

INDEX DATA	RPS INFORMATION
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Contractor <i>RPS</i>	
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Single sided <input checked="" type="checkbox"/> Double sided A3 <input type="checkbox"/> Colour <input type="checkbox"/>	

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HIGHWAYS AGENCY

M25 JUNCTIONS 5 TO 7: WIDENING TO D4M

**THE ARCHAEOLOGICAL MONITORING OF
GEOTECHNICAL TRIAL PITS**

**Prepared by
RPS Clouston, Oxford**

February 1995

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

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1.0 INTRODUCTION

- 1.1 This report assesses the information gained from archaeological monitoring of geotechnical trial pits that were excavated between junctions 5 and 7 during 1993 and 1994. Assumptions regarding archaeological potential are drawn from "M25 junctions 5-7 Widening to Dual 4 Lanes, Environmental Statement Volume II, 7, Cultural Heritage" prepared by RPS Clouston, Oxford (June 1994). This report states (para 4.3) : "The study of geotechnical test-pits in areas of potential impact should clarify the location and existence of deposits that pre-date the motorway construction. If these occur in areas of archaeological potential (as identified by the current stage II study) then further evaluation to establish their archaeological potential might be required before a mitigation strategy can be recommended."
- 1.2 150 trial pits out of a total of 269 were selected for archaeological monitoring. This is a higher percentage (c.55%) than that for the scheme between junctions 7 to 8 (c.42%) due to the different relationship with the surrounding landscape. Much of the motorway between junctions 5 and 7 is on embankment or at grade, whereas between junctions 7 and 8 much lies in cutting, and archaeological deposits were destroyed with the original construction of the motorway.
- 1.3 The methodology used for assessing preservation of pre-motorway deposits on the previous project between junctions 7 and 8 proved effective at identifying areas where any archaeological potential remained and areas where further archaeological work such as watching briefs should be carried out. It was thought that this methodology would be equally effective between junctions 5 and 7.

2.0 AIMS AND OBJECTIVES

- 2.1 The monitoring of geotechnical trial pits by archaeologists enables additional information regarding the presence or absence of potential archaeological deposits to be acquired. The attendance of an archaeologist experienced in this type of work during the excavation of the selected trial pits ensures that any archaeological deposits that are disturbed during trial pitting are recorded. The general aim is to identify areas that can be discounted as having no archaeological potential, where archaeological levels are seen to have been destroyed; and to identify other areas where the soils predating the construction of the M25 survive *in situ*.
- 2.2 Once these areas are known, further archaeological evaluation and mitigation can be effectively targeted, and resources are not wasted evaluating areas that can be discounted.

3.0 METHODOLOGY

3.1 Selected trial pits were chosen for inspection by an archaeologist. Many of the trial pits could be discounted for archaeological interest in advance of the fieldwork, on the grounds that they lay in cutting and so archaeological deposits would already have been removed. A total of 150 of the 269 pits were selected for inspection during the two phases of trial pitting. Pro-forma trial pit monitoring records were completed for each of the trial pits monitored, and these, together with the geotechnical logs provided by the contractors were used to record the required information. A sketch of the sediment profile was completed by the monitoring archaeologist and the presence or absence of an extant, buried or truncated soil or original ground surface was noted. Any archaeological features encountered were also noted and any archaeological material collected. The underlying geology was also recorded. This data allowed trial pits to be divided into three categories:

- (i) where the pre-motorway soil survives (buried, at grade or truncated) and where archaeological deposits may survive;
- (ii) where undisturbed geological strata are observed, and no pre-motorway soil survives in section, and where therefore no archaeological deposits could have survived the original motorway construction; and
- (iii) where no pre-motorway soil is encountered, and undisturbed geological levels are not reached. This situation is common on large bunds and embankments, where a deep trial pit will only reveal made ground. It is possible that a pre-motorway soil, and hence possible archaeological deposits may survive beneath the bund or embankment, but this category indicates a measure of uncertainty.

3.2 All the trial pits selected for monitoring have been sorted into one of these three categories.

4.0 RESULTS AND DISCUSSION

- 4.1 The results of the archaeological monitoring have been categorized as set out in paragraph 3.1 and are summarized in tables 4.1 and 4.2. Two phases of trial pitting were carried out, in 1993 and 1994. The two phases of trial pitting are dealt with in separate tables as there was some duplication of reference numbers.
- 4.2 The first phase of trial pits (around junction 6). A total of 30 of the 52 trial pits were selected for archaeological monitoring. In the event, twenty-five trial pits provided the information below, due to engineering changes and judgements made on site regarding the suitability of each trial pit. The information from the first phase is summarised in Table 1.

Table 1

1993 trial pit reference	area of known archaeological potential	(i) pre-motorway soil survives	(ii) pre-motorway soil destroyed	(iii) uncertain survival, trial pit on bund/embankment
56	✓		✓	
57	✓		✓	
58	x			✓
59	x			✓
60	x		✓	
61	✓			✓
62	x			✓
62a	x			✓
63	x	✓		
64	x			✓
64a	x			✓
65	x			✓
65a	x			✓
66	x		✓	
67	x		✓	
68	x	✓		
69	x		✓	
70	x			✓
71	x		✓	
72	x		✓	
80	✓		✓	
81	✓	✓		
82	✓	✓		
86	x			✓
87	x			✓
TOTALS	N/A	4	9	12

- 4.3 The second phase of trial pits. A total of 120 of 217 trial pits were selected for inspection. This number was reduced to 118 after reviewing topographical relationships.

Table 2

1994 trial pit reference	area of known archaeological potential	(i) pre-motorway soil survives	(ii) pre-motorway soil destroyed	(iii) uncertain survival, trial pit on bund/embankment
1	x		✓	
2	x			✓
3	x		✓	
5	x		✓	
12	x		✓	
13	x		✓	
15	x		✓	
22	x		✓	
25	x			✓
29	x			✓
30	x	✓		
40	x		✓	
41	x		✓	
42	x	✓		
44	x	✓		
48	x			✓
50	x		✓	
51	✓			✓
66	x		✓	
67	x		✓	
69	x	✓		
70	x		✓	
77	x			✓
78	x			✓
79	x			✓
80	x			✓

1994 trial pit reference	area of known archaeological potential	(i) pre-motorway soil survives	(ii) pre-motorway soil destroyed	(iii) uncertain survival trial pit on bund/embankment
81	x		✓	
82	x		✓	
84	x		✓	
85	x			✓
86	x		✓	
87	x	✓		
88	x			✓
89	x		✓	
90	x			✓
91	x			✓
95	✓		✓	
96	✓	✓		
98	✓	✓		
105	x			✓
106	x			✓
107	x			✓
108	x			✓
109	x			✓
110	x			✓
111	x			✓
112	x			✓
113	x			✓
114	x		✓	
115	x			✓
116	x			✓
117	✓			✓
118	✓	✓		
119	x			✓
120	x			✓

1994 trial pit reference	area of known archaeological potential	(i) pre-motorway soil survives	(ii) pre-motorway soil destroyed	(iii) uncertain survival trial pit on bund/embankment
121	✓	✓		
122	✓	✓		
123	x			✓
124	x			✓
125	x			✓
127	x			✓
128	x			✓
129	x			✓
130	x			✓
133	✓		✓	
136	✓	✓		
139	x		✓	
140	x		✓	
141	x			✓
142	x			✓
143	x		✓	
144	x			✓
145	x			✓
146	x			✓
147	x			✓
148	x		✓	
149	x			✓
150	x			✓
151	x		✓	
152	✓		✓	
153	✓	✓		
154	x		✓	
155	✓		✓	
156	x	✓		

1994 trial pit reference	area of known archaeological potential	(i) pre-motorway soil survives	(ii) pre-motorway soil destroyed	(iii) uncertain survival trial pit on bund/embankment
157	x		✓	
158	x		✓	
159	x	✓		
161	x			✓
162	x			✓
163	x		✓	
165	x	✓		
166	x	✓		
167	x			✓
170	x	✓		
171	x		✓	
172	x		✓	
173	x	✓		
174	x	✓		
175	x		✓	
176	x		✓	
177	x		✓	
180	x			✓
181	x			✓
182	x			✓
183	x			✓
186	x			✓
187	x			✓
190	x			✓
191	x			✓
196	x		✓	
198	x		✓	
200	x			✓
202	x	✓		

1994 trial pit reference	area of known archaeological potential	(i) pre-motorway soil survives	(ii) pre-motorway soil destroyed	(iii) uncertain survival trial pit on bund/embankment
208	✓	✓		
209	✓		✓	
210	✓	✓		
211	✓		✓	
212	✓		✓	
TOTALS	N/A	22	42	54

- 4.4 These results are illustrated in figures RPSC 1-5. Trial pits where the pre-motorway soil survives are marked in red, where the pre-motorway soil has been destroyed in black and where survival is uncertain in blue.

Discussion of Results

- 4.5 Twenty-six of the trial pits showed that the original pre-motorway soils had, at least partially, been preserved or retained. These include second phase trial pit 153 (dug in 1994) where a former ground surface was located at 2.5 metres depth. The former ground surface consisted of brickwork and timbers and is thought to represent remains of a former railway. Cartographic research has confirmed the existence of a branch line from Oxted to Oxted Quarry. This was the only actual archaeological feature to be identified, but the presence of other archaeology elsewhere cannot be discounted.
- 4.6 Fifty-one of the monitored trial pits gave evidence that pre-motorway soils had been completely destroyed. This allows the areas surrounding each of these trial pits to be discounted from further archaeological work as any subsoil archaeology will have almost certainly already been destroyed.
- 4.7 Sixty-six trial pits did not produce firm conclusions regarding the presence or absence of former land surfaces or soils. This was usually due to the trial pits being excavated on embankments, where the natural, solid geology was not reached. Made ground deposits forming the embankment *could* be burying pre-motorway soils, but it is possible that these soils and any archaeological deposits were removed or destroyed prior to bunding.

5.0 CONCLUSIONS

- 5.1 Areas have been identified which require no further archaeological assessment and these are identified ^{as blank areas} on figures RPSC 6 to 10. Other areas may require further work in order to ascertain their archaeological potential. Many of the areas where there is uncertain survival of soils and the relevant sediments were not seen, may not require further assessment as engineering plans may not involve the destruction of archaeological levels. Any unknown archaeology could be preserved *in situ* without being damaged by the widening proposals. Where retaining walls or other structures that could penetrate the original ground surface are planned, further archaeological advice should be sought.
- 5.2 Known survival of pre-motorway soils coincides with areas of known archaeological potential at:
- i) Buttergreen Shaw, where SMR entries 3103 and 3104 record medieval pottery and a Roman building;
 - ii) Lodge Wood and west of Armitage Wood (by the Oxted-Woldingham railway) close to SMR 3096, an unexplained cropmark;
 - iii) south of Oxted Down close to SMR 3453, a Romano-British pottery scatter;
 - iv) south of Park Farm close to SMR 1349, find spot of a Romano-British storage jar and iron implement; and
 - v) South Green, where SMR entries 3526 and 3527 record Roman pottery, medieval pottery and a medieval building.

6.0 RECOMMENDATIONS

6.1 The three trial pit conditions set out in paragraph 3.1 would lead to different responses. These are:

- a) Areas where pre-motorway soil survives *in situ*, and any subsoil archaeology could have survived. These areas are shaded red on RPSC 6-10. Further work may be necessary, especially in the areas described in Section 5.2. These areas should take priority for assessment, once final engineering details have been made available.
- b) Areas in cutting and areas where the original ground surface is now known to have been destroyed. No further archaeological work will be required.
- c) Areas where the original ground surface has not been located, and is not known to be destroyed, such as under large embankments. If the proposals are likely to disturb sediments at a depth greater than those excavated in the nearest trial pits, then some kind of mitigation is recommended. These areas are shaded blue on RPSC 6-10.

Note on Off-site proposals

6.2 Final details of off-site landscape architecture proposals are not yet available. The proposals are likely to consist of:-

- 1) off-site planting
- 2) off-site bunds

6.3 As these proposals are intrinsically linked with the road widening proposals their archaeological implications are briefly considered here.

6.4 All proposals which lie within the route corridor have been the subject of Stage 2 study as defined by the Department of Transport's *Design Manual for Roads and Bridges*, Vol 11 (1993 revised 1994). Off-site tree planting does not normally constitute a local or county planning authority matter, but in this case it may be considered to be part of the proposed scheme and be of interest to the local planning authority and English Heritage as consultees.

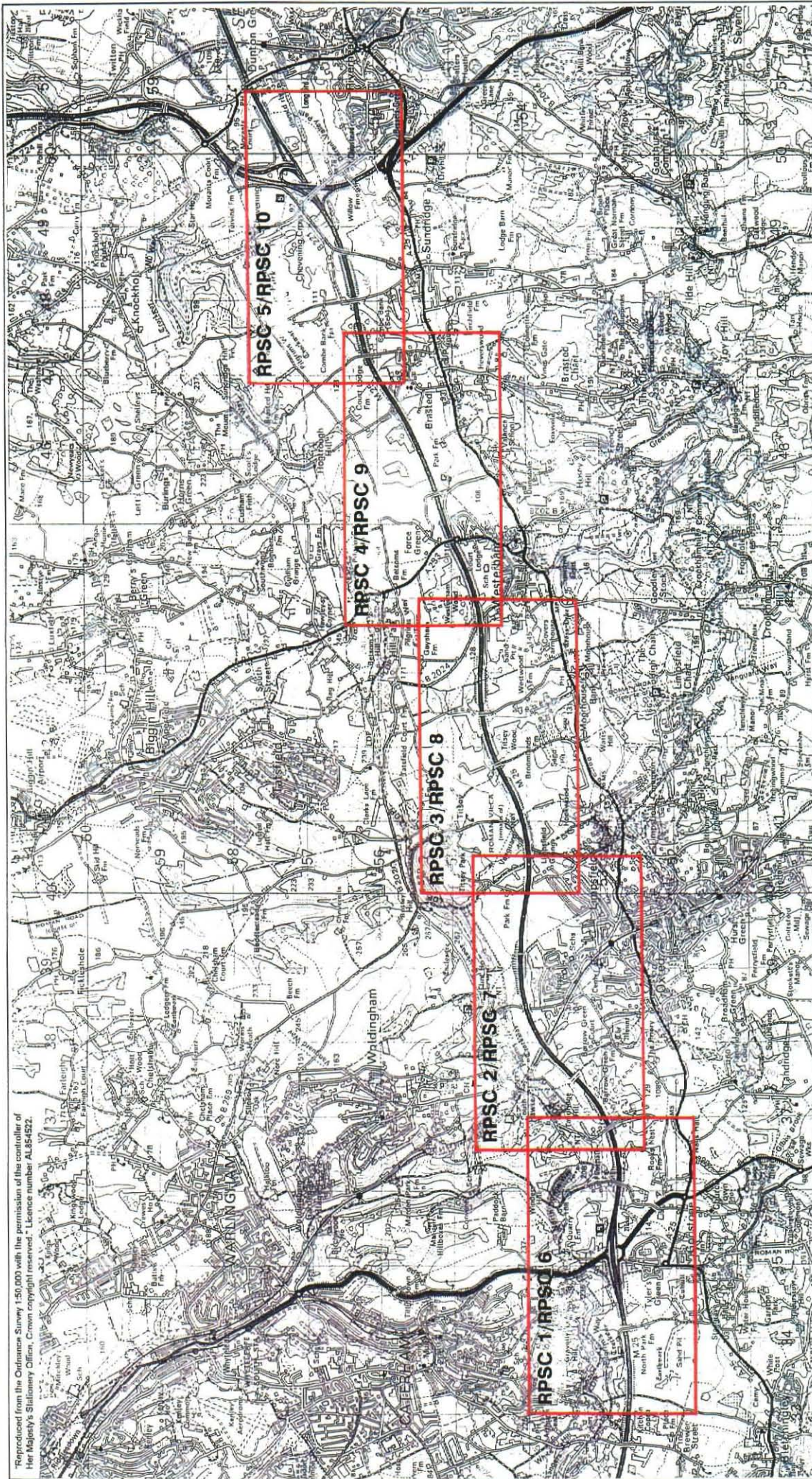
- 6.5 It is recommended that the archaeological potential of proposed off-site planting areas should be assessed prior to a final decision. Known archaeological sites should be avoided if possible. Rescue excavation may need to be carried out prior to tree planting if this is not possible. Evaluation strategies that may locate previously unknown archaeological sites include geophysics, fieldwalking, trial trenching or test pitting in advance of planting. Possible mitigation would be discussed with the County Archaeologist.
- 6.6 Off-site bunds, on the other hand, may require planning permission. It is recommended that the normal judgements relating to areas of potential archaeology should be made in order to identify areas of risk which may require evaluation or other archaeological work. Areas of archaeological potential which may be affected by the bunding proposals could either be tested by evaluation or assumed to be significant. If it is considered necessary to strip the organic soil under the embankment for stability, it could be appropriate to carry this out under archaeological supervision as a watching brief. Arguments that archaeology can be preserved under bunds, rendering assessment unnecessary, have been accepted on many schemes. Good practice for the construction of bunds can be written into contracts. It may, however, be more cost effective to carry out an evaluation beforehand to confirm an area's archaeological potential.
- 6.7 As liaison is taking place between RPS Clouston's archaeologists and landscape architects, it is unlikely that off-site planting would take place on a known, extant archaeological site without prior notice. Planned off-site planting that could have a potential effect on archaeology can be discussed with the County Archaeologist and appropriate mitigation decided upon.

7.0 ACKNOWLEDGEMENTS

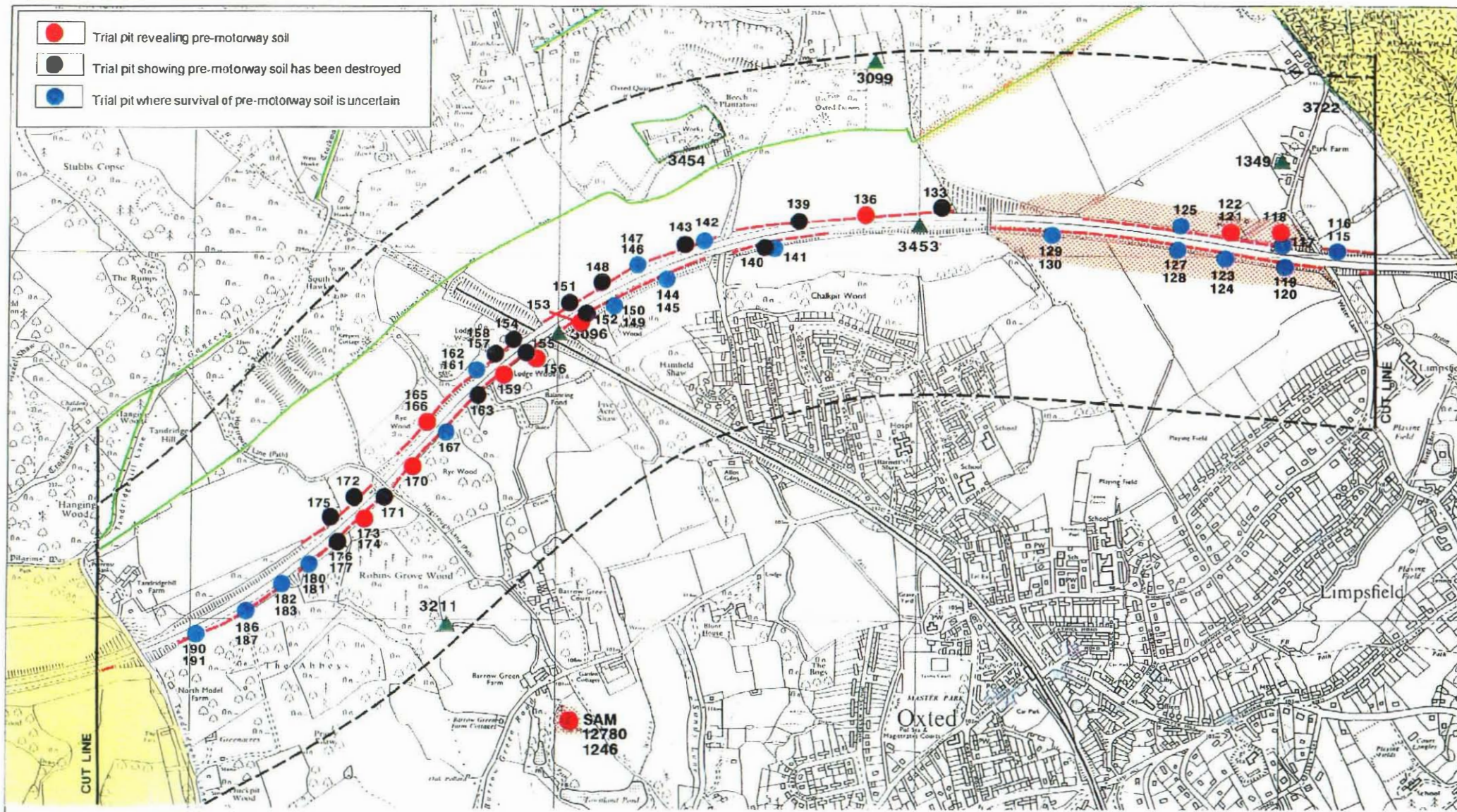
- 7.1 The archaeologists would like to thank Mr Jeff Sherman of Parkman's for his assistance prior to our fieldwork, and the sub-consultants, Exploration Associates and LTG Services for their willing co-operation and frequent updates on their progress.

FIGURES

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 THE DEPARTMENT OF TRANSPORT	project M25 JUNCTIONS 5 TO 7 WIDENING TO DUAL 4 LANES	
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 PARKMAN		fig.no. 
 RPS CLOUSTON		

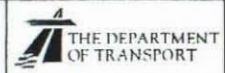


NOTES:

- | | | | |
|--|------------------------------------|--|---|
| | Scheduled Ancient Monuments (SAMs) | | Historic park or garden (not designated) |
| | Sites and Monuments Records (SMRs) | | Building on local list |
| | Statutory Listed Building | | Areas where further assessment is recommended |
| | Trackway | | Walkover survey areas |

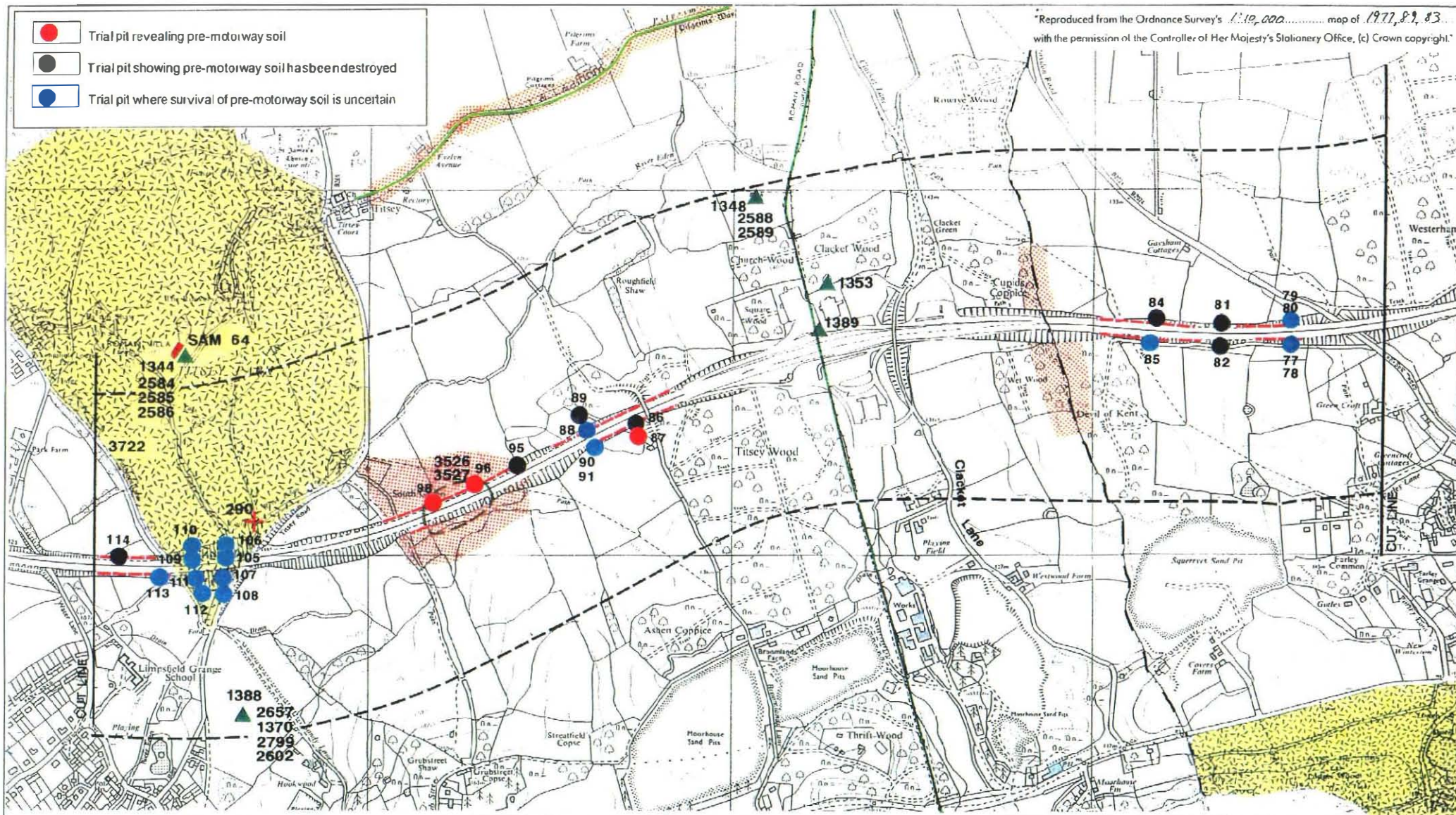
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| | Conservation area within route corridor |
| | English Heritage designated extent of garden of historic interest |

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HERITAGE SITES AND LOCATIONS OF TRIAL PITS	
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fig. no.	RPSC 2





NOTES:

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|--|------------------------------------|--|---|--|---|
| | Scheduled Ancient Monuments (SAMs) | | Historic park or garden (not designated) | | Conservation area within route corridor |
| | Sites and Monuments Records (SMRs) | | Building on local list | | English Heritage designated extent of garden of historic interest |
| | Statutory Listed Building | | Areas where further assessment is recommended | | |
| | Trackway | | Walkover survey areas | | |

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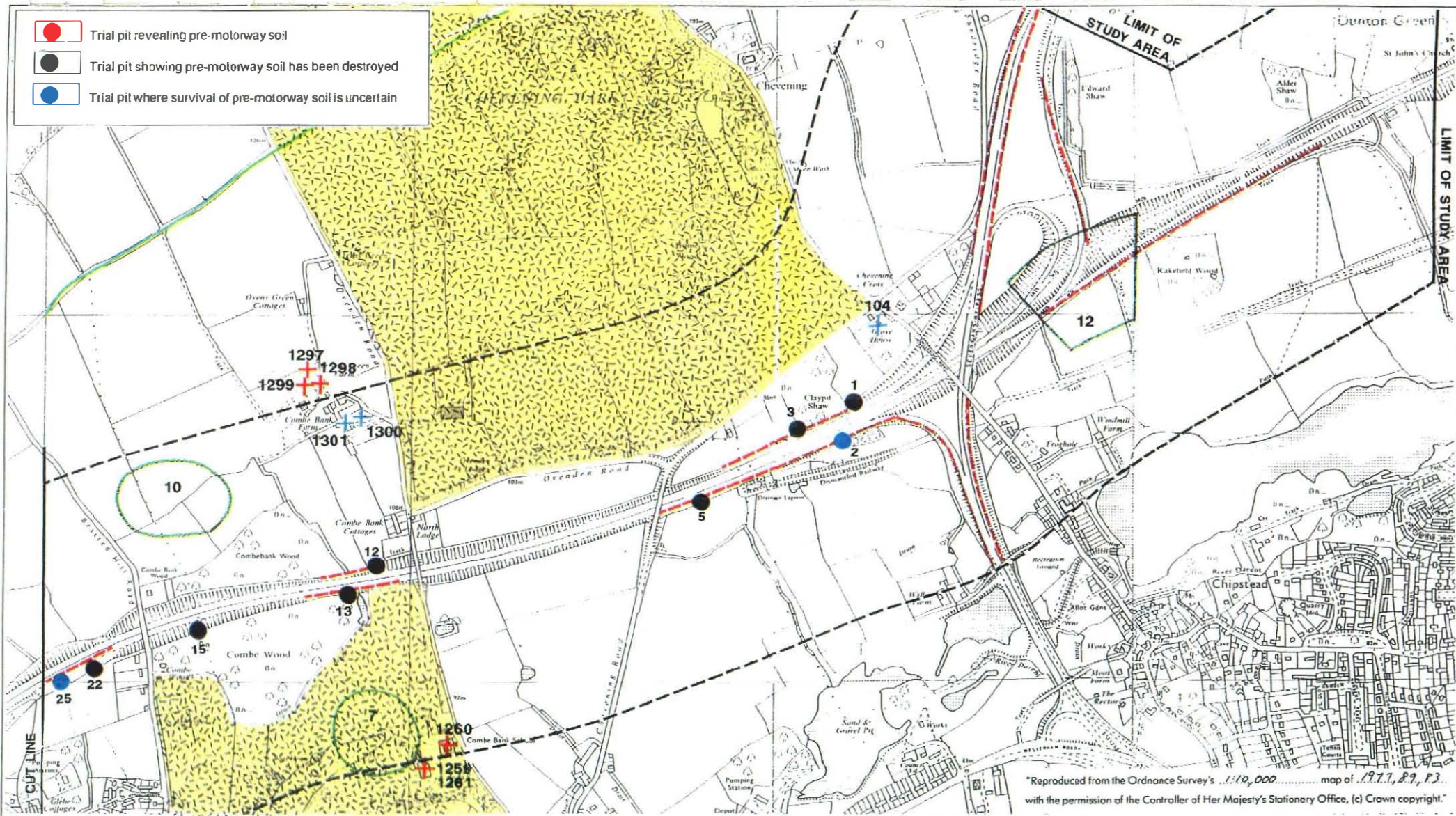


project
**M25 JUNCTIONS 5 TO 7
WIDENING TO DUAL 4 LANES**

title
**HERITAGE SITES AND
LOCATIONS OF TRIAL PITS**

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fig.no.
RPSC 3



NOTES:

- | | | | |
|--|------------------------------------|--|---|
| | Scheduled Ancient Monuments (SAMs) | | Historic park or garden (not designated) |
| | Sites and Monuments Records (SMRs) | | Building on local list |
| | Statutory Listed Building | | Areas where further assessment is recommended |
| | Trackway | | Walkover survey areas |

- | | |
|--|---|
| | Conservation area within route corridor |
| | English Heritage designated extent of garden of historic interest |

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PLANNING | DESIGN | BUILDING SUCCESS

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ENVIRONMENTAL CONSULTANTS

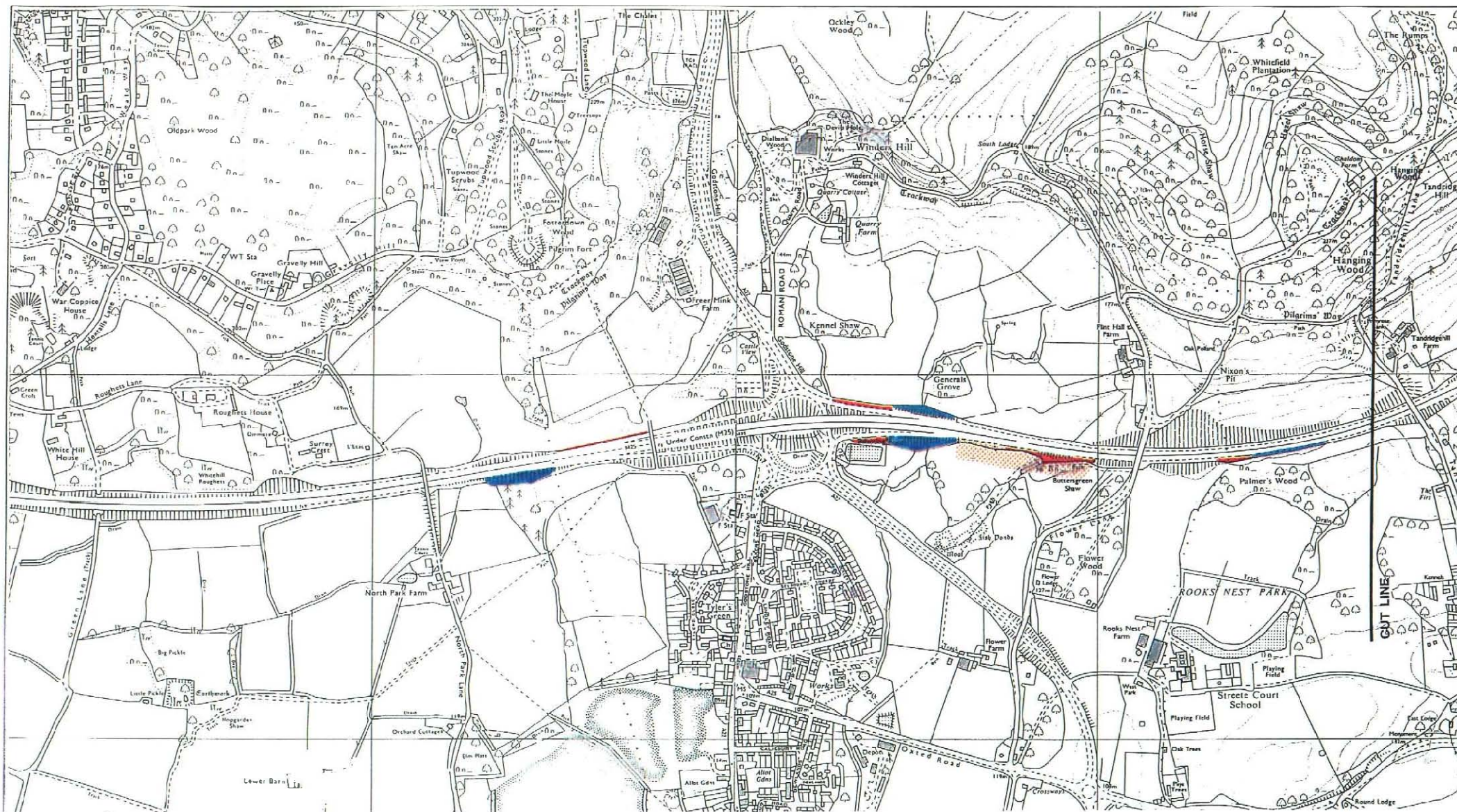
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**M25 JUNCTIONS 5 TO 7
WIDENING TO DUAL 4 LANES**

title
**HERITAGE SITES AND
LOCATIONS OF TRIAL PITS**

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fig.no.
RPSC 5





- Areas of known survival of pre-motorway soils
- Areas of uncertain survival of pre-motorway soils
- Selected areas of known archaeological potential

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OF TRANSPORT

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PLANNING CONSULTANTS - PLANNING SERVICES

RPS CLOUSTON
THE ENVIRONMENTAL CONSULTANCY

project
**M25 JUNCTIONS 5 TO 7
WIDENING TO DUAL 4 LANES**

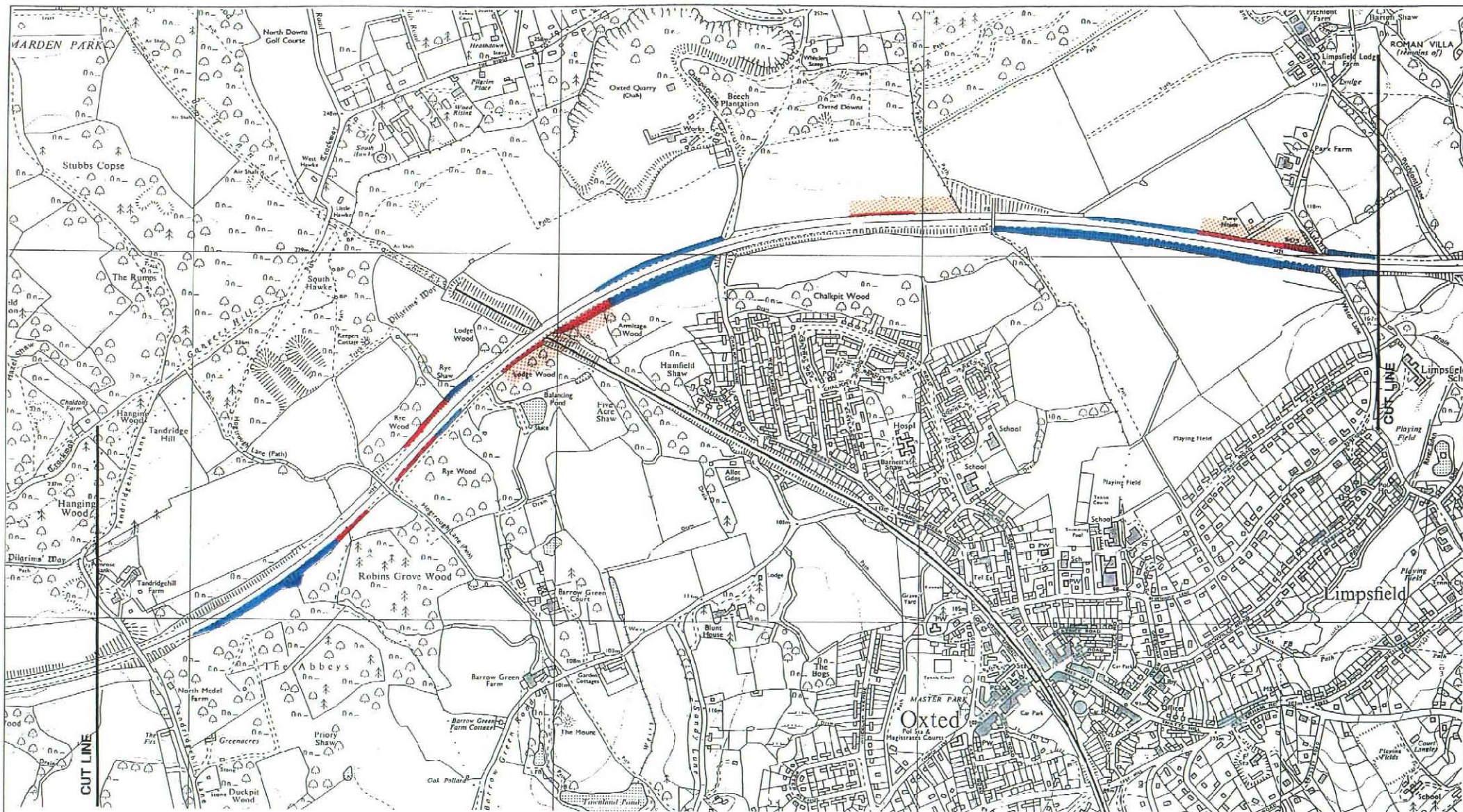
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Archaeological Work and Selected
Areas of Archaeological Potential

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February '95

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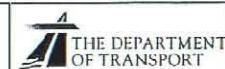
fig.no.

RPSC 6



- Areas of known survival of pre-motorway soils
- Areas of uncertain survival of pre-motorway soils
- Selected areas of known archaeological potential

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**M25 JUNCTIONS 5 TO 7
WIDENING TO DUAL 4 LANES**



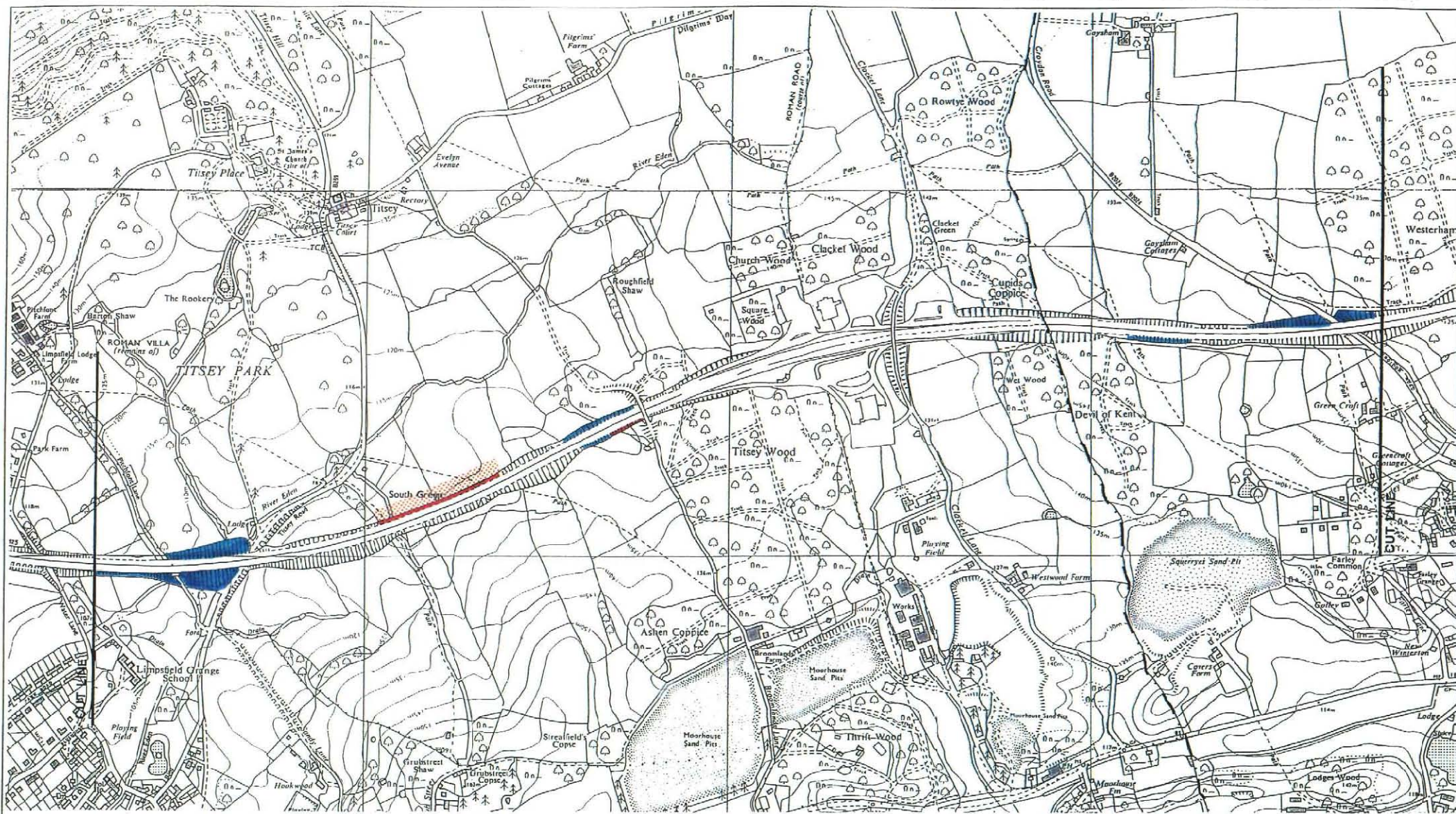
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**Areas Recommended for Further
Archaeological Work and Selected
Areas of Archaeological Potential**

date
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fig. no.
RPSC 7



- Areas of known survival of pre-motorway soils
- Areas of uncertain survival of pre-motorway soils
- Selected areas of known archaeological potential

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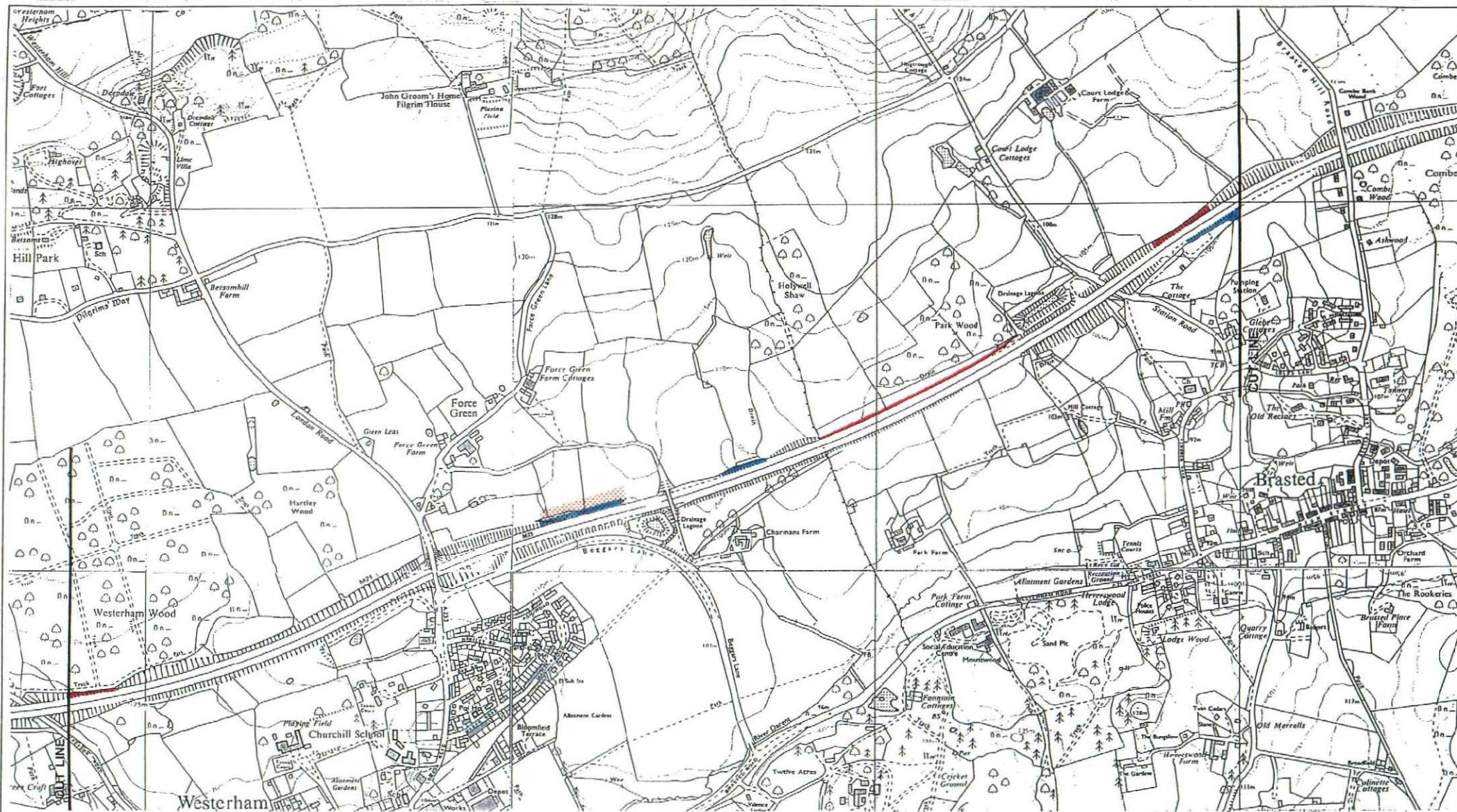
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WIDENING TO DUAL 4 LANES**

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Areas Recommended for Further
Archaeological Work and Selected
Areas of Archaeological Potential

date
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fig. no.
RPSC 8



- Areas of known survival of pre-motorway soils
- Areas of uncertain survival of pre-motorway soils
- Selected areas of known archaeological potential

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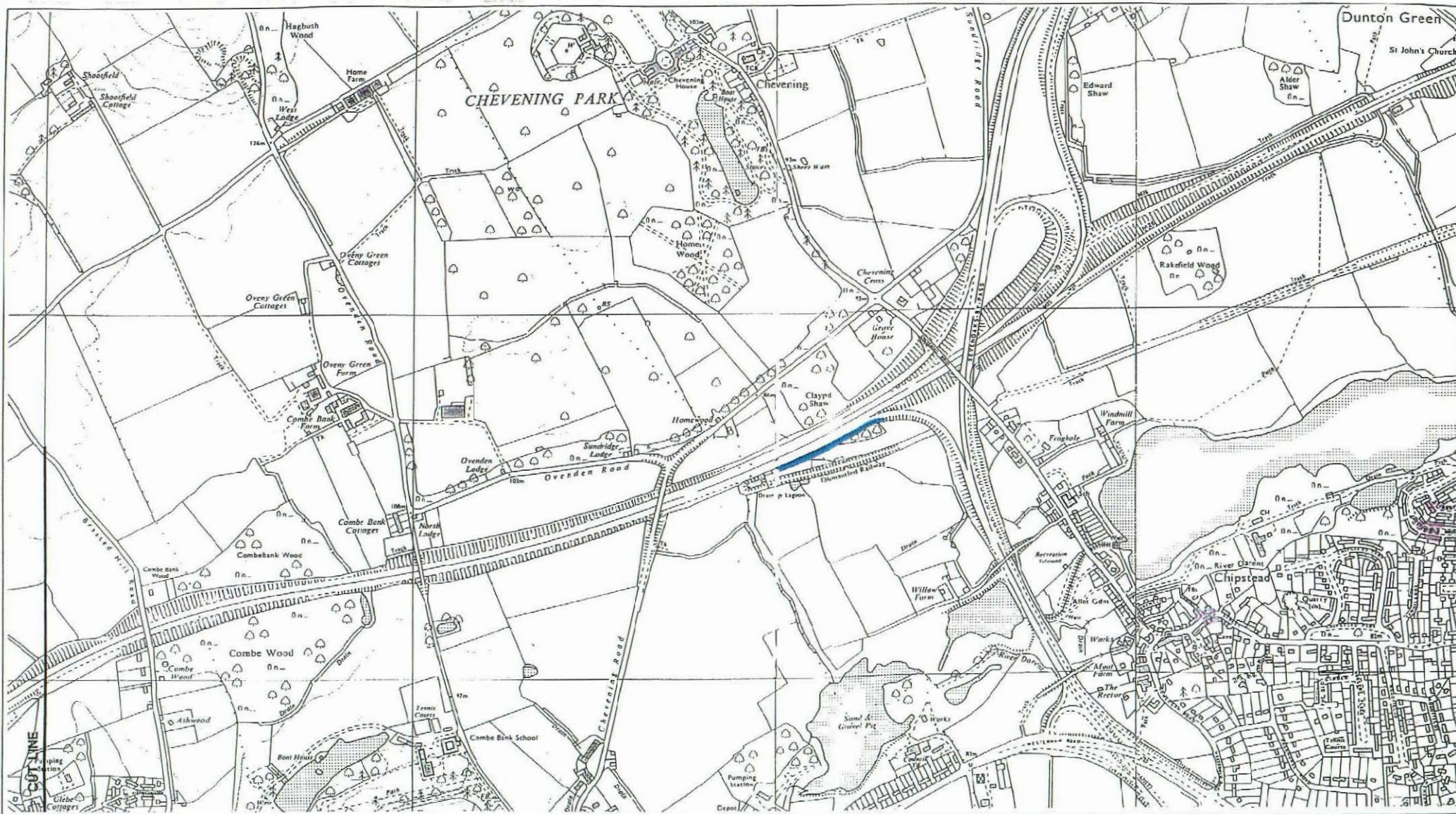
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Archaeological Work and Selected
Areas of Archaeological Potential




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RPSC 9



-  Areas of known survival of pre-motorway soils
 Areas of uncertain survival of pre-motorway soils
 Selected areas of known archaeological potential

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