

INDEX DATA	RPS INFORMATION
Scheme Title A1 Leemung - Scotch Corner.	Details Aerial photograph Assessment
Road Number A1	Date Oct '94
Contractor John Samuels.	
County	
OS Reference SE 29.	
Single sided ✓  Double sided  A3 ✗  Colour 0	

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**A1: LEEMING TO SCOTCH CORNER**

**AERIAL PHOTOGRAPH ASSESSMENT**

**OCTOBER 1994**

**COMMISSIONED BY**

**JOHN SAMUELS  
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CROMWELL, NEWARK,  
NOTTS, NG23 6JE**

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*Archaeological consultants for aerial photographic interpretation, accurate mapping and oblique aerial photography*

# **A1: LEEMING TO SCOTCH CORNER**

## **AERIAL PHOTOGRAPH ASSESSMENT**

**Rog Palmer MA MIFA**

### **INTRODUCTION**

This assessment was undertaken to examine specifically the relevant aerial photographs held in the Cambridge University Collection of Aerial Photographs (CUCAP). Interpretation and mapping was to cover a corridor 100m either side of the present A1 between Leeming and Scotch Corner but extended beyond this band in case any features that may continue into the corridor had been recorded there. Mapping was to be at a scale of 1:10000.

### **PHOTO INTERPRETATION AND MAPPING**

The CUCAP library included a number of prints taken in the summer drought of 1949 that provide a good record of the Roman town at Catterick Bridge (Frere and St Joseph 1983, 179-181) plus a number of other photographs that are not duplicated in the National Library of Air Photographs (NLAP), Swindon. Vertical photographs, taken in November 1991 at scales of 1:10000 and 1:3000, were loaned by W S Atkins and these were also examined. All photographs studied are listed in the Appendix to this report.

Within the corridor there were three locations recorded on CUCAP photographs. Interpretation and mapping of these was carried out following procedures described by Palmer and Cox (1993) with control information taken from the supplied 1:10000 base maps. Computer assisted rectification was carried out using AERIAL 4.2 software (Haigh 1993). Changes in landuse since 1949 and the high obliquity of these photographs created minor problems in finding and matching sufficient control points to ensure good rectification. AERIAL lists the error values for matching map and photograph control points from which mean accuracy of location can be calculated. These show that the details of the Roman town may be matched to within  $\pm 5.0\text{m}$  but the linear ditch (the suggested Roman camp at SE22729872) could not be located better than  $\pm 11.0\text{m}$ . Other obliques showed minimal control and sites have been sketched to an approximate size and location. Use of both methods is indicated, where relevant, in the gazetteer to this report. In all other cases interpreted features were sketched (sometimes using proportional measurements) directly on to the 1:10000 base map.

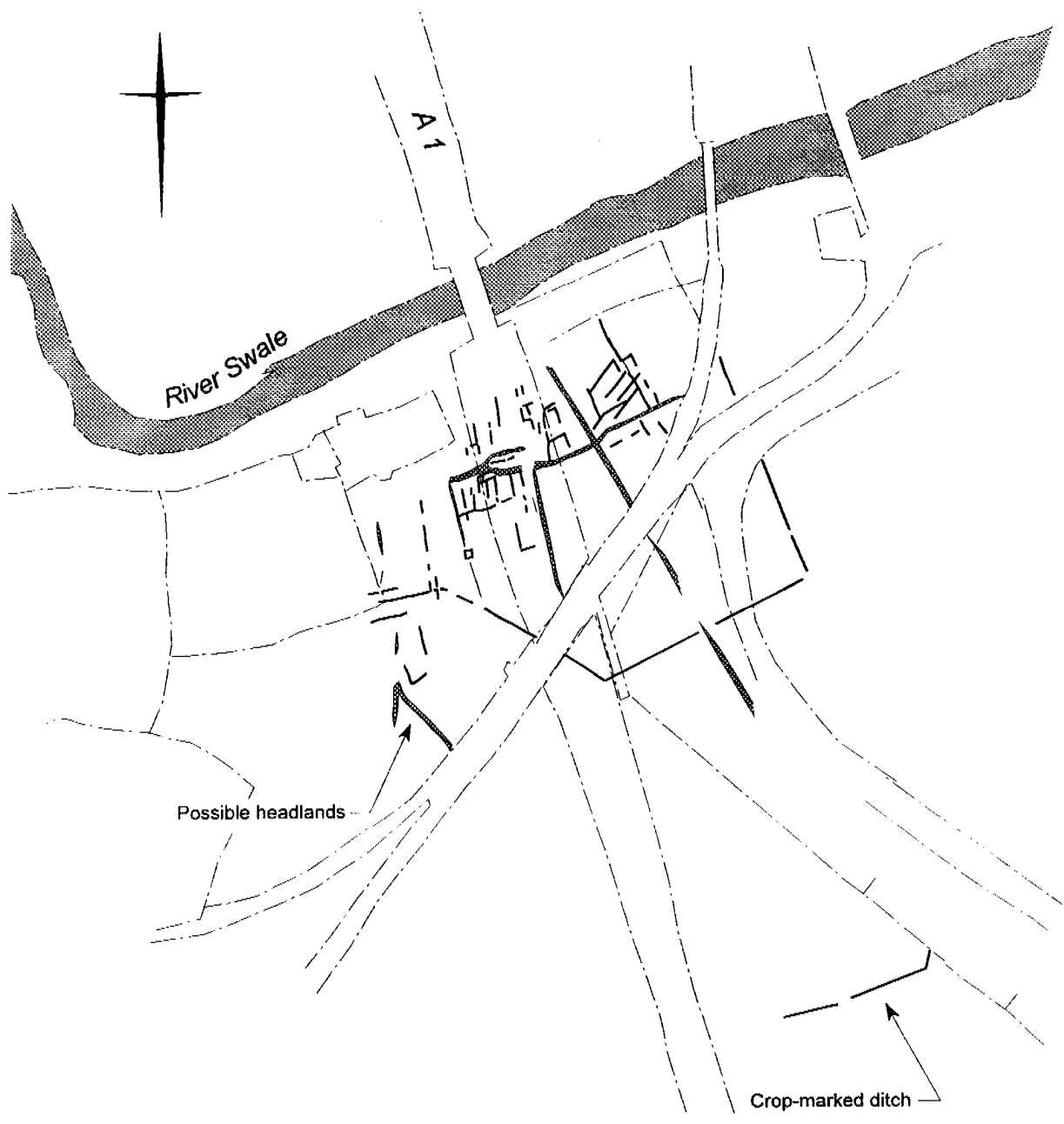
Vertical photographs were examined stereoscopically using 1.5x magnification and provided an extremely good record of the present (1991) state of the medieval landscape of the area. Ridge and furrow has been recorded on these and identified on the 1:10000 overlay as either 'extant', in good earthwork condition, or 'degraded' or 'traces', in poor condition or virtually erased. Quarries, soil-filled hollows, and some recent features have also been mapped where these may affect archaeological considerations.

## COMMENTARY

Features identified are listed, by eight-figure Grid Reference, in the gazetteer. Most of these are remains of medieval cultivation showing within modern fields. It is obvious, both from the pattern of many of the surviving modern field boundaries (which retain a characteristic reversed-S shape) and from the slightest of indications on the vertical photographs, that the medieval fields were once more extensive than can now be recorded. Some increase in the pattern may be found on the immediate post-war verticals (1945 and 1946) held by NLAP which were listed in the cover search obtained for an earlier aerial photographic assessment but apparently not examined (NLAP cover search JEW927422). The same cover search also shows a small number of earlier prints, dated 1940 and 1941, which may also prove informative. The 1:10000 mapping that accompanies this assessment shows the present-day record of medieval fields.

The CUCAP prints result mostly from the annual reconnaissances to Scotland made by Professor St Joseph. The dates of photography in the Catterick region suggest that the area was examined by him in transit. It may be assumed therefore that a search has been made by an experienced person for crop-marked features at times and during a number of years when they may be expected to have developed above sub-surface features. This should not be taken to indicate that the record of crop-marked features is complete for the area. Such is the nature of the variables that affect crop mark development that it is virtually impossible to determine when a near-complete record has been achieved. On productive soils (ie soils which readily allow the development of crop marks above sub-surface features), such as river terrace gravels, new features can be, and are, recorded on virtually every archaeological flight – and many of these areas have been studied for the past fifty years. With soils that are less productive and have not been subjected to intensive survey, such as in the assessment area, there may be a considerable quantity of archaeological information that has not produced crop marks or, if these have developed, which have not been observed and photographed. It should also be noted that medieval agriculture in the assessment corridor may have had a masking effect on any features surviving below it. This has been noted elsewhere (for example, in my current research on the clays of west Cambridgeshire, in particular from 1994 photography) and it is probable that if, or when, ridge and furrow is levelled by modern cultivation the resulting shallower soils may sometimes allow the development of crop marks above buried features. With consideration of the less responsive soils in the assessment area it is suggested that it may be valuable to examine all available aerial photographs. In particular, there are some mid to late July verticals listed in the NLAP cover search which may prove fruitful.

The 1:10000 digitally rectified plan of the Roman town at Catterick Bridge has been computer enlarged to 1:5000 against a similarly enlarged modern background. This plan (Figure 1) is included for illustration only and has not the accuracy to serve as a reliable source for making measurements.



- Archaeological feature - mostly traces of foundations
- ▨ Traces of road metalling
- - - Modern boundary

Ridge and furrow is not shown



Figure 1. Enlarged drawing of Roman features at Catterick Bridge. Scale 1:5000

## GAZETTEER

The following gazetteer lists features identified during interpretation which have been mapped at 1:10000. Each entry has an eight-figure National Grid Reference, a photograph number and a brief description. In cases where the photograph number refers to a vertical print this is just one of the photographs of each stereoscopic pair examined.

	<i>NGR</i>		<i>Photo number</i>	<i>Description and notes</i>
SE	2252	9861	BKS/9127053	Levelled bank. Probably a headland.
SE	2250	9882	BKS/9127053	Levelled ridge and furrow (cut by A1) and headland.
SE	2251	9878	AWS 69-70	Post-medieval ditches. Cut through furlongs.
SE	2261	9886	BKS/9127053	Levelled ridge and furrow (cut by A1).
SE	2270	9898	BKS/9127053	Ridge and furrow.
SE	2277	9840	RG 65	Possible ring ditch. Poorly sketched location. Adjacent parish boundary was once a stream.
SE	2272	9872	DQ 85-86 AAB 20	Crop-marked linear ditch with probable entrance gap and angled corner at its E end. Alignment of ditch changes slightly each side of entrance. Suggested as part of Roman camp. Adjacent features cut through ridge and furrow. Computer rectified plan at 1:10000.
SE	2230	9930	BKS/9127085	Ridge and furrow and headlands.
SE	2255	9905	DC 54-60 DQ 80-84 AAB 18-28	Part of Roman town showing as parch marks in drought of 1949 and under excavation in 1959. Includes part of town wall, roads and some internal structures. Parts of the wall were later used as headlands for medieval fields. Computer rectified plan at 1:10000.
SE	2395	9678	BKS/9127056	Ridge and furrow with earthwork ditch cutting across furlongs.
SE	2338	9769	BKS/9127054	Levelled ridge and furrow.
SE	2357	9744	BKS9127055	Parallel almost levelled banks. Possibly ridge and furrow remnants.
SE	2366	9775	BKS/9127055	Ridge and furrow, earthwork enclosures, track/hollow way.
SE	2377	9710	BB 9	Crop-marked ditches forming rectangular enclosures. Possibly recent field boundaries. Computer rectified plan at 1:10000.
SE	2300	9835	MO 25-26	Crop-marked linear ditches forming rectangular enclosures abutting Roman road. Poorly located sketch mapping.
SE	2481	9555	BKS/9127058	Levelled bank (?headland) with traces of possible ridge and furrow.
SE	2403	9697	BKS/9127056	Straight banks. Possible traces of recent field divisions.
SE	2443	9642	Figure 4	No evidence for features C4. Lines can be seen on 1991 verticals as on Figure 4 but these are modern agricultural marks.
SE	2455	9648	BKS/9127057	Levelled ridge and furrow abutting hollow containing deeper soil on its W side.
SE	2490	9625	BKS/9127057	Quarry.
SE	2409	9747	BKS/9127055	Ditch separating two furlongs of ridge and furrow.
SE	2555	9445	BKS/9127059	Possible quarry.
SE	2559	9457	BKS/9127059	Possible quarry. Abuts area SE25589466.
SE	2558	9466	BKS/9127059	Area of dark soil. Very humpy ground. Possibly area of quarrying?
SE	2563	9486	BKS/9127059	Possible quarry.
SE	2569	9456	BKS/9127059	Levelled headlands and ridge and furrow.
SE	2510	9554	BKS/9127058	Possible levelled headland.

	<i>NGR</i>		<i>Photo number</i>	<i>Description and notes</i>
SE	2555	9540	BKS/9127058	Hollow filled with dark soil.
SE	2667	9280	BKS/9127075	Ridge and furrow. Changes character: narrow rig at W end.
SE	2671	9254	BKS/9127074	Traces of ridge and furrow.
SE	2687	9246	BKS/9127074	Traces of ?DMV.
SE	2692	9224	BKS/9127074	DMV plus ridge and furrow. Traces of levelled DMV to W.
SE	2609	9394	BKS/9127060	Hollow filled with dark soil.
SE	2662	9364	BKS/9127061	Ridge and furrow.
SE	2680	9336	BKS/9127061	Ridge and furrow.
SE	2690	9354	BKS/9127061	Ridge and furrow and quarry.
SE	2696	9313	BKS/9127061	Levelled ridge and furrow.
SE	2600	9456	BKS/9127059	Hollow filled with dark soil.
SE	2633	9433	BKS/9127060	Ridge and furrow traces. Two furlongs.
SE	2658	9402	BKS/9127060	Hollow filled with dark soil.
SE	2740	9180	BKS/9127073	Disturbed area. Possible quarry or very uneven ground.
SE	2762	9135	BKS/9127073	?Soil-filled hollow.
SE	2780	9130	BKS/9127073	Quarry.
SE	2795	9171	BKS/9127064	Possible headland and traces of ridge and furrow.
SE	2717	9235	BKS/9127074	Bank. Headland or recent boundary.
SE	2730	9278	BKS/9127062	Old quarry.
SE	2737	9248	BKS/9127062	Two parallel ridges. Probably recent field divisions.
NZ	2174	0190	BKS/9127032	Pipeline?
NZ	2180	0158	BKS/9127031	Possible ridge and furrow or parallel banks.
NZ	2192	0120	BKS/9127031	Possible ridge and furrow traces.
NZ	2145	0276	BKS/9127033	Narrow ridge and furrow.
NZ	2156	0280	BKS/9127033	?Continuation of old stream course.
NZ	2159	0215	BKS/9127032	Hollow with dark soil fill.
NZ	2170	0285	BKS/9127033	Traces of parallel ridges, maybe once ridge and furrow.
NZ	2178	0240	BKS/9127032	Course of ?canalised stream. Probable other watercourse joining it at NZ21650261 from SW.
NZ	2180	0205	BKS/9127032	Headlands and traces of ridge and furrow.
NZ	2162	0324	BKS/9127033	Hollow with dark soil fill.
NZ	2165	0395	BKS/9127034	Hollow lying parallel to modern A1.
NZ	2187	0338	BKS/912703	?Ridge and furrow, possibly steam ploughing.
NZ	2192	0324	BKS/9127033	?Ridge and furrow, possibly steam ploughing.
NZ	2190	0357	BKS/9127033	Traces of ridge and furrow.
NZ	2115	0473	BKS/9127035	Natural hollow with deep soil fill.
NZ	2137	0482	BKS/9127035	Natural hollow with deep soil fill.
NZ	2153	0407	BKS/9127034	Headland and ridge and furrow. Possible trackway along parish boundary.
NZ	2172	0446	BKS/9127035	Ridge and furrow, possibly steam ploughing. Linear features, probably natural ?cracks.
NZ	2191	0450	BKS/9127035	Ridge and furrow, ?trackway and quarrying.
NZ	2199	0430	BKS/9127034	Degraded ridge and furrow.
NZ	2119	0589	BKS/9127036	Ridge and furrow, part degraded.

	<i>NGR</i>		<i>Photo number</i>	<i>Description and notes</i>
NZ	2128	0577	BKS/9127036	Mound. Tumulus on OS 1:10000.
NZ	2130	0565	BKS/9127036	Ridge and furrow. Narrow at S end.
NZ	2140	0582	BKS/9127036	Traces of ridge and furrow.
NZ	2147	0561	BKS/9127036	Traces of ridge and furrow. Possible ditched feature.
NZ	2170	0505	BKS/9127035	Traces of narrow ridge and furrow.
NZ	2115	0600	BKS/9127037	Ridge and furrow, possibly steam ploughing.
NZ	2120	0680	BKS/9127038	Ditched boundaries and traces of ridge and furrow.
NZ	2146	0668	BKS/9127037	Headland and ridge and furrow.
NZ	2142	0699	BKS/9127038	Disturbed area. Ridge and furrow, headland and traces of ridge and furrow.
NZ	2175	0620	BKS/9127037	Headland and traces of ridge and furrow.
NZ	2180	0688	BKS/9127006	Ridge and furrow.
NZ	2190	0650	BKS/9127007	Slight traces of ridge and furrow.
NZ	2105	0767	BKS/9127039	Ridge and furrow.
NZ	2156	0795	BKS/9127006	Possible traces of ridge and furrow.
NZ	2190	0700	BKS/9127006	Possible ridge and furrow. May be steam ploughing or recent agriculture.
NZ	2235	0051	BKS/9127051	Ridge and furrow.
NZ	2235	0060	BKS/9127051	Ridge and furrow.
NZ	2235	0096	BKS/9127050	Ridge and furrow.
NZ	2200	0158	BKS/9127031	Probable ridge and furrow.
NZ	2222	0172	BKS/9127031	Earthwork ditch with disturbed area to its W.
NZ	2215	0216	BKS/9127032	Possible ridge and furrow traces.
NZ	2203	0362	BKS/9127033	Ridge and furrow.
NZ	2200	0386	BKS/9127034	Ridge and furrow.
NZ	2200	0509	BKS/9127009	Ridge and furrow.
NZ	2200	0540	BKS/9127009	Ridge and furrow.
NZ	2210	0842	BKS/9127004	Traces of ridge and furrow.
NZ	2232	0864	BKS/9127004	Traces of ridge and furrow.
NZ	2240	0847	BKS/9127004	Traces of ridge and furrow.
NZ	2245	0038	BKS/9127051	Degraded ridge and furrow.



## References

- Frere, S S and St Joseph, J K S, 1983. *Roman Britain from the Air*. Cambridge
- Haigh, J G B, 1993. A new issue of AERIAL – Version 4.20. *AARGnews* 7, 22-25
- Palmer, R and Cox, C, 1993. *Uses of aerial photography in archaeological evaluations*. *IFA Technical Paper* 12

## APPENDIX

### *Aerial photographs examined*

*Source: Cambridge University Collection of Aerial Photographs*

#### Oblique photographs

SE227987	DQ 85-86	10 July 1949
	MO 25-26	22 July 1953
	RG 65	18 July 1955
	AAB 20-21	13 July 1959
	AQA 28	2 August 1966
	BEV 48-49	4 February 1971
SE228985	MO 25-26	22 July 1953
	RG 65	18 July 1955
SE225992	B 24-25	20 July 1945
	DC 54-60	2 July 1949
	DQ 80-84	10 July 1949
	AAB 18-28	13 July 1959
	ACB 32	19 July 1960
	AQA 28	2 August 1966
	AWS 68-70	31 January 1969
	BEV 48-49	4 February 1971

In addition there were a number of panoramic views north from Catterick to show the line of the Roman road. These were otherwise uninformative and are not listed here.

#### Vertical photographs

RC8-JJ 186-193	8 May 1987	1:10000
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These prints result from a survey which crossed the A1 at Catterick race course. They held no relevant archaeological information.

*Source: BKS Surveys Ltd (via W S Atkins)*

#### Vertical photographs

91 27: 003-019	14 November 1991	1:10000
91 27: 026-041	14 November 1991	1:10000
91 27: 050-065	14 November 1991	1:10000
91 27: 072-087	14 November 1991	1:10000

Prints taken on the same date at 1:3000 were not comprehensively examined.

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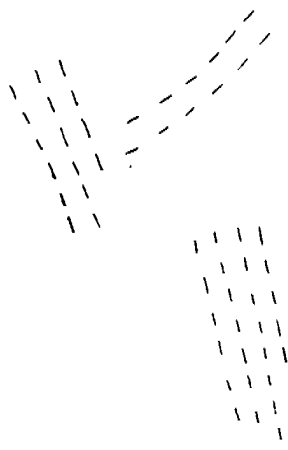
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DL

LEEMING -

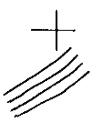
SCOTCH CORNER

1:10000

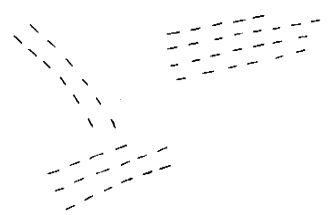


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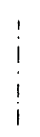
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23



Soil-filled hollow

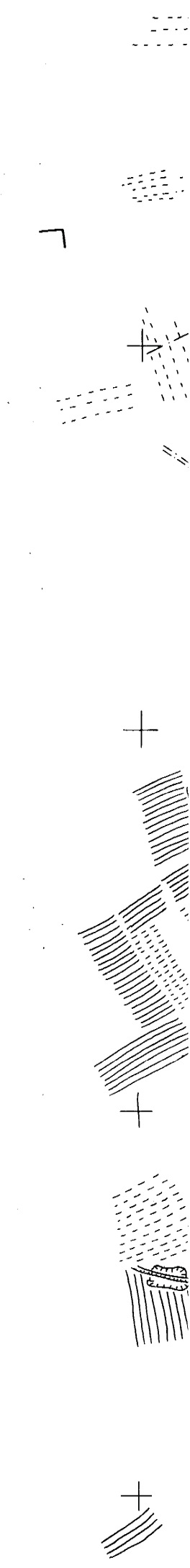


Modern feature



Old quarry

at 1:10000
<i>Series of latest photography</i>
1987
1991
Not consulted



— Sub-surface archaeological feature

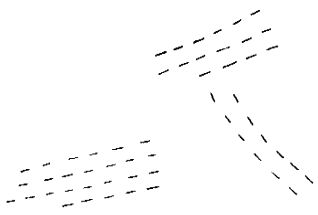
⊕ Headland or bank

▨ Ridge and furrow (extant: 1991)

▧ Ridge and furrow (degraded, or traces only: 1991)

Archaeological information interpreted and sketched from selected aerial photographs.  
To overlay 1:10000 base map

Sketch mapping at 1:10000	
<i>A P sources</i>	<i>Date of latest photo</i>
CUCAP	1987
BKS SURVEYS	1991
NLAP	Not consulted



21  
08+

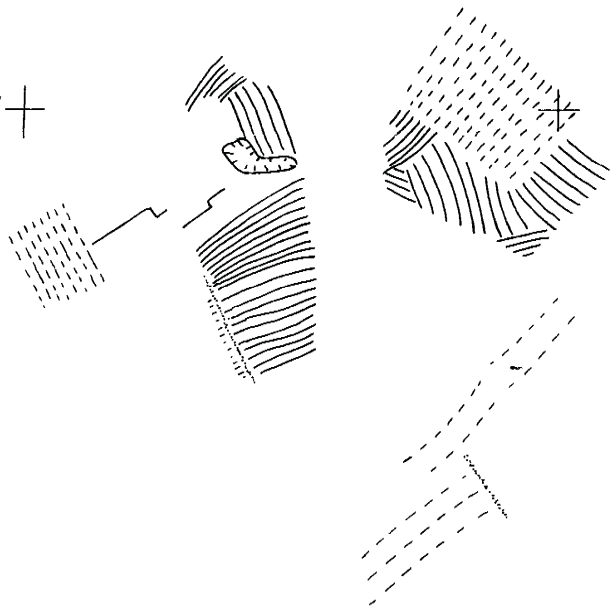
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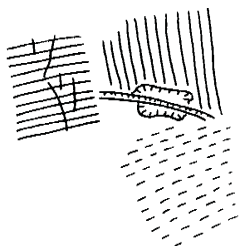
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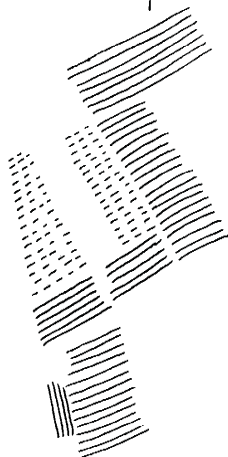
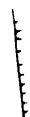
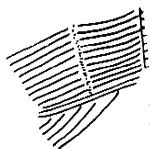
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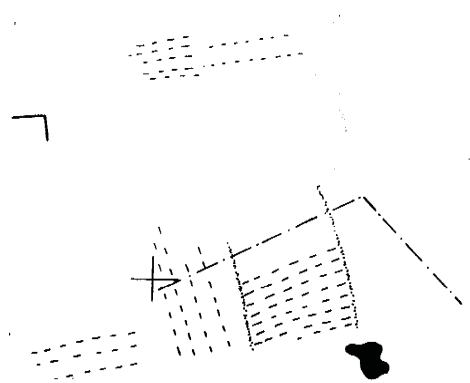
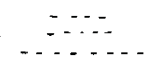
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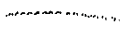
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Roman town and cut features only.  
For ridge and furrow see southern map.





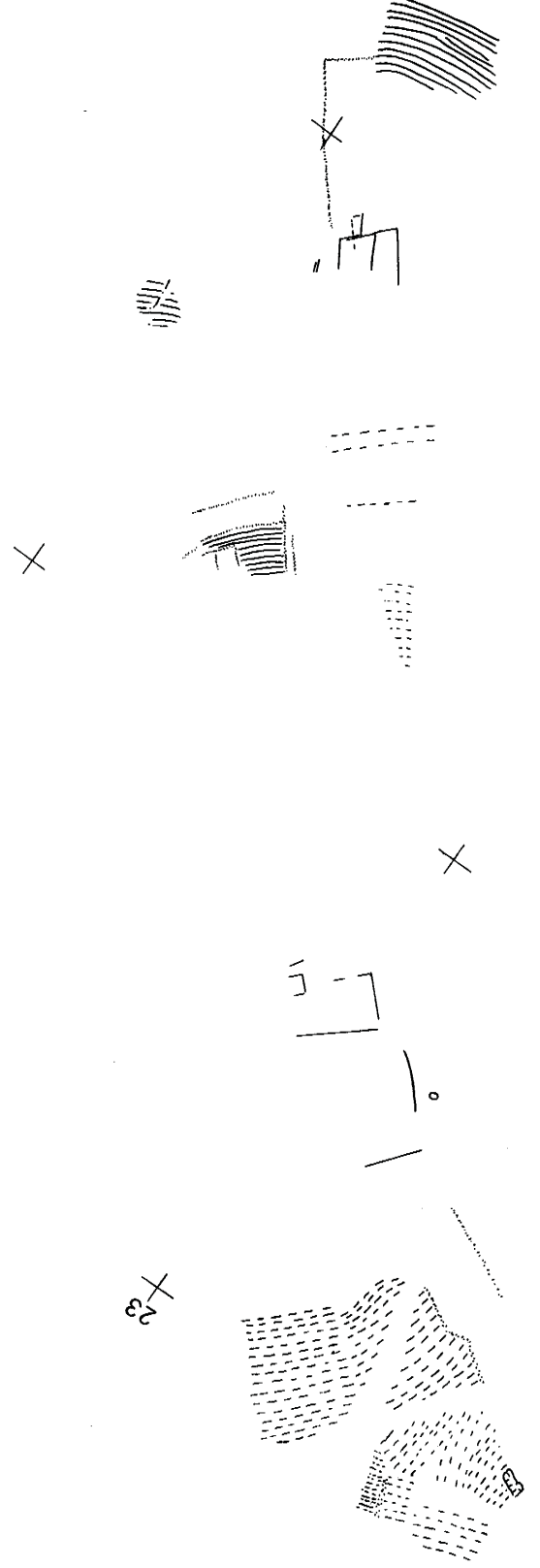
95+



96-24



94-25



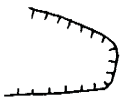
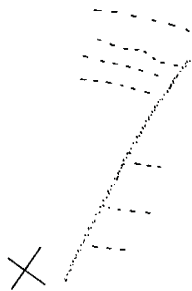
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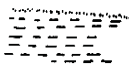
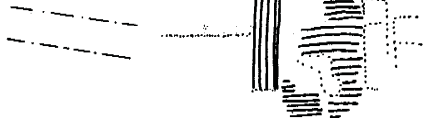
Ridge and furrow only.  
For other features see northern map.

28

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SE 27



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93  
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