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**A1(M) REDHOUSE TO FERRYBRIDGE  
IMPROVEMENT  
North of the Went Valley**

**Archaeology: Stage II  
Draft Proposals**

OCTOBER 1994

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tc671/v1/1986

**ENVIRONMENTAL PLANNERS  
AND SCIENTISTS  
LANDSCAPE ARCHITECTS  
AND MANAGERS  
ARCHITECTS**

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### Drawings

RPS 1	LOCATION PLAN OF SCHEME
RPS 2, 3	SMR & AP SITES, AND ROUTE OPTION CORRIDOR

## SUMMARY

RPS Clouston produced the Stage I report for this route option in August 1994.

At that time, it was suggested that there certain archaeological sites would be affected by the proposal, but that it was not possible to quantify their impact upon the scheme.

In such cases, it was recommended that further evaluation should be undertaken, in order to identify the constraints, and to anticipate the necessary mitigations.

The report also proposes that the rapid walkover of the route, which has not been possible hitherto because of agricultural constraints, should be now be undertaken.

RPS Clouston has produced this report, which sets out, in some detail, the further archaeological work which is recommended. However, it should be noted that such recommendations remain provisional until consultations with external bodies have taken place.



## 1 Introduction

- 1.1 RPS Clouston have produced an *Stage I Archaeological Study Report* (August 1994) on behalf of Owen Williams, consulting engineers for the Department of Transport (DOT) for the A1(M) Redhouse to Ferrybridge Improvement proposals, for the revised route north of the Went Valley. The Stage I study comprised a Sites and Monuments Record (SMR) search, aerial photographic archive study, and the inspection of selected geotechnical trial pits.
- 1.2 A walkover survey of the proposed route north of Went Bridge was not possible at the time of its announcement because of the state of the crops.
- 1.3 The August 1994 report included a consideration of national and local policies, a discussion of the archaeological context of the area, and an assessment of the known archaeological features along the route corridor. The conclusions were that there was a requirement for further work to enable mitigation measures to be prepared.
- 1.4 This document sets out proposals for future work for consideration by English Heritage and the County Archaeologists. The detailed assessment of potential impact is limited by the scale of the design drawings available for reference (1:10,000 scale), which show the route corridor only.
- 1.5 As yet, the comments of English Heritage and the County Archaeologists have not been sought. However, such consultations will need to take place before the work detailed herein can be deemed to be acceptable, and commenced accordingly.

## 2 Methodology

2.1 The methods which may be used to carry out a more detailed field survey include:

- systematic field walking
- test pitting
- geophysical survey
- trial trenching

2.2 The choice of methods and whether to recommend their use in further survey work is based upon an assessment of the potential, state of knowledge, type and landuse history of each site. Sufficient is already known about certain sites for mitigation procedures to be proposed at this stage. Others require more information in order to enable an assessment to be made, and it is these which will require further evaluation.

2.3 Fieldwalking is a reasonably rapid method for locating areas of human activity which result in the production of dateable material remains, such as pottery, flintwork, industrial or domestic waste. It involves the systematic collection of artefacts from the surface by a team of trained archaeologists. It can only be carried out on ploughed fields, preferably after the soil has had a number of weeks to weather. It is not effective on deeply buried sites, for example alluvial areas or colluvium deposits at the foot of slopes. There are two methods commonly adopted: a rapid fieldwalk and a detailed fieldwalk. The first involves 2 or 3 trained archaeologists walking the line of the proposal 20m apart and noting any significant artefacts on the surface. The detailed fieldwalk involves gridding a targeted area possibly located using the rapid method, and collecting all significant artifacts.

2.4 Test Pitting is undertaken to assess the artefact density of the topsoil in situations where the surface is not available through ploughing. It involves the excavation by hand of a small (usually 1m x 1m) pit and the 3D recording of all artefacts.

2.5 Geophysical Survey encompasses a number of techniques for the remote sensing of buried features. The commonest methods used for archaeological survey are:

resistivity, which measures the electrical resistance of the soil, and which can detect drier or damper areas caused by buried features. This involves moving an array of probes across a grid on the site.

**magnetometry**, which measures the local fluctuations in the earth's magnetic field caused by buried features. This involves a hand-held detector which is moved above the surface of the soil (approx 300mm) on a surveyed grid.

**magnetic susceptibility**, which measures the degree of magnetic enhancement in the soil caused by human activity. This involves taking small soil samples for analysis in a laboratory.

Other geophysical methods include metal detecting, radar and X-ray tomography, sonar, gravimetry and dousing, which may be used in special circumstances. The effectiveness of any particular technique depends upon local geological and landuse factors and can be unpredictably variable. There are specialist archaeological geophysical contractors available to carry out this type of work. The results require archaeological interpretation, and may indicate that further work is necessary to define the features more precisely. It can be equally effective on ploughed fields or pasture. Woodland can cause problems, because of the difficulties of sighting and survey, and fencelines and other modern features may mask the effects of otherwise productive sites, by distorting or cancelling out signals.

- 2.6 Trial trenching is a method of examining a sample of buried features or land surfaces in order to define their characteristics more precisely. It entails the excavation of trenches initially by machine, supervised by archaeologists. The trenches are then cleaned and any archaeological features recorded. Features are excavated only to the extent required to elucidate the potential of the site. Trial trenching is not a substitute for full excavation.
- 2.7 Not all these methods of field survey may be appropriate or even possible in a given circumstance. Geological and other ground conditions may make geophysical methods ineffective, systematic fieldwalking is not possible on permanent pasture, and test-pitting and trial trenching may not be permitted by landowners, who are not obliged to allow such ground breaking activities until after the making of the Orders. These factors have been borne in mind in the recommendations made in this report.

### 3 Proposals

- 3.1 Fieldwalking. The entire route section should be subjected to a rapid fieldwalk, in order to check for earthworks and artefact scatters.

In addition, areas of known archaeology should be the subject of more detailed fieldwalking, where conditions are appropriate. As many of the sites identified in Table 1 are cropmark sites, the detailed fieldwalking may assist in determining what activities, if any, were carried out at, or near, them. The cropmark features are frequently linear ditches, usually interpreted as field or track boundaries, but artefact scatters may indicate that there was unenclosed occupation associated with them. With enclosures the probability of finding occupation evidence is higher. The sites on which detailed fieldwalking is recommended are:

RPS 57}	3 hectare	Iron Age/Romano British cropmark features. Surface artefact scatters likely.
RPS 58}		
RPS 59	1 hectare	?Edge of possible IA/RB settlement or field system. Artefact scatters possible.
RPS 63	4 hectare	Iron Age/Romano British settlement enclosure (possibly small farmstead). Artefact scatter likely.
RPS 64		As 63 above. These and similar sites may all prove to be related/connected as elements of a wider landscape.
RPS 76	2 hectare	Prehistoric and Romano British cropmark features, Artefact scatter likely.
OW 011	6 hectares	Area of field systems and enclosures adjacent to Sites RPS 82 and 83. Dating evidence necessary to assess importance.

- 3.2 Geophysical survey. Experience has shown that magnetometry is a most effective geophysical method on the type of geology and topography along the proposed road line. It should be targeted on areas of potential occupation, as indicated by the desk top study. The enclosures shown on air photographs are of the highest priority. Target sites are listed below. In each case where geophysical survey is recommended, it is thought that aerial photographs have not shown the full extent and complexity of buried features. Magnetometry should indicate whether other features survive.

This in turn should indicate the likely implications for mitigation.

Site 57	1 hectare
Site 63}	4 hectare
Site 64}	
Site 76	1 hectare

- 3.3 Trial Trenching. Trial trenching is most effective in areas where the date and status of already located sites are still in doubt. This means that trenching may be required on some sites after fieldwalking and/or geophysics have been carried out, if these techniques do not clarify the archaeological potential sufficiently. Trial trenching is not recommended for any sites at this stage.

4 Summary of Sites affected by the Route Corridor

4.1 All the sites listed in the SMR and the new sites located on OW air photographs are considered here, with the numbers as given in the RPS Clouston *Archaeological Study* (August 1994). All the information available has been considered.

RPS map no	RPS site no	County	SMR No	Evidence	Description	Recommendations
2	51	WY	---	Geology and topography	Limestone gorge, with possible palaeolithic sites	No further action at this stage
2	57	WY	26	AP cm	Multiple ditched square enclosure with linear ditches (IA/RB?)	Fieldwalking; geophysical survey
2	58	WY	27		Linear ditch with assoc small rectangular enclosure (IA/RB)	Fieldwalking (in association with 57 above)
2	59	WY	21		Part of sub-rect enclosure and ?assoc rect enclosures & linear ditches (?IA/RB)	Field-walking
2	63	NY	91650 0000		Enclosure (IA/RB)	Fieldwalking & geophysical survey of all areas within the corridor S & E of Long Plantation*

2/3	64	NY	91660 0000		Enclosure (IA/RB) - see 63 & note* below	Fieldwalking; geophysical survey*
2/3	71	WY	11		Linear ditches, small square enclosure of uncertain nature (IA/RB)	No further action at this time*
3	76	WY	9		Part of field system, containing rectangular enclosure (IA/RB)	Fieldwalking; geophysical survey
3	82	WY	2		Two adjoining sub- rectangular enclosures, associated linear ditches & track	No further action at this time
3	84	WY	3		Group of field names in 'park', outline of medieval or later park. <u>Solid outline</u> refers to field name 'dyke', referring to either a natural stream line or a possible park pale.	No further action at this stage

3	010	WY	---	OW AP	Field system, trackways and enclosures	Fieldwalking
3	049	WY	---	OW AP	Field system, trackways and enclosures	No further action at this stage
3	054	WY	---	OW AP	Field boundaries	No further action at this stage

\* Sites 63, 64, 71, 87-91 are all likely to be interrelated features of an Iron Age/Romano-British landscape which will need to be evaluated as a whole before mitigation proposals can be made.

Abbreviations:

WY	West Yorkshire
NY	North Yorkshire
OW AP	Owen Williams air photo
cm	cropmark
IA/RB	Iron Age/Romano-British
BA	Bronze Age
TP	geotechnical test pit



## 5 Conclusions

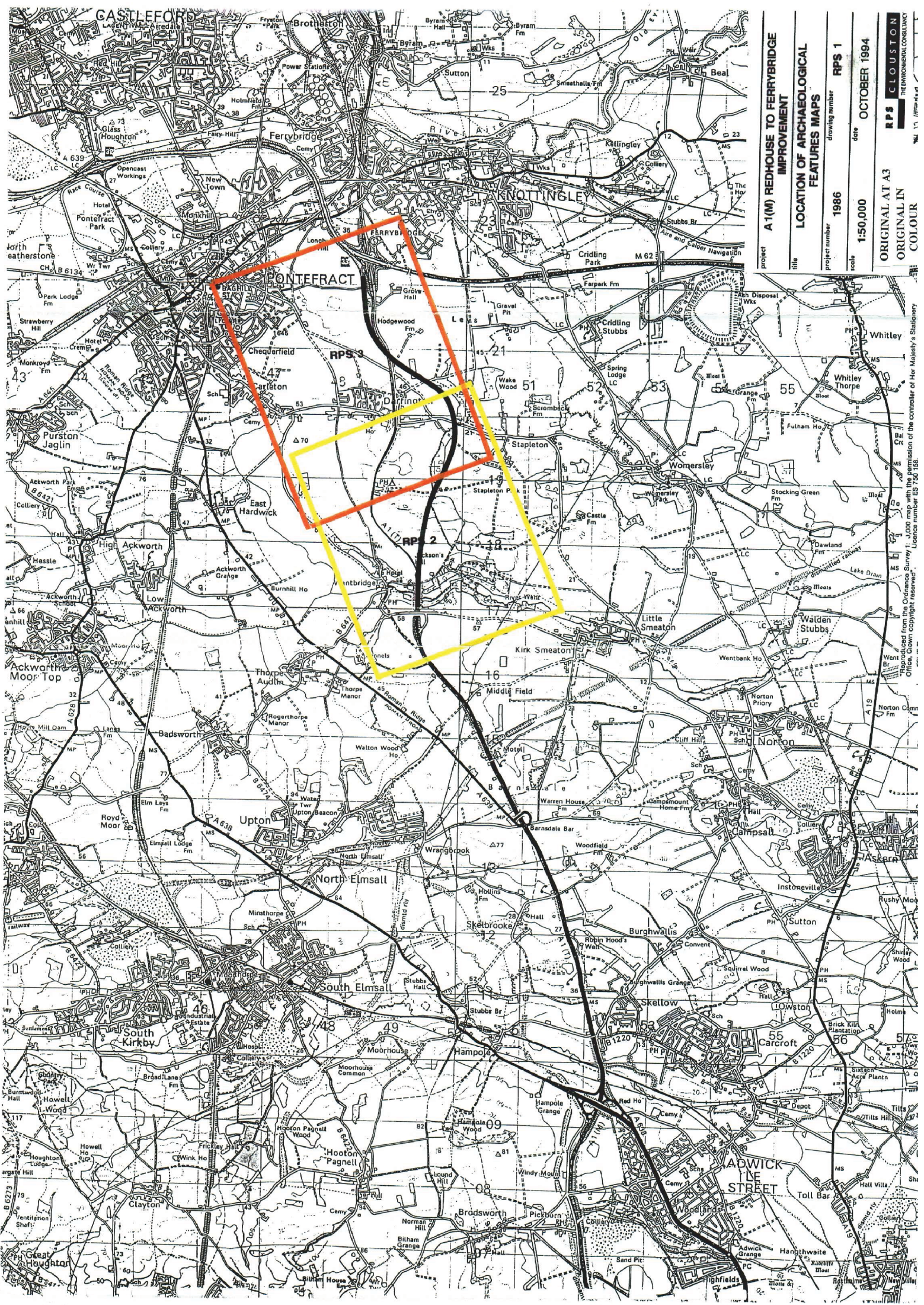
- 5.1 It is recommended that the rapid walkover of the route corridor (version as at 2/9/94) should now take place. Additionally, 5 areas comprising 16 ha should be the subject of detailed fieldwalking. These activities would need to be timetabled to take place after ploughing, in the autumn of 1994. There are 3 areas totalling 6 ha where geophysical survey is recommended. This is best carried out before the crop has grown on arable fields, but it can be undertaken at any time on pasture.

No sites are recommended for trial trenching at this stage, but there may be a requirement in future to carry out trenching on sites whose form, extent, function and significance remain unclear.

Moreover, it is appreciated that ground disturbing activities cannot be carried out on behalf of the Department until compulsory purchase orders have been made, unless specific permission has been granted by the land owner.

- 5.2 The geophysical surveys would be carried out by a specialist contractor. Interpretation and integration of the results with the other sources of data would be required. RPS Clouston maintains a list of preferred geophysical contractors, with whom we have undertaken a number of major projects.
- 5.3 The fieldwalking could be undertaken to an agreed brief by RPS Clouston in-house as part of the evaluation process.





project **A1(M) REDHOUSE TO FERRYBRIDGE IMPROVEMENT**  
 title **LOCATION OF ARCHAEOLOGICAL FEATURES MAPS**  
 project number **1986** drawing number **RPS 1**  
 scale **1:50,000** date **OCTOBER 1994**  
**RPS CLOUSTON**  
 THE ENVIRONMENTAL CONSULTANTS  
 ORIGINAL AT A3 ORIGINAL IN COLOUR

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project: **A1(M) REDHOUSE TO FERRYBRIDGE IMPROVEMENT (NORTH OF WENT VALLEY)**  
 title: **ARCHAEOLOGICAL FEATURES**

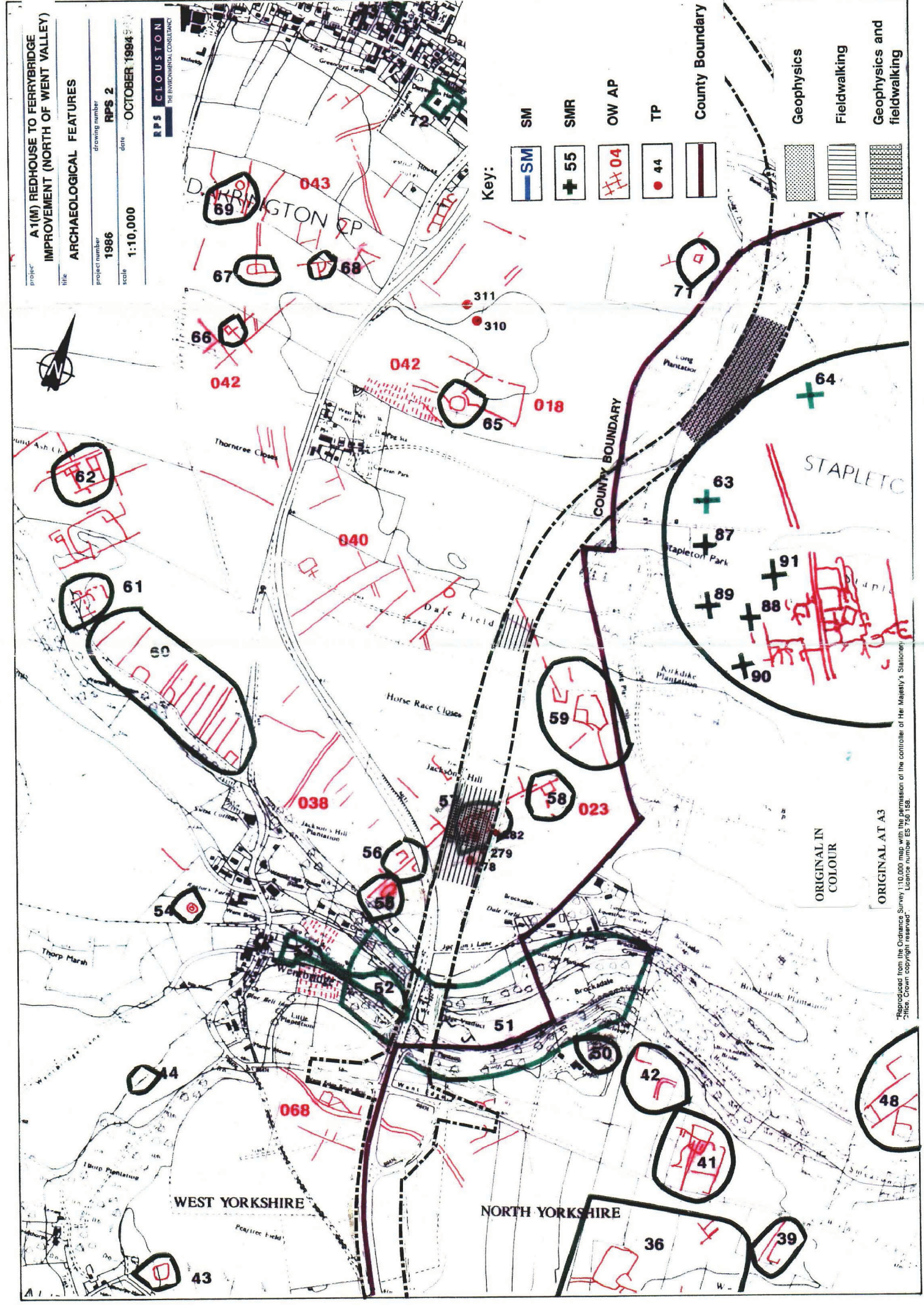
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 project number: **1986**  
 date: **OCTOBER 1994**  
 scale: **1:10,000**

**RPS CLOUSTON**  
 THE ENVIRONMENTAL CONSULTANCY

Key:

	<b>SM</b>		<b>SMR</b>		<b>OW AP</b>		<b>TP</b>		<b>County Boundary</b>
	<b>55</b>		<b>55</b>		<b>04</b>		<b>44</b>		<b>County Boundary</b>

	<b>Geophysics</b>
	<b>Fieldwalking</b>
	<b>Geophysics and fieldwalking</b>



ORIGINAL IN COLOUR

ORIGINAL AT A3

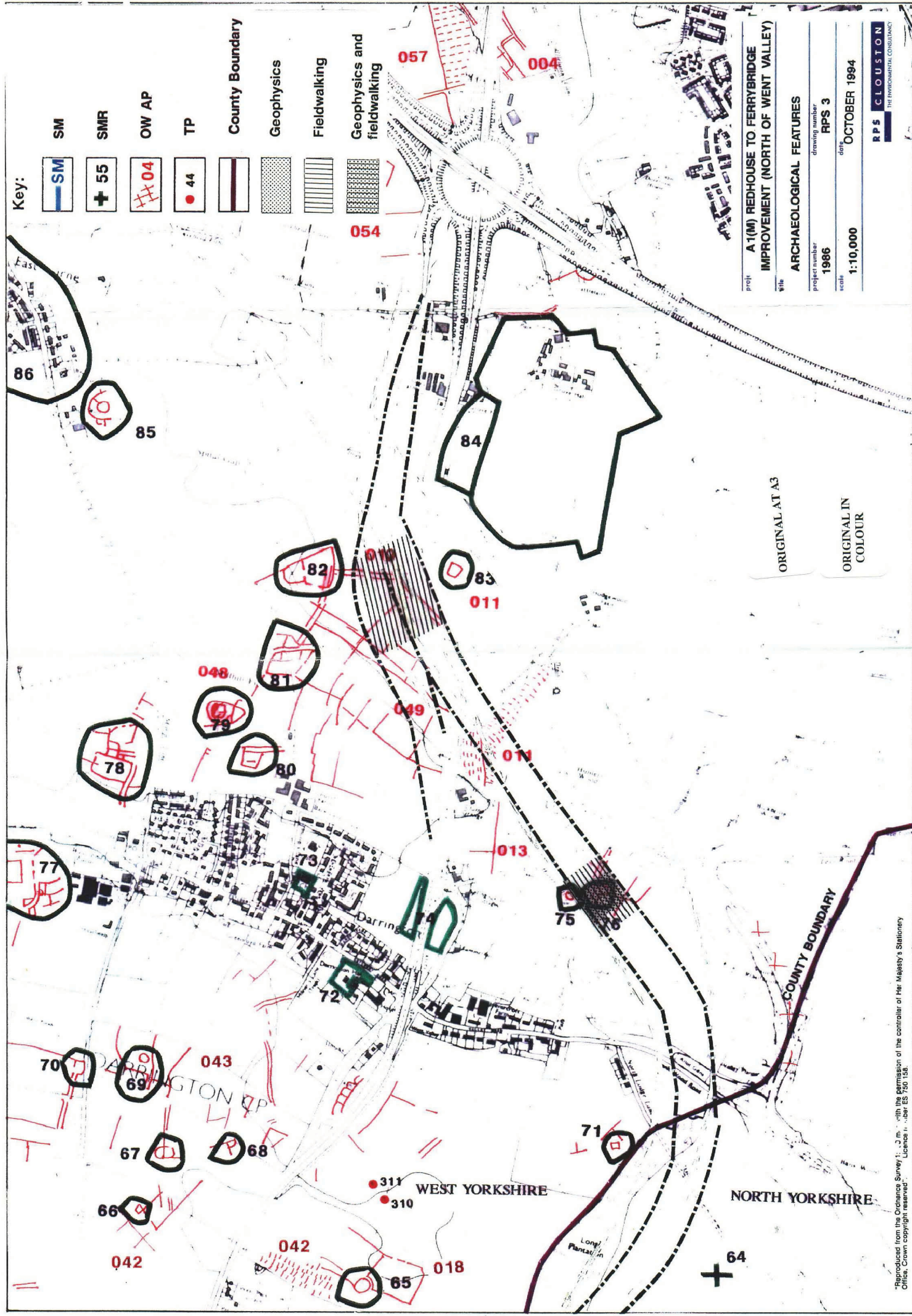
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Key:

	SM
	SMR
	OW AP
	TP
	County Boundary
	Geophysics
	Fieldwalking
	Geophysics and fieldwalking

project A1(M) REDHOUSE TO FERRYBRIDGE  
 IMPROVEMENT (NORTH OF WEST VALLEY)  
 site  
 ARCHAEOLOGICAL FEATURES  
 drawing number RPS 3  
 1986  
 date OCTOBER 1994  
 scale 1:10,000  
 RPS CLOUSTON  
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ORIGINAL AT A3

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