
| | CQI19 CUCAP |
| | CPE/UK/1880 4080 NMRC |
| | SE5112/35 NMRC |
| | SE5113/29 NMRC |
| | 1270/12 SY SMR |
| | 2422/18 SY SMR |
| | 2431/24 SY SMR |

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|-------------------------|--|
| AP complex no. | 23 |
| <i>Central NGR</i> | SE 51420 13718 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | two adjoining enclosures and linear features |
| <i>Interpretation</i> | late prehistoric to Roman enclosures |
| <i>Comments</i> | |
| <i>Photo references</i> | |
| | BJN4 CUCAP |
| | BTE9 CUCAP |

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|-------------------------|--|---------|--------|---------|--------|----------|--------|
| AP complex no. | 24 | | | | | | |
| <i>Central NGR</i> | SE 51382 13477 | | | | | | |
| <i>Condition</i> | levelled | | | | | | |
| <i>Form of features</i> | cut | | | | | | |
| <i>Description</i> | rectilinear enclosure and perpendicular linear features | | | | | | |
| <i>Interpretation</i> | late prehistoric to Roman enclosure and field boundaries and possibly later field boundaries | | | | | | |
| <i>Comments</i> | possibly associated with AP complex 22; sketched plotted due to inadequate photo control | | | | | | |
| <i>Photo references</i> | <table> <tr> <td>BJN4</td><td>CUCAP</td></tr> <tr> <td>BTE9</td><td>CUCAP</td></tr> <tr> <td>DNR48/21</td><td>SY SMR</td></tr> </table> | BJN4 | CUCAP | BTE9 | CUCAP | DNR48/21 | SY SMR |
| BJN4 | CUCAP | | | | | | |
| BTE9 | CUCAP | | | | | | |
| DNR48/21 | SY SMR | | | | | | |
| AP complex no. | 25 | | | | | | |
| <i>Central NGR</i> | SE 51927 13464 | | | | | | |
| <i>Condition</i> | levelled | | | | | | |
| <i>Form of features</i> | cut | | | | | | |
| <i>Description</i> | rectilinear enclosure, sinuous double-ditched linear feature and perpendicular and parallel linear features | | | | | | |
| <i>Interpretation</i> | late prehistoric to Roman enclosure, trackway and field system | | | | | | |
| <i>Comments</i> | probably associated with AP complex 22 | | | | | | |
| <i>Photo references</i> | <table> <tr> <td>1270/10</td><td>SY SMR</td></tr> <tr> <td>1270/12</td><td>SY SMR</td></tr> <tr> <td>1270/12</td><td>SY SMR</td></tr> </table> | 1270/10 | SY SMR | 1270/12 | SY SMR | 1270/12 | SY SMR |
| 1270/10 | SY SMR | | | | | | |
| 1270/12 | SY SMR | | | | | | |
| 1270/12 | SY SMR | | | | | | |
| AP complex no. | 26 | | | | | | |
| <i>Central NGR</i> | SE 51092 13793 | | | | | | |
| <i>Condition</i> | levelled | | | | | | |
| <i>Form of features</i> | cut | | | | | | |
| <i>Description</i> | perpendicular linear features and small rectilinear enclosure | | | | | | |
| <i>Interpretation</i> | late prehistoric to Roman field boundaries and corner enclosure | | | | | | |
| <i>Comments</i> | possibly associated with AP complex 27 | | | | | | |
| <i>Photo references</i> | <table> <tr> <td>BTE9</td><td>CUCAP</td></tr> <tr> <td>2371/26</td><td>SY SMR</td></tr> </table> | BTE9 | CUCAP | 2371/26 | SY SMR | | |
| BTE9 | CUCAP | | | | | | |
| 2371/26 | SY SMR | | | | | | |

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|-------------------------|--|
| AP complex no. | 27 |
| <i>Central NGR</i> | SE 51424 13962 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | two, broad-ditched adjoining rectilinear enclosures, one irregular enclosure, one incomplete rectilinear enclosure and dubious linear features |
| <i>Interpretation</i> | late prehistoric to Roman settlement and possible field boundaries |
| <i>Comments</i> | possibly associated with AP complex 26 |
| <i>Photo references</i> | CQI5 CUCAP 2371/26 SY SMR |
| AP complex no. | 28 |
| <i>Central NGR</i> | SE 51874 13969 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | sinuous double-ditched linear feature with perpendicular linear features and incomplete sub-divided curvilinear enclosure |
| <i>Interpretation</i> | late prehistoric to Roman trackway, field boundaries and enclosure |
| <i>Comments</i> | possibly associated with AP complex 31 |
| <i>Photo references</i> | 2371/20 SY SMR |
| AP complex no. | 29 |
| <i>Central NGR</i> | SE 51538 14494 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | three rectilinear enclosures and perpendicular linear features |
| <i>Interpretation</i> | late prehistoric to Roman enclosures and field boundaries |
| <i>Comments</i> | correspond to elements of a more complex suite of features identified by geophysical survey and evaluated in 1999 (Cottrell 1996, O'Neill & Wittingham 1999); the mapped features were positioned with reference to the geophysical survey plots as the photo control was inadequate |
| <i>Photo references</i> | BJN22 CUCAP BJN24 CUCAP |

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|-------------------------|--|
| AP complex no. | 30 |
| <i>Central NGR</i> | SE 51418 15377 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | double-ditched linear feature, rectilinear enclosure and perpendicular linear features |
| <i>Interpretation</i> | late prehistoric to Roman trackway, enclosure and field boundaries |
| <i>Comments</i> | probably associated with AP complex 18 and 34 |
| <i>Photo references</i> | BJN16 CUCAP 2360/23 SY SMR |
| AP complex no. | 31 |
| <i>Central NGR</i> | SE 52259 13857 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | sinuous double-ditched linear features, curvilinear enclosure with entrance and internal circular enclosure and outer ditch and two polygonal enclosures |
| <i>Interpretation</i> | late prehistoric to Roman trackways, enclosure with possible hutcircle and paddocks |
| <i>Comments</i> | possibly associated with AP complex 28 |
| <i>Photo references</i> | SE5213/22 NMRC 2362/4 SY SMR 2362/5 SY SMR |
| AP complex no. | 32 |
| <i>Central NGR</i> | SE 52184 14304 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | perpendicular linear features, small rectilinear enclosure and pits, double-ditched curving linear features and incomplete sub-circular enclosure |
| <i>Interpretation</i> | late prehistoric to Roman field boundaries, enclosure and pits, possible double-ditched enclosure or section of trackway and possible hut circle |
| <i>Comments</i> | |
| <i>Photo references</i> | SE5214/17 NMRC 2422/22 SY SMR |

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|-------------------------|--|
| AP complex no. | 33 |
| <i>Central NGR</i> | SE 52274 14549 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | sub-circular enclosure with irregular outer curvilinear enclosure and amorphous pit |
| <i>Interpretation</i> | possible prehistoric barrow |
| <i>Comments</i> | |
| <i>Photo references</i> | SE5214/17 NMRC |
| AP complex no. | 34 |
| <i>Central NGR</i> | SE 51990 15398 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | double-ditched linear features |
| <i>Interpretation</i> | late prehistoric to Roman trackway |
| <i>Comments</i> | probably associated with AP complexes 30 and 35 |
| <i>Photo references</i> | MAL71052 24 NMRC |
| AP complex no. | 35 |
| <i>Central NGR</i> | SE 52418 15355 |
| <i>Condition</i> | levelled |
| <i>Form of features</i> | cut |
| <i>Description</i> | perpendicular double-ditched linear features, perpendicular linear features and three rectilinear enclosures |
| <i>Interpretation</i> | late prehistoric to Roman trackways, field boundaries and stock or domestic enclosures |
| <i>Comments</i> | probably associated with AP complex 34 |
| <i>Photo references</i> | MAL71051 206 NMRC SE5215/17 NMRC 2365/10 SY SMR |

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III. AIR PHOTOGRAPHS

III.I CAMBRIDGE UNIVERSITY COMMITTEE ON AERIAL PHOTOGRAPHY

III.I.I Oblique air photographs

A search of this collection was undertaken by a CUCAP librarian on the 18th August and the photographs were examined on the 5th October 2000.

| SORTIES | FRAMES | DATE |
|---------|---------|----------|
| 70h-y | 32 - 33 | 17/07/74 |
| bjn | 1 - 8 | 12/07/72 |
| bjn | 11 - 12 | 12/07/72 |
| bjn | 14 - 17 | 02/07/72 |
| bjn | 21 - 24 | 12/07/72 |
| bnx | 12 - 13 | 02/07/73 |
| bte | 8 - 10 | 25/06/75 |
| btu | 66 - 68 | 05/07/75 |
| buu | 43 - 46 | 21/07/75 |
| byh | 11 - 15 | 28/06/75 |
| ccx | 63 - 64 | 19/07/77 |
| cei | 69 | 02/08/77 |
| cia | 45 - 46 | 12/01/79 |
| cjo | 70 | 19/07/79 |
| cmq | 16 - 20 | 13/07/80 |
| cpb | 4 - 5 | 27/07/81 |
| cqi | 1 - 11 | 24/07/84 |
| cqi | 19 - 23 | 24/07/84 |

III.I.II Vertical air photographs

A search of this collection was undertaken by a CUCAP librarian on the 18th August and no verticals photographs of the survey area were found.

III.II NATIONAL MONUMENTS RECORD CENTRE

III.II.I Oblique air photographs

NMRC Coversearch no. 1910700/01, consulted 11th October 2000.

| NMRC REF NO | DATE |
|--------------|----------|
| 4913 1 - 2 | 30/07/72 |
| 4913 3 - 4 | 05/08/72 |
| 4913 5 - 6 | 30/07/72 |
| 4913 7 - 9 | 24/07/91 |
| 4915 1 | 24/07/91 |
| 5012 1 | 30/07/72 |
| 5012 2 - 3 | 14/06/75 |
| 5012 4 - 8 | 31/05/75 |
| 5012 9 - 17 | 26/07/91 |
| 5012 18 - 20 | 04/07/95 |
| 5013 1 - 3 | 05/08/72 |
| 5013 4 - 6 | 14/06/75 |
| 5013 7 - 11 | 31/05/75 |
| 5013 12 - 13 | 25/07/81 |
| 5013 14 - 15 | 03/07/89 |
| 5013 16 - 24 | 24/07/91 |

| NMRC REF NO | | | | DATE |
|-------------|----|---|----|----------|
| 5013 | 25 | - | 29 | 30/06/94 |
| 5013 | 30 | - | 32 | 04/07/95 |
| 5014 | 1 | - | 5 | 14/07/73 |
| 5014 | 6 | - | 9 | 22/07/73 |
| 5014 | 10 | | | 09/07/74 |
| 5014 | 11 | | | 19/07/84 |
| 5014 | 12 | - | 14 | 24/03/82 |
| 5014 | 15 | - | 16 | 18/07/90 |
| 5014 | 17 | - | 20 | 24/07/91 |
| 5014 | 21 | - | 26 | 05/07/96 |
| 5014 | 27 | - | 30 | 04/07/95 |
| 5015 | 1 | | | 30/07/72 |
| 5015 | 2 | - | 6 | 16/07/77 |
| 5015 | 7 | - | 8 | 18/07/90 |
| 5015 | 9 | | | 25/07/91 |
| 5015 | 10 | | | 30/06/94 |
| 5015 | 10 | | | 30/06/94 |
| 5112 | 1 | | | 26/07/71 |
| 5112 | 2 | | | 08/08/71 |
| 5112 | 4 | | | 30/07/71 |
| 5112 | 16 | - | 17 | 26/07/78 |
| 5112 | 20 | - | 21 | 16/07/77 |
| 5112 | 33 | - | 39 | 26/07/91 |
| 5112 | 40 | | | 29/07/91 |
| 5112 | 41 | | | 02/08/91 |
| 5112 | 42 | - | 43 | 26/07/91 |
| 5113 | 1 | | | 15/07/72 |
| 5113 | 2 | - | 5 | 30/07/72 |
| 5113 | 6 | - | 8 | 10/07/72 |
| 5113 | 9 | - | 10 | 30/07/72 |
| 5113 | 12 | - | 15 | 26/07/78 |
| 5113 | 16 | - | 22 | 18/07/90 |
| 5113 | 23 | - | 33 | 26/07/91 |
| 5113 | 34 | - | 38 | 30/07/84 |
| 5114 | 1 | | | 30/07/72 |
| 5114 | 2 | - | 5 | 10/07/72 |
| 5114 | 6 | - | 7 | 16/07/72 |
| 5114 | 8 | | | 30/07/72 |
| 5114 | 9 | - | 10 | 19/07/75 |
| 5114 | 11 | | | 26/07/76 |
| 5114 | 12 | | | 16/07/84 |
| 5114 | 13 | | | 19/07/84 |
| 5114 | 14 | | | 15/07/79 |
| 5114 | 15 | | | 30/07/84 |
| 5114 | 16 | | | 29/07/91 |
| 5115 | 3 | - | 4 | 30/07/72 |
| 5115 | 5 | | | 14/07/73 |
| 5115 | 6 | - | 9 | 22/07/73 |
| 5115 | 10 | - | 12 | 30/07/73 |
| 5115 | 13 | | | 11/07/84 |
| 5115 | 16 | - | 19 | 25/07/91 |
| 5213 | 5 | | | 30/07/72 |
| 5213 | 6 | - | 9 | 30/07/84 |

| NMRC REF NO | DATE |
|--------------|----------|
| 5213 12 - 16 | 16/07/84 |
| 5213 19 - 20 | 30/07/84 |
| 5213 21 - 22 | 06/07/95 |
| 5214 1 - 2 | 10/07/72 |
| 5214 3 | 16/07/72 |
| 5214 10 | 18/07/90 |
| 5214 11 | 02/08/79 |
| 5214 12 - 21 | 03/07/90 |
| 5215 1 | 26/07/71 |
| 5215 2 | 30/07/72 |
| 5215 8 | 16/07/84 |
| 5215 9 | 19/07/84 |
| 5215 12 - 17 | 18/07/90 |

III.II.II Vertical air photographs

NMRC Coversearch no. 1910700/01 consulted 11 October 2000.

| SORTIE & POSITION | FRAMES | DATE | SCALE 1: |
|-------------------|-------------|----------|----------|
| CPE/UK/1879 | 4107 - 4112 | 06/12/46 | 10000 |
| CPE/UK/1880 | 4079 - 4083 | 06/12/46 | 10000 |
| 541/21 | 4105 - 4107 | 15/05/48 | 10000 |
| 541/31 | 3325 - 3330 | 18/05/48 | 10000 |
| 541/31 | 3397 - 3402 | 18/05/48 | 10000 |
| 541/31 | 3463 - 3468 | 18/05/48 | 10000 |
| 540/561 | 3184 - 3186 | 26/07/51 | 10000 |
| 543/9 F21 | 4 - 8 | 19/06/57 | 10500 |
| 543/9 F21 | 53 - 57 | 19/06/57 | 10500 |
| 543/9 F21 | 106 - 109 | 19/06/57 | 10500 |
| 543/9 F22 | 4 - 8 | 19/06/57 | 10500 |
| 543/1507 2F21 | 92 - 95 | 03/11/61 | 20000 |
| 543/1676 F21 | 105 - 107 | 02/03/62 | 11000 |
| 543/1676 F22 | 105 - 107 | 02/03/62 | 11000 |
| 543/2750 2F21 | 255 - 258 | 11/03/64 | 20000 |
| 543/2750 2F22 | 255 - 258 | 11/03/64 | 20000 |
| 58/1879 F21 | 1 - 2 | 08/12/55 | 9999 |
| 58/1879 F21 | 48 - 48 | 08/12/55 | 9999 |
| 82/1266 F21 | 25 - 29 | 08/08/55 | 10000 |
| 82/1266 F22 | 25 - 30 | 08/08/55 | 10000 |
| MAL67056 | 37 - 39 | 13/06/67 | 10500 |
| MAL67056 | 40 - 41 | 13/06/67 | 10500 |
| MAL67056 | 64 - 67 | 13/06/67 | 10500 |
| MAL71025 | 94 - 100 | 17/04/71 | 5000 |
| MAL71041 | 175 - 181 | 02/05/71 | 5000 |
| MAL71051 | 200 - 207 | 03/05/71 | 5000 |
| MAL71052 | 24 - 30 | 03/05/71 | 5000 |
| MAL80036 | 146 - 147 | 26/11/80 | 10000 |
| MAL80036 | 206 - 210 | 26/11/80 | 10000 |
| MAL80036 | 211 - 213 | 26/11/80 | 10000 |
| MAL81038 | 11 - 121 | 11/05/81 | 3000 |
| MAL81038 | 124 - 134 | 11/08/81 | 3000 |
| OS84199 | 161 - 165 | 01/08/84 | 8200 |
| OS86014 | 5 - 11 | 08/03/86 | 8050 |
| OS69285 | 27 - 27 | 15/06/69 | 7000 |
| OS69286 | 59 - 60 | 15/06/69 | 7000 |

| SORTIE & POSITION | FRAMES | DATE | SCALE 1: |
|-------------------|-----------|----------|----------|
| OS69286 | 63 - 68 | 15/06/69 | 7000 |
| OS69286 | 123 - 124 | 15/06/69 | 7000 |

III.III NORTH YORKSHIRE SITES AND MONUMENTS RECORD

III.III.I Oblique air photographs

Consulted 12th October 2000

| PHOTOGRAPHER | SORTIE | FRAME | DATE |
|--------------|--------|-------|----------|
| AJC | 70 | 38 | 18/06/86 |
| CUCAP | BJN | 22 | 12/07/72 |
| DNR | 509 | 24 | 22/07/73 |
| DNR | 550 | 12 | 30/07/72 |
| DNR | 1615 | 5 | 24/03/92 |
| DNR | 1065 | 11 | 16/07/77 |

III.IV SOUTH YORKSHIRE SITES AND MONUMENTS RECORD

III.IV.I Oblique air photographs

Consulted 4th October 2000.

| SORTIE | FRAMES | DATE |
|--------|-----------|----------|
| 36 | 11 | ? |
| 509 | 4 - 8 | 14/07/73 |
| 509 | 17 - 20 | 14/07/73 |
| 554 | 21a - 22A | 05/08/72 |
| 765 | 22 | ? |
| 860 | 15 | ? |
| 874 | 5 | 04/07/76 |
| 1270 | 5 - 6 | 26/07/78 |
| 1270 | 9 - 12 | 26/07/78 |
| 1542 | 20 | ? |
| 1618 | 6 | 06/07/82 |
| 2360 | 23 | ? |
| 2361 | 19 | 16/07/85 |
| 2362 | 3 - 8 | 16/07/84 |
| 2362 | 15 | ? |
| 2365 | 10 - 11 | 19/07/84 |
| 2371 | 16 - 27 | 30/07/84 |
| 2372 | 23 | 30/07/86 |
| 2422 | 15 - 22 | 18/07/90 |
| 2422 | 24 - 29 | 18/07/90 |
| 2422 | 35 - 36 | 18/07/90 |
| 2431 | 23 - 24 | 29/07/91 |
| 2432 | 25 | 02/08/91 |
| 2428 | 24 - 25 | 02/08/91 |
| DR42 | 31 - 34 | 15/07/79 |
| DR48 | 9 | 30/07/72 |
| DR48 | 21 - 24 | 30/07/72 |
| DR738 | 16 - 18 | 31/05/75 |
| DR738 | 20 - 24 | 31/05/75 |
| 2361 | 19 | 16/07/85 |

III.V WEST YORKSHIRE SITES AND MONUMENTS RECORD

III.V.I Oblique air photographs

Consulted 14th September 2000.

| WYSMR NO. | | FILM NO & FRAME | | DATE |
|-----------|-------|-----------------|---------|----------|
| 44 51 | 03 63 | dnr738 | 16-17 | 31/05/75 |
| 44 51 | 03 63 | wy230 | 16a-20a | 30/06/94 |
| 44 51 | 03 63 | wy241 | 6-8 | 04/07/95 |
| 44 51 | 04 49 | wy1 | 10 | 03/04/75 |
| 44 51 | 04 16 | wy241 | 2-5 | 04/07/94 |
| 44 51 | 02 98 | wy241 | 9-11 | 04/07/94 |
| 44 51 | 02 98 | dnr738 | 19-22 | 31/05/75 |

III.VI WAKEFIELD METROPOLITAN DISTRICT COUNCIL REGENERATION DEPARTMENT

III.VI.I Vertical air photographs

Consulted 20th September 2000.

| SORTIE | FRAMES | DATE | SCALE 1: |
|------------|-----------|----------|----------|
| MAL80036 | 212 - 213 | 26/01/80 | 10000 |
| MAL80036 | 207 - 208 | 26/01/80 | 10000 |
| MAL80036 | 148 - 148 | 26/01/80 | 10000 |
| JASAIR4790 | 125 - 129 | ? | ? |
| JASAIR4790 | 60 - 63 | ? | ? |
| MAL67054 | 39 - 39 | 13/06/67 | 10500 |

SNY 731 OVERSIZED FIG. 5 NOT SCANNED
SEE ORIGINAL.