# THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

# Wrexham Industrial Estate Access Roads Stage II Archaeological Study

ARCHAEOLOGICAL ASSESSMENT

# **CPAT Report No 655**

# Wrexham Industrial Estate Access Roads Stage II Archaeological Study ARCHAEOLOGICAL ASSESSMENT

By R J Silvester August 2004

Report for Capita Symonds Group Ltd

# **CPAT Report Record**

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#### 1 INTRODUCTION

- 1.1 In June 2003 the Contracting Section of the Clwyd-Powys Archaeological Trust (CPAT) completed a Stage One Archaeological Assessment of the several proposed alternative alignments of new access roads feeding the Wrexham Industrial Estate, which lies to the east of the town itself and between the arterial roads linking Wrexham to Nantwich (the A534) and to Whitchurch (the A525).
- 1.2 The assessment was prepared in accordance with the Department of Environment, Transport and Regions' Design Manual for Roads and Bridges Volume 11 Section 3 Part 2, Section 8/1 (1993) as it related to Wales, and the scope of the assessment was defined in a brief prepared by Ms K Kucharski of Wrexham Archaeology Service in her capacity as archaeological curator for the region.
- 1.3 The assessment area extended over about 1,220ha (12.2km²) of predominantly agricultural land to the east and south-east of Wrexham, and the report offered a preliminary statement of the archaeology of that area. However, because of the sensitivity of the development proposals it was not possible fully to conform to the requirements of a Stage I assessment as designated in the Design Manual, for the field element had to be omitted from the work programme and only a limited visual examination utilising public rights of way was attempted.
- 1.4 After the preliminary analysis for the Stage One Archaeological Assessment had been completed, the client identified the several possible route corridors for the new access roads and it was possible to consider the potential impact of each of these corridors on the archaeological resource as it was known from the desk-top assessment. The subsequent report, incorporating those route impacts, was distributed in June 2003 as CPAT Report No 542.
- 1.5 Twelve months later, in June 2004 CPAT Field Services were approached by Capita Symonds to conduct a further, Stage II Archaeological Assessment of a reduced number of route options.
- Stage II of the Design Manual for Roads and Bridges Volume 11 Section 3 Part 2, Section 8/232-8/25 (1993) as it relates to Wales requires the development of the appraisal report, prior to going to public consultation, including detailed field survey of archaeological remains as necessary, and consultation by the Overseeing Department (i.e. Capita Symonds) with Cadw: Welsh Historic Monuments on the recommendations made in the report and the impact of the route options on the archaeological resource. In the case of the Wrexham Industrial Estate it has been possible to complete a field walkover to inform the assessment, but given that it could only be though that mechanism that detailed field survey requirements might be identified, these have been flagged solely as recommendations in this report.
- 1.7 This report follows the standard layout of CPAT Field Services client reports and should be read in conjunction with the first report, from which it occasionally borrows heavily (particularly Section 2), as necessary.

## 2 LOCATION, TOPOGRAPHY AND GEOLOGY

2.1 The assessment area extends as defined corridors from the eastern tip of urban Wrexham in the north to Cross Lanes in the south.

- 2.2 The landscape of this heavily agricultural portion of Wrexham Maelor is generally one of muted topography, the ground gently undulating, except for the steep sided valley followed by the A534 on the north. The more southerly part of the area is bisected by the River Clywedog, as it runs eastwards towards the Dee, and several smaller streams.
- 2.3 The underlying rocks of the area are generally sedimentary deposits of the Westphalian Series of the Carboniferous Era and undivided Triassic rocks (BGS Geological Map of Wales). The soils derived from this underlying geology are relatively complex, but include deep well-drained sandy and coarse loamy soils of the Newport 1 Association and fine loamy and clayey soils of the Salop Association which can be prone to seasonal waterlogging. Adjacent to the Clywedog are reddish river alluvium of the Compton Association, clayey soils which can be at risk of flooding (Soil Survey of England and Wales map and legend; Rudeforth et al 1984, 112; 204; 222).

#### 3 THE STAGE II ASSESSMENT

- 3.1 This assessment involved the re-examination of the County Sites and Monuments Record (SMR) maintained by CPAT at Welshpool, and the examination of further aerial photography housed in the Planning Environment Section of Wrexham County Borough Council. The council are known to have three sets of photography from 1974, 1984 and 1993, of which the last two were available for consultation.
- 3.2 A field walkover survey was also conducted to inform the assessment. Conditions in mid summer were far from ideal with significant acreages either under arable crops (cereal and maize) or left to grow wild (? set aside), but nevertheless produced useful results.
- 3.3 As a result of this combined approach a number of new sites have been identified and these are considered in the impacts below and listed in an appendix at the end of the report (in contrast to the earlier report which had them dispersed throughout the text). And in addition the walkover survey has led to a better appreciation of the landscape and its archaeological potential and this has assisted considerably in formulating the recommendations below. Almost all of these new sites are of types previously recognised, and so it is not proposed to reiterate the historical synopsis that was prepared for the Stage I report. The reader is referred to the original report, paras 3.4-3.10, for that information.

## 4 DESIGNATIONS AND CONSTRAINTS

- 4.1 In accordance with the Design Manual for Roads and Bridges Volume 11 Section 3 Part 2, Section 13.5 (i) (1993), which considers assessments of the built heritage (as opposed to the cultural heritage) the following designations have been considered and/or identified:
  - Landscape of Outstanding Historic Interest in Wales. None of the assessment area falls within a designated Landscape of Outstanding or Special Historic Interest (as defined in Cadw 1998 and 2001).
  - ii) Parks and Gardens of Special Historic Interest in Wales. No such parks or gardens have been recognized in the area of interest (as defined in Cadw 1995).
  - iii) Conservation Area. We are not aware of a conservation area, but no detailed checks have been made as it is the local authority themselves who define such areas.
  - iv) Scheduled Ancient Monuments. None has been identified along any of the designated route corridors.
  - v) Listed buildings. None has been identified within any of the designated route corridors, but this requires absolute confirmation from register maintained by the local authority. Several listed buildings lie close to one or other corridor.
  - vi) National Trust inalienable land. It has not been possible in the time available to establish whether any inalienable land is present in the area of interest.

## 5 ARCHAEOLOGICAL SUMMARY

- 5.1 The archaeology of the route corridors and their immediate environs is given in the gazetteer which forms an appendix to this report. The location of sites are also depicted as point data on Figs 2 and 3 (see also section 5.3).
- 5.2 Each site of archaeological interest, identified during the desktop and field surveys, has been provisionally classified according to its perceived significance as it appears to us at present. The categories are those given in the Cadw: Welsh Historic Monuments draft Archaeology and the Trunk Road Programme in Wales: a Manual of Best Practice. These are based in turn with the exception of Category E on those given in the Department of Environment, Transport and Regions' Design Manual for Roads and Bridges Volume 11 Section 3 Part 2 (1993). Category E (also termed category U in some classifications) has been introduced to cover archaeological sites and monuments whose existence went unacknowledged in the Design Manual.
  - i) Category A sites are those which are considered by CPAT to be of primary significance, either potentially of national importance or already designated by Cadw: Welsh Historic Monuments as being of scheduled ancient monument status and thus of national importance. It is presumed that sites in this category will be preserved and protected in situ.
  - ii) Category B sites are sites of regional importance. These sites are not of sufficient importance to justify scheduling, but are nevertheless important in aiding the understanding and interpretation of the archaeology of the region. Preservation in situ is

the preferred option for such sites, but if loss or damage is unavoidable, appropriate detailed recording should be undertaken

- iii) Category C sites are sites of local importance. These sites are of lesser importance, but are nevertheless useful in aiding the understanding and interpretation of the archaeology of the local area. They are not normally of sufficient importance to justify preservation if threatened, but they do merit adequate recording in advance of loss or damage.
- iv) Category D sites are either sites of minor importance or those which are so badly damaged that too little now remains to justify their inclusion in a higher grade. Rapid recording is usually considered sufficient in the event that such sites are threatened by development.
- v) Category E sites are sites which have been identified, but whose importance cannot be assessed from fieldwork and desk-top study alone. An archaeological evaluation would generally be required to categorise such a site more accurately if the proposal was likely to affect it in any way ...
- 5.3 In contrast to the earlier report we have dispensed with the archaeological summary which listed sites according to their importance, and instead have examined the impact on the archaeology on each route option. Only archaeological sites on or immediately adjacent to the route corridors are defined here, and the earlier report should be referred to for the wider picture of archaeological survival. The location of each archaeological site is shown in Figs 2 and 3. Marl pits and ridge and furrow cultivation traces on and immediately adjacent to any of the route corridors are now depicted and given P(rimary R(ecord) N(umber)s, whereas previously they had been shown as outlined areas as point data only. However, in order to give some impression of the extent of the known ridge and furrow their approximate extents have been outlined in green on Figs 2 and 3. One other area, the unimproved pasture with undefined relict earthworks (PRN 82628) has been identified on the plan, outlined in brown.

#### 6 ROUTE OPTIONS AND POTENTIAL IMPACTS

6.1 A number of different methods of defining the several route options appears in the supporting literature (see below), but the colours as given on Capita Symonds drawing 59697/RO/03 (Rev P1) are used here for descriptive convenience

Northern access route

Black route

Common north-west part of Route Options:N1D, N2A and

N7A

Blue route Green route Part of Route Option N1D Part of Route Option N2A

Green & blue route Part of Route Options N1D, N2A and N7A

Brown route

Part of Route Option N7A

Southern access route

Black route

Common north part of Route Options S2 & S5/S6 Hybrid

Purple route

Part of Route Option S1

Yellow route

Part of Route Option S5/S6 Hybrid

Red route

Part of Route Option S2

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6.2 Impacts are defined according to a set of standardised terms. Included in the following lists are archaeological and historic sites and features that lie in the immediate environs of the route corridors. In part this is to allow for changing priorities as the current plans state that 'all junction and access arrangements are indicative at this stage and will be subject to change following further detailed design'.

## 6.3 Northern Access: Black route

PRN	Name	Site type	Category	NGR	Impact
86023	Tyn-twll Farm aircraft	Wreck	E	SJ3582051678	Unaffected by
	wreck				current plan

## 6.4 Northern Access: Blue route

PRN	Name	Site type	Category	NGR	Impact
82620	Llan-y-pwll farm earthwork	Earthwork	Е	SJ3706851809	Unaffected by current plan
82621	Gredington Arms quarry	Quarry	D	SJ36725194	Loss
82622	Keeper's Cottage	House	В	SJ3623351772	Loss
86003	Holt Road Smithy Well	Well	D	SJ3666151817	Unaffected by current plan
86004	Holt Road Milestone	Milestone	C	SJ3664551866	Loss
86005	Holt Road Well	Well	D	SJ3629551817	Loss
86029	Hugmore aircraft wreck I	Wreck	E	SJ3763852147	Unaffected by current plan
86030	Hugmore aircraft wreck II	Wreck	E	SJ3752652178	Unaffected by current plan
10446	Holt Road Smithy	Building	В	SJ3668051830	Unaffected by current plan

## 6.5 Northern Access: Green route

PRN	Name	Site type	Category	NGR	Impact
82620	Llan-y-pwll farm earthwork	Earthwork	Е	SJ3706851809	Loss
82622	Keeper's Cottage	House	В	SJ3623351772	Loss
86003	Holt Road Smithy Well	Well	D	SJ3666151817	Unaffected by current plan
86024	Gourton Hall aircraft wreck	Wreck	Е	SJ3723851691	Unaffected by current plan
10446	Holt Road Smithy	Building	В	SJ3668051830	Unaffected by current plan

# 6.6 Northern Access: Green and Blue route

PRN	Name	Site type	Category	NGR	Impact
27087	Croes Yorkin	House	A	SJ37975123	Unaffected by current plan
36745	Llan y Pwll, Holt Lodge Farm	House	A	SJ3796151272	Unaffected by current plan
82619	Bryn Villa ridge and furrow	Ridge and furrow	С	SJ3772251394	Loss
82630	Bryn Villa holloway	Hollow Way	D	SJ37605142	Unaffected by current plan
82631	Hugmore House ridge and furrow	Ridge and furrow	Е	SJ37665151	Partial Loss ?
82632	Bryn Villa marl pit	Marl pit	D	SJ37825128	Loss
86001	Holt Lodge Well	Well	E	SJ3767351384	Loss ?
86025	Holt Lodge Farm aircraft wreck	Wreck	Е	SJ3776951266	Partial Loss ?
86026	Spring Grove aircraft wreck	Wreck	E	SJ3796350997	Loss ?

# 6.7 Northern Access: Brown route

PRN	Name	Site type	Category	NGR	Impact
86023	Tyn-twll Farm aircraft wreck	Wreck	Е	SJ3582051678	Unaffected by current plan
82617	Erlas Hall ridge and furrow I	Ridge and furrow	В	SJ3714050680	Partial loss
82618	Erlas Hall ridge and furrow II	Ridge and furrow	С	SJ3722650581	Partial loss
82623	Bryn Estyn marl pit I	Marl pit	D	SJ3598151509	Unaffected by current plan
82624	Erlas Hall marl pit II	Marl pit	D	SJ3725850617	Unaffected by current plan
82625	Erlas Hall marl pit III	Marl pit	D	SJ3731450615	Unaffected by current plan
82626	Bryn Estyn revetment wall	Wall	D	SJ3651251313	Loss
82627	Bryn Estyn holloway	Holloway	С	SJ36535089	Unaffected by current plan
82628	Bryn Estyn earthworks	Earthwork	E	SJ36455094	Unaffected by current plan?
82629	Erlas Hall ridge and furrow III	Ridge and furrow	С	SJ37395078	Unaffected by current plan
86007	Bryn Estyn	House	В	SJ3618251186	Unaffected by current plan
86022	Redwither aircraft wreck	Wreck	E	SJ3662650916	Partial loss ?

# 6.8 Southern Access: Black route

PRN	Name	Site type	Category	NGR	Impact
7821	Cross Lanes Chapel	Chapel	A	SJ3743046820	Partial loss ?
61380	Cross Lanes Pond	Pond	D	SJ3740046820	Unaffected by current plan
61440	Cross Lanes Hotel marl pit II	Marl pit	D	SJ3750047030	Loss
82602	Cross Lanes Building	Building	E	SJ3739046800	Unaffected by current plan
82603	Cross Lane Hotel ridge and furrow I	Ridge and furrow	С	SJ3747046960	Partial loss
82604	Cross Lanes Hotel marl pit I	Marl pit	D	SJ3747046990	Loss
82640	Cross Lanes Hotel	House	В	SJ3736046933	Unaffected by current plan

# 6.9 Southern Access: Purple route

PRN	Name	Site type	Category	NGR	Impact
61452	Maelor Abattoir marl pit II	Marl pit	D	SJ37164768	Unaffected by current plan
61468	The Hollies marl pits I	Marl pit	D	SJ3697047570	Unaffected by current plan?
82615	The Hollies marl pit II	Marl pit	D	SJ3684047380	Unaffected by current plan
82636	The Hollies ridge and furrow I	Ridge and furrow	С	SJ37084754	Partial loss
82637	The Hollies ridge and furrow II	Ridge and furrow	E	SJ36904734	Partial loss ?
82638	The Hollies ridge and furrow III	Ridge and furrow	С	SJ36934750	Partial loss ?
82639	Maelor Abattoir ridge and furrow III	Ridge and furrow	D	SJ37104771	Partial loss ?
86011	Ty'n y coed footbridge	Footbridge	D	SJ3683848421	Unaffected by current plan
86013	Five Fords Sluice II	Sluice	Е	SJ3696248162	Unaffected by current plan
86017	Wrexham and Ellesmere Railway	Railway	D	SJ3678047687	Partial loss
86018	The Hollies Milestone	Milestone	С	SJ3701447342	Unaffected by current plan

# 6.10 Southern Access: Yellow route

PRN	Name	Site type	Category	NGR	Impact
61451	Maelor Abattoir marl pit	Marl pit	D	SJ3727047660	Unaffected by current plan
82607	Bedwell Hall ridge and furrow II	Ridge and furrow	С	SJ3744047440	Partial loss
82608	Bedwell Hall ridge and furrow III	Ridge and furrow	С	SJ3740047500	Partial loss
82609	Bedwell Hall marl pits I	Marl pit	D	SJ3736047460	Unaffected by current plan
82610	Bedwell Hall ridge and furrow IV	Ridge and furrow	С	SJ3740047600	Unaffected by current plan
82611	Bedwell Hall ridge and furrow V	Ridge and furrow	С	SJ3736047610	Loss
82612	Maelor Abattoir ridge and furrow I	Ridge and furrow	С	SJ37344770	Partial loss
82635	Maelor Abattoir ridge and furrow II	Ridge and furrow	Е	SJ37264775	Unaffected by current plan
82642	Cross Lanes ridge and furrow I	Ridge and furrow	С	SJ37494724	Partial loss ?
82643	Cross Lanes ridge and furrow II	Ridge and furrow	С	SJ37434719	Partial loss ?
86017	Wrexham and Ellesmere Railway	Railway	D	SJ3678047687	Partial loss

# 6.11 Southern Access: Red route

PRN	Name	Site type	Category	NGR	Impact
41778	Bedwell Hall	House	A	SJ3758447312	Unaffected by current plan
41779	Pum-Rhyd	House	A	SJ3748048118	Unaffected by current plan
61453	Maelor Abattoir marl pit	Marl pit	D	SJ3743847717	Unaffected by current plan
82606	Bedwell Hall ridge and furrow I	Ridge and furrow	С	SJ3751047410	Unaffected by current plan
82607	Bedwell Hall ridge and furrow II	Ridge and furrow	С	SJ3744047440	Partial loss ?
82608	Bedwell Hall ridge and furrow III	Ridge and furrow	С	SJ3740047500	Partial loss ?
82610	Bedwell Hall ridge and furrow IV	Ridge and furrow	С	SJ3740047600	Unaffected by current plan
82633	Bedwell Hall ridge and furrow	Ridge and furrow	Е	SJ37634729	Unaffected by current plan
82634	Maelor Abattoir ridge and furrow I	Ridge and furrow	С	SJ37344770	Unaffected by current plan
82641	Bedwell Hall ridge and furrow VI	Ridge and furrow	С	SJ37494763	Partial loss ?
82642	Cross Lanes ridge and furrow I	Ridge and furrow	С	SJ37494724	Partial loss ?
82643	Cross Lanes ridge and furrow II	Ridge and furrow	С	SJ37434719	Partial loss?

## 7 MITIGATION AND RECOMMENDATIONS

- 7.1 The assessment area extends over a large tract of countryside, and not surprisingly a significant number of sites of archaeological interest have been identified. The potential impact of each proposed route has been considered above, based on the results from the earlier desk-based study and a field assessment within the general study area. No detailed archaeological field survey has been undertaken.
- 7.2 Mitigation strategies and recommendations fall under two headings, the specific (section 7.3) and the general (7.4). The former relate to those sites and features which have already been detected through one or other forms of survey, and where we consider that some further stage of work is required before the commencement of site works. General recommendations relate to the currently unquantifiable potential of the archaeological resource.

## 7.3 Specific Mitigation Strategies

- 7.3.1 To inform this section of the report we have maintained the same table format as in section 6, as this is appropriate given the level of consistency in the recommended strategies. As a general guide it should be assumed that the suggested mitigation for Category A and most Category B sites would be preservation in situ (see below for explanation). Preservation by record would usually be recommended for Category C and probably Category D sites, unless circumstances specific to a particular site dictated otherwise. Category E sites would require evaluation, as might some sites in higher categories, depending on the nature of the proposed impact. It should also be stressed at this stage that the archaeological curator might decide on his/her own recommendations.
- 7.3.2 The following standard archaeological terms are used below as recommended mitigation measures:

Preservation in situ: where a site is considered to be of sufficient significance it may be considered appropriate to preserve the site in its present form, condition and location.

Preservation by record: where proposals will inevitably lead to the loss of a site sufficient recording should be undertaken to provide a full, accurate and permanent record of its nature, form, significance and dating. Preservation by record can take a number of forms, depending on the nature of the site in question, and may be achieved with or without excavation and could include any or all of the following: written record; drawn record; photographic record; artefactual record; survey; and environmental sampling.

Unless guidance is requested jointly from the client and archaeological curator, the level of detail required for preservation by record in any specific instance is a decision for the Wrexham CBC archaeological curator to make rather than the writer of this report. However, by way of example the record of ridge and furrow could involve the detailed definition of the different furlongs (or groups of ridges) through the use of aerial photography and possibly ground survey, the measurement and profiling of selected groups of ridges and the identification and recording of any special earthwork forms such as headlands. It might even involve limited trenching to clarify the makeup of the ridges. In contrast the preservation by record of the Bryn Estyn revetment wall (PRN 82626) might require a survey of its extent, some detailed photography and perhaps a watching brief when it was destroyed to establish its construction.

Excavation: where a feature of local or minor significance is to be wholly removed as part of the development, its complete excavation may be required in advance of any construction works.

Evaluation: where insufficient information exists regarding a site for a decision to be made regarding its future management a programme of investigative work may be proposed. Such investigation may include geophysical survey, topographical survey and trial excavation.

Watching brief: a watching brief may be recommended to include archaeological monitoring of all relevant groundworks, including topsoiling, in order to identify and record any previously unknown archaeological remains which may be revealed. Sufficient time must be allowed for adequate recording of any remains that are encountered.

Consultation: aircraft wrecks presentation their own particular set of issues: is the wreck in-situ or has most or all of it been removed; are the remains likely to be in one spot or spread widely across the landscape; could there by live ammunition in and around the wreck; could any human remains be associated with the wreck? For these reasons, the next course of action should be to consult with a local specialist study group and/or the RAF to establish what might be encountered on the site, before determining what further work mmight be necessary.

Monitoring: in addition a reasonable proportion of the identified sites do not appear to be threatened by the works as presented in the various detailed plans currently available. However, it is possible that relatively small shifts in the alignment of a particular route line might lead to an otherwise unanticipated impact, or that associated works such as compounds, access lines and the like might also effect recorded sites. As a consequence we recommend that for the majority of sites close to but not on the line of any particular corridor there is some level of monitoring put in place at final plan stage to ensure that there is no impact.

## 7.3.3 Northern Access: Black route

PRN	Name	Site type	Category	Impact	Mitigation
86023	Tyn-twll Farm aircraft wreck	Wreck	E	Unaffected by current plan	Monitoring

## 7.3.4 Northern Access: Blue route

PRN	Name	Site type	Category	Impact	Mitigation
82620	Llan-y-pwll farm earthwork	Earthwork	Е	Unaffected by current plan	Monitoring
82621	Gredington Arms quarry	Quarry	D	Loss	Preservation by record
82622	Keeper's Cottage	House	В	Loss	Preservation by record
86003	Holt Road Smithy Well	Well	D	Unaffected by current plan	Monitoring
86004	Holt Road Milestone	Milestone	С	Loss	Relocation
86005	Holt Road Well	Well	D	Loss	Preservation by record
104467	Holt Road Smithy	Building	В	Unaffected by current plan	Monitoring

7.3.5 Keeper's Cottage may be an example of a particular estate design, although which estate has not yet been determined. In general the implication of a Category B listing is that the feature in question should be preserved, but in this specific case such a course of action seems it inappropriate given that its removal is fundamental to both the green and blue routes. Consequently, a full record is recommended, prior to demolition.

## 7.3.6 Northern Access: Green route

PRN	Name	Site type	Category	Impact	Mitigation
82620	Llan-y-pwll farm earthwork	Earthwork	Е	Loss	Evaluation
82622	Keeper's Cottage	House	В	Loss	Preservation by record
86003	Holt Road Smithy Well	Well	D	Unaffected by current plan	Monitoring
86024	Gourton Hall aircraft wreck	Wreck	E	Unaffected by current plan	Monitoring
10446	Holt Road Smithy	Building	В	Unaffected by current plan	Monitoring

# 7.3.8 Northern Access: Green and Blue route

PRN	Name	Site type	Category	Impact	Mitigation
27087	Croes Yorkin	House	A	Unaffected by current plan	Monitoring
36745	Llan y Pwll, Holt Lodge Farm	House	A	Unaffected by current plan	Monitoring
82619	Bryn Villa ridge and furrow	Ridge and furrow	C	Loss	Preservation by record
82630	Bryn Villa holloway	Hollow Way	D	Unaffected by current plan	Monitoring
82631	Hugmore House ridge and furrow	Ridge and furrow	Е	Partial Loss ?	Preservation by record
82632	Bryn Villa marl pit	Marl pit	D	Loss	Preservation by record
86001	Holt Lodge Well	Well	E	Loss ?	Preservation by record
86025	Holt Lodge Farm aircraft wreck	Wreck	E	Partial Loss ?	Consultation
86026	Spring Grove aircraft wreck	Wreck	E	Loss ?	Consultation

# 7.3.9 Northern Access: Brown route

PRN	Name	Site type	Category	Impact	Mitigation
86023	Tyn-twll Farm aircraft wreck	Wreck	E	Unaffected by current plan	Monitoring
82617	Erlas Hall ridge and furrow I	Ridge and furrow	В	Partial loss	Preservation in situ ?
82618	Erlas Hall ridge and furrow II	Ridge and furrow	С	Partial loss	Preservation by record
82623	Bryn Estyn marl pit I	Marl pit	D	Unaffected by current plan	Monitoring
82624	Erlas Hall marl pit II	Marl pit	D	Unaffected by current plan	Monitoring
82625	Erlas Hall marl pit III	Marl pit	D	Unaffected by current plan	Monitoring
82626	Bryn Estyn revetment wall	Wall	D	Loss	Preservation by record
82627	Bryn Estyn holloway	Holloway	С	Unaffected by current plan	Monitoring
82628	Bryn Estyn earthworks	Earthwork	E	Unaffected by current plan?	Monitoring
82629	Erlas Hall ridge and furrow III	Ridge and furrow	С	Unaffected by current plan	Monitoring
86007	Bryn Estyn	House	В	Unaffected by current plan	Monitoring
86022	Redwither aircraft wreck	Wreck	E	Partial loss ?	Consultation

7.3.10 The ridge and furrow to the west of Erlas Hall (PRN 82617) is a particularly well-defined block of earthworks with several furlongs showing. It is a cut above the rest of the ridge and furrow identified along the route and merits special consideration as to its future.

## 7.3.11 Southern Access: Black route

PRN	Name	Site type	Category	Impact	Mitigation
7821	Cross Lanes Chapel	Chapel	A	Partial loss ?	Preservation in situ
61380	Cross Lanes Pond	Pond	D	Unaffected by current plan	Monitoring
61440	Cross Lanes Hotel marl pit II	Marl pit	D	Loss	Preservation by record
82602	Cross Lanes Building	Building	E	Unaffected by current plan	Monitoring
82603	Cross Lane Hotel ridge and furrow I	Ridge and furrow	С	Partial loss	Preservation by record
82604	Cross Lanes Hotel marl pit I	Marl pit	D	Loss	Preservation by record
82640	Cross Lanes Hotel	House	В	Unaffected by current plan	Monitoring

# 7.3.12 Southern Access: Purple route

PRN	Name	Site type	Category	Impact	Mitigation
61452	Maelor Abattoir marl pit II	Marl pit	D	Unaffected by current plan	Monitoring
61468	The Hollies marl pits I	Marl pit	D	Unaffected by current plan ?	Monitoring
82615	The Hollies marl pit	Marl pit	D	Unaffected by current plan	Monitoring
82636	The Hollies ridge and furrow I	Ridge and furrow	С	Partial loss	Preservation by record
82637	The Hollies ridge and furrow II	Ridge and furrow	E	Partial loss ?	Preservation by record
82638	The Hollies ridge and furrow III	Ridge and furrow	E	Partial loss ?	Preservation by record
82639	Maelor Abattoir ridge and furrow III	Ridge and furrow	D	Partial loss ?	Preservation by record
86011	Ty'n y coed footbridge	Footbridge	E	Unaffected by current plan	Evaluation
86013	Five Fords Sluice II	Sluice	Е	Unaffected by current plan	Monitoring
86017	Wrexham and Ellesmere Railway	Railway	D	Partial loss	Watching brief
86018	The Hollies Milestone	Milestone	С	Unaffected by current plan	Monitoring

## 7.3.13 Southern Access: Yellow route

PRN	Name	Site type	Category	Impact	Mitigation
61451	Maelor Abattoir marl pit	Marl pit	D	Unaffected by current plan	Monitoring
82607	Bedwell Hall ridge and furrow II	Ridge and furrow	С	Partial loss	Preservation by record
82608	Bedwell Hall ridge and furrow III	Ridge and furrow	С	Partial loss	Preservation by record
82609	Bedwell Hall marl pits I	Marl pit	D	Unaffected by current plan	Monitoring
82610	Bedwell Hall ridge and furrow IV	Ridge and furrow	C	Unaffected by current plan	Monitoring
82611	Bedwell Hall ridge and furrow V	Ridge and furrow	С	Loss	Preservation by record
82612	Maelor Abattoir ridge and furrow I	Ridge and furrow	С	Partial loss	Preservation by record
82635	Maelor Abattoir ridge and furrow II	Ridge and furrow	E	Unaffected by current plan	Monitoring
82642	Cross Lanes ridge and furrow I	Ridge and furrow	C	Partial loss ?	Preservation by record
82643	Cross Lanes ridge and furrow II	Ridge and furrow	C	Partial loss ?	Preservation by record
86017	Wrexham and Ellesmere Railway	Railway	D	Partial loss	Watching brief

# 7.3.14 Southern Access: Red route

PRN	Name	Site type	Category	Impact	Mitigation
41778	Bedwell Hall	House	A	Unaffected by current plan	Monitoring
41779	Pum-Rhyd	House	A	Unaffected by current plan	Monitoring
61453	Maelor Abattoir marl pit III	Marl pit	D	Unaffected by current plan	Monitoring
82606	Bedwell Hall ridge and furrow I	Ridge and furrow	С	Unaffected by current plan	Monitoring
82607	Bedwell Hall ridge and furrow II	Ridge and furrow	C	Partial loss ?	Preservation by record
82608	Bedwell Hall ridge and furrow III	Ridge and furrow	С	Partial loss ?	Preservation by record
82610	Bedwell Hall ridge and furrow IV	Ridge and furrow	C	Unaffected by current plan	Monitoring
82633	Bedwell Hall ridge and furrow	Ridge and furrow	E	Unaffected by current plan	Monitoring
82634	Maelor Abattoir ridge and furrow I	Ridge and furrow	С	Unaffected by current plan	Monitoring
82641	Bedwell Hall ridge and furrow VI	Ridge and furrow	С	Partial loss ?	Preservation by record
82642	Cross Lanes ridge and furrow I	Ridge and furrow	С	Partial loss ?	Preservation by record
82643	Cross Lanes ridge and furrow II	Ridge and furrow	С	Partial loss ?	Preservation by record

## 7.4 General Mitigation Strategies

- 7.4.1 The report has identified a considerable amount of archaeology along the course of the various route options, but this is likely to represent only a fraction, albeit an unknown fraction, of the total archaeological resource. A large part of the problem lies in the fact that this area has seen considerable agricultural activity over the centuries, manifest in the ridge and furrow which remains in some fields and the cereal and maize fields visible today. Indeed, it is estimated that 39% of the yellow route, 43% of the orange route and as much as 66% of the purple route were under cultivation at the time of the field visit. The effect of any cultivation is to level out the remains of past activity, leaving features intact at subsoil level and cultural material in the ploughsoil, but noting visible on the surface. This can best be seen by the disappearance of medieval agricultural remains the ridge and furrow from those fields which are now regularly cultivated.
- 7.4.2 To identify these buried remnants, there are a variety of approaches. None is guaranteed to produce a positive result, but some or even all are worth trying in order to resolve an otherwise insuperable problem. With the exception of the watching brief, all need to be implemented before the commencement of on-site construction works.
- 7.4.3 Trial trenching. Regular trenches dug along the length of the selected route in anticipation that say a 5% sample may reveal some of what exists at subsoil level.

Geophysics. Conducted over the whole of a large part of the corridor to determine whether sub-surface anomalies are apparent; the results may be dependent not only on the presence of the archaeology but also on the susceptibility of the soils to produce good results.

Fieldwalking. Cultural material tends to get 'captured' in the ploughsoil, and consequently this material may be collected from the surface of cultivated fields under the right conditions and give a guide to earlier activity on the site. Forward planning is needed because 'windows of opportunity' for successful fieldwalking are usually limited to the winter and spring months.

Watching brief. Undertaken during topsoil stripping at the beginning of the on-site works. This is not ideal because of the difficulties in detecting features that have been obscured by the passage of machines. Furthermore in the event that something of significance is identified, arrangements need to be made for time to investigate it.

7.4.4. The archaeological curator in consultation with the client should determine which of these approaches might be adopted for the various routes.

## 8 ACKNOWLEDGEMENTS

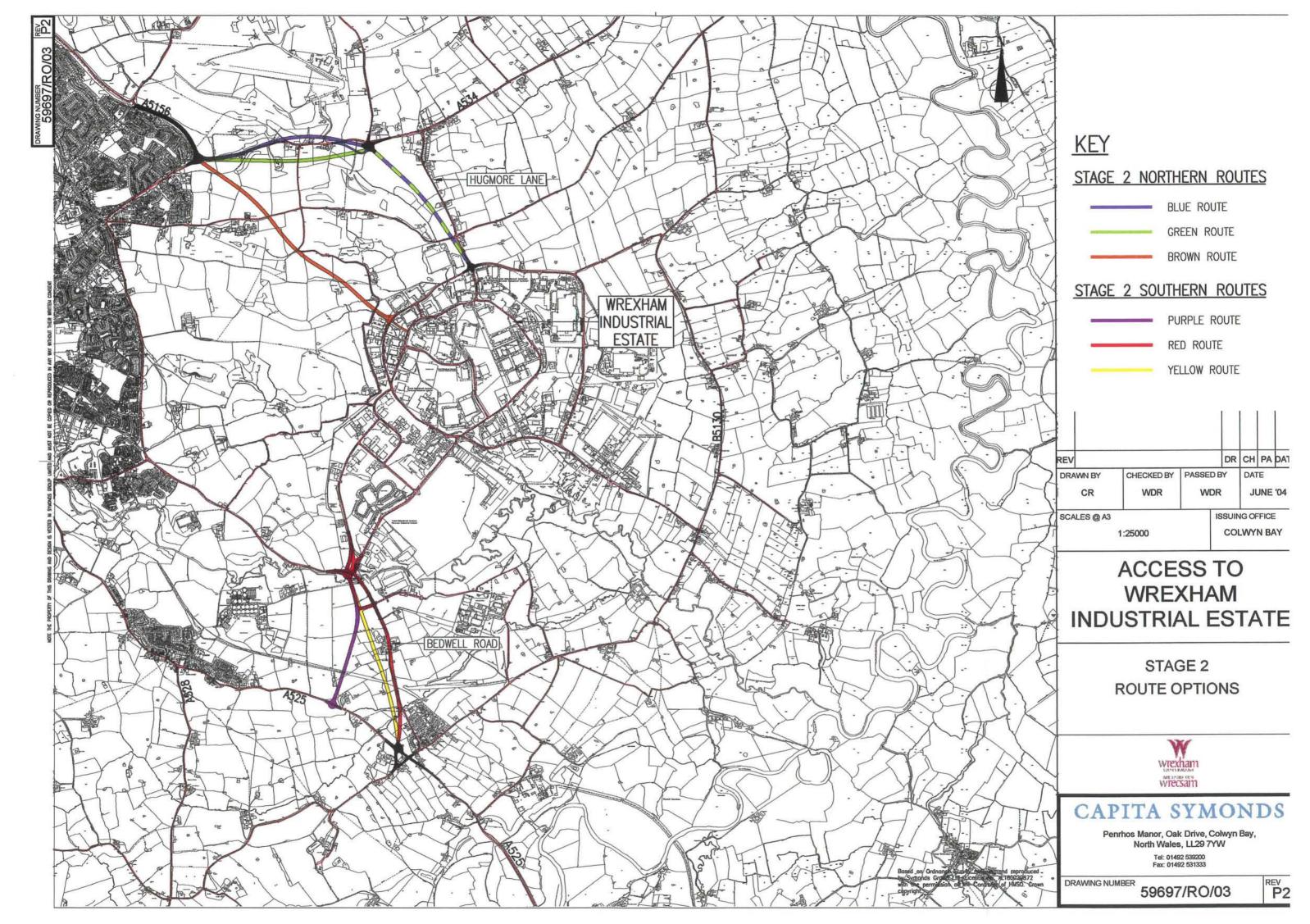
8.1 The writer would like to thank the staff of the Planning Environment Section of Wrexham County Borough Council. The NMR in Aberystwyth and the SMR in Welshpool for their assistance in the detailed desk-top assessment, and Capita Symonds for facilitating the walkover survey.

## 9 SOURCES

# 9.1 Aerial Photographic Sources

1985 J A Storey 1885/007-008;112 01/06/1985

1992/3 Geonex 100/93/008-009 26/08/1993 111/92/183-184 26/06/1992



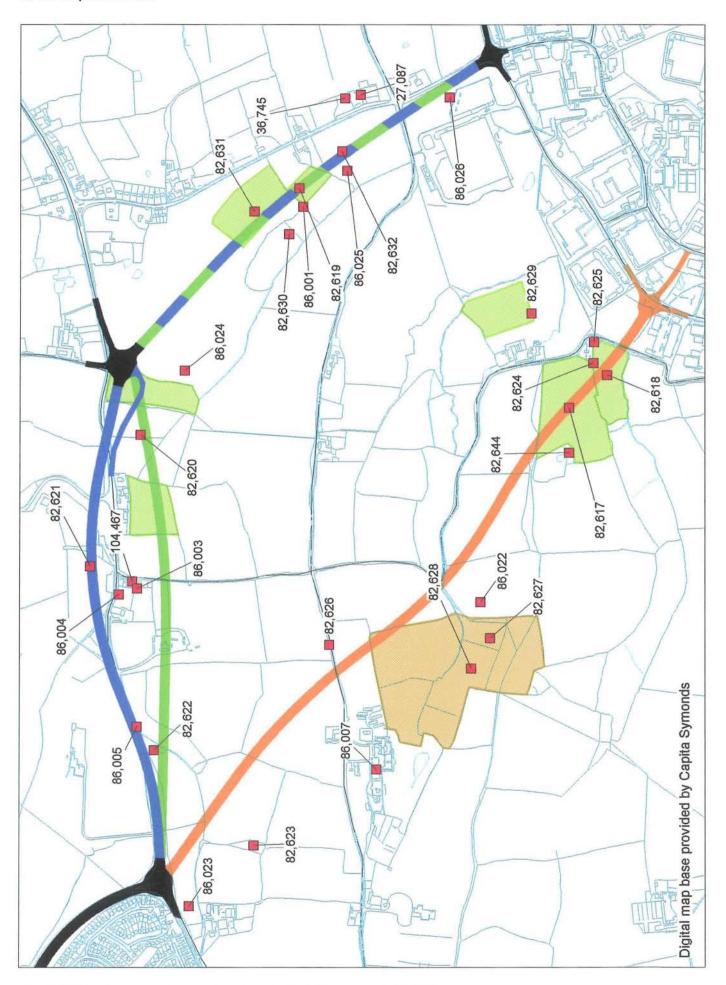


Fig. 2 Northern route options and archaeological sites, scale 1:10,000

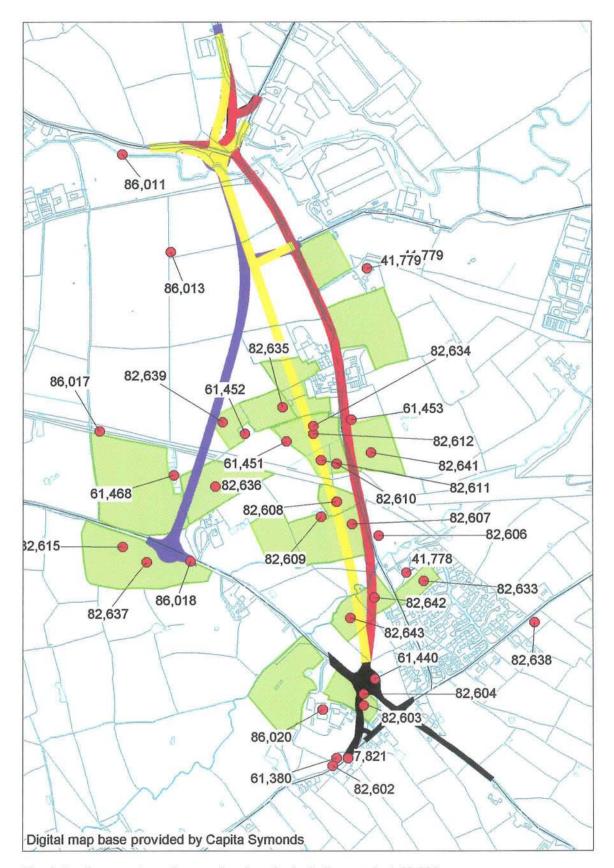


Fig. 3 Southern route options and archaeological sites, scale 1:10,000

# Appendix 1: Gazetteer of Archaeological Sites

<b>PRN</b> 7821	Name Cross Lanes Chapel Small Wesleyan chapel carrying a dateston	NGR SJ3743046820 e of 1834. On the		Period Post Medieval
27087	Croes Yorkin is a listed Grade II building.	SJ37975123	House	Post Medieval
36745	Llan y Pwll/Holt Lodge Farm Llan y Pwll or Holt Lodge Farm is a Grade	SJ3796151272 II isted building	1	Post Medieval
41778	Bedwell Hall The building survives with some modern ex Bedwell Court - now extends right up to the			17th century ? estate -
41779	Pum-Rhyd Brick-built farmhouse and outbuildings in g	SJ3748048118 good condition, a		17th century?
61380	Cross Lanes Pond Extant pond, probably formerly a marl pit.	SJ3740046820	Pond	Post Medieval
61440	Cross Lanes Hotel marl pit II A water-filled marl pit, surrounded and par	SJ3750047030 tially covered in		Post Medieval
61451	Maelor Abattoir marl pit Water-filled marl pit.	SJ3727047660	Marl pit	Post Medieval
61452	Maelor Abattoir marl pit II  Marl pit visible on 1985 vertical aerial pho under arable cultivation, and it is probable	• • •	마이크 그림을 내가 들었다. 그리고 있는 사람들이 되었다. 그리고 그리고 그리고 있다.	Post Medieval rger one
61453	Maelor Abattoir marl pit III	SJ3743847717	Marl pit	Post Medieval
61468	The Hollies marl pits I Group of water-filled marl pits, surrounded 61470).	SJ3697047570 I and partly chok		Post Medieval 61468-
82602	Cross Lanes Building Brick building of unknown origin. Probably	SJ3739046800 y no earlier than		Post Medieval
82603	Cross Lane Hotel ridge and furrow I Low ridge and furrow, less than 4m wide a lawned area in front of the hotel.		Ridge and furrow nning parallel to the long	Medieval axis of the

<i>PRN</i> 82604		VGR J3747046990 cut through th		Period Post Medieval 82603)
82606	Bedwell Hall ridge and furrow I S. Slight ridge and furrow running on an alignme		Ridge and furrow allel to the road.	Medieval
82607	Bedwell Hall ridge and furrow II S. Ridge and furrow with ridges around 5-6m in v		Ridge and furrow m high. Full extent not es	Medieval tablished.
82608	Bedwell Hall ridge and furrow III S. Ridge and furrow, with at least two furlongs at wide and 0.2m high.		Ridge and furrow to each other. Ridges up	Medieval to 7m
82609	Bedwell Hall marl pits I S. Water-filled marl pits, surrounded by vegetation	J3736047460 on.	Marl pit	Post Medieval
82610	Bedwell Hall ridge and furrow IV S. Ridge and furrow, the ridges running north-we high.		Ridge and furrow st and around 6m wide ar	Medieval nd 0.4m
82611	Bedwell Hall ridge and furrow V S. Ridge and furrow, the ridges running north-we the field.		Ridge and furrow st, but restricted to the no	Medieval orth side of
82612	Maelor Abattoir ridge and furrow IV S. Ridge and furrow, the ridges around 6m wide a		Ridge and furrow	Medieval
82615	The Hollies marl pit II S. A marl pit, long abandoned and now showing a	5J3684047380 as a grassy ho		Post Medieval
82616	Erlas Hall marl pit I S. Water-filled marl pits, surrounded by vegetation	SJ3700050840 on and within	-	Post Medieval
82617	Erlas Hall ridge and furrow I Several furlongs of ridge and furrow in excelle 6m wide and 0.4m high. Aerial photographs clearthworks.	ent condition,		
82618	Erlas Hall ridge and furrow II S. Ridge and furrow, the ridges now fairly slight undetectable on aerial photographs.		Ridge and furrow isible on the ground but	Medieval largely

<b>PRN</b> 82619	Name Bryn Villa ridge and furrow Faint ridge and furrow, 6m wide and 0.3m		Site Type Ridge and furrow more westerly half of the	Period Medieval field.
82620	Llan-y-pwll farm earthwork A slightly sinuous earthwork, about 5m wie It is perhaps no more than relict field bank		, crosses the field from e	Unknown ast to west.
82621	Gredington Arms quarry A large abandoned quarry cut into the scar	SJ36725194 p and now covere	Quarry ed in woodland.	Post Medieval
82622	Keeper's Cottage Keper's Cottage looks to be an estate cottage It has vernacular embellishments. It does no	- Chiga management and a colline and the	nly not earlier than the 19	Post Medieval
82623	Bryn Estyn marl pit I Water-filled marl pit.	SJ3598151509	Marl pit	Post Medieval
82624	Erlas Hall marl pit II Marl pit.	SJ3725850617	Marl pit	Post Medieval
82625	Erlas Hall marl pit III Marl pit.	SJ3731450615	Marl pit	Post Medieval
82626	Bryn Estyn revetment wall The northern roadside edge has been revette largely intact.	SJ3651251313 ed by a well-buil		Post Medieval , still
82627	Bryn Estyn holloway A holloway appears on a 1993 vertical aer Ordnance Survey maps. It is an extension of			
82628	Bryn Estyn earthworks Several contiguous fields of pasture land wholloway (PRN 82627) there are other visit certain and some may be only relict field be	ble earthworks in	작사 있었어요	
82629	Erlas Hall ridge and furrow III Ridge and furrow is visible on aerial photo watercourse which looks to have been part Hall originally had a moat around it.			
82630	Bryn Villa holloway Vague marks on a 1993 aerial photograph shallow valley, but alternatively the marks			

<b>PRN</b> 82631	Name Hugmore House ridge and furrow Ridge and furrow visible on 1993 aerial pho- likely that recent agricultural improvement				
82632	Bryn Villa marl pit A possible marl pit shows on 1993 vertical golf course has not been ascertained.	SJ37825128 aerial photograph	Marl pit hy. Whether this remains	Post Medieval within the	
82633	Bedwell Hall ridge and furrow Ridge and furrow is visible on 1992 vertica built over.	SJ37634729 I aerial photograp	Ridge and furrow phy. It is believed to have	Medieval been now	
82634	Maelor Abattoir ridge and furrow I Ridge and furrow visible on 1985 vertical a	SJ37344770 erial photograph	Ridge and furrow y.	Medieval	
82635	Maelor Abattoir ridge and furrow II SJ37264775 Ridge and furrow Medieval Ridge and furrow visible on 1985 vertical aerial photography, but the field now part of a larger one under arable cultivation, and it must be assumed that the ridge and furrow has gone.				
82636	The Hollies ridge and furrow I SJ37084754 Ridge and furrow Medieval Ridge and furrow visible on 1985 and 1993 vertical aerial photography, but its presence could not be confirmed by fieldwork because of the present overgrown state of the field.				
82637	The Hollies ridge and furrow II Ridge and furrow visible on 1985 vertical a confirmed by fieldwork.	SJ36904734 erial photograph	Ridge and furrow y, but its presence could	Medieval not be	
82638	The Hollies ridge and furrow III Ridge and furrow visible on 1985 vertical a confirmed by fieldwork because of the prese		-	Medieval not be	
82639	Maelor Abattoir ridge and furrow III Ridge and furrow visible on 1985 vertical a one under arable cultivation, and it must be				
82641	Bedwell Hall ridge and furrow VI	SJ37494763	Ridge and furrow	Medieval	
82642	Cross Lanes ridge and furrow I Ridge and furrow visible on recent oblique ground because of vegetation conditions	SJ37494724 aerial photograpl	Ridge and furrow h, but not presently visib	Medieval le on	
82643	Cross Lanes ridge and furrow II Ridge and furrow visible on recent oblique ground because of vegetation conditions	SJ37434719 aerial photograpl	Ridge and furrow h, but not presently visib	Medieval le on	

<b>PRN</b> 82644	Name Erlas Hall marl pits IV	<i>NGR</i> SJ37025068	Site Type Marl pit	Period Post Medieval
86001	Holt Lodge Well  A well is depicted on the first edition Ordna been confirmed on the ground.	SJ3767351384 ance Survey map.		Post Medieval nas not
86003	Holt Road Smithy Well  A well is depicted on the first edition Ordna been confirmed on the ground.	SJ3666151817 ance Survey map.		Post Medieval nas not
86004	Holt Road Milestone A milestone was depicted on the Ordnance be located.	SJ3664551866 Survey 3rd editio		Post Medieval nnot now
86005	Holt Road Well  A well is depicted on the first edition Ordna garden of Keepers Lodge is a small pool, or the well. It has not been examined closely.		of 1887. Beyond the east	
86007	Bryn Estyn Bryn Estyn house and parkland. A group of pools, a well etc, all depicted on the older Converted to a children's home, but its present	Ordnance Survey	wooded parkland with d maps. It has subsequently	y been
86011	Ty'n y coed footbridge A footbridge was depicted on the second ed trace of it has been seen and it assumed to l		-scale Ordnance Survey i	19th Century map but no
86013	Five Fords Sluice II A sluice is depicted on the second edition of continuing existence has not been confirmed			19th Century t
86017	Wrexham and Ellesmere Railway The line now shows as a grassy strip betwee indicative of a former embankment. No evidence of the control of th		at least one place there is	
86018	The Hollies Milestone A milestone was depicted on the large-scale has been noted recently, and it is assumed to		ey map of 1899, but no tr	Post Medieval race of it

	86020	Name Cross Lanes Hotel Maes y Nant House depicted on late 19th-ce name from the former open fields. It is now century building surrounded by landscaped an earlier origin is possible.	the Cross Lanes	Survey maps, the place to Hotel and is probably a	9th-
	86022	Redwither aircraft wreck Aircraft wreck identified by Pratt & Grant.	SJ3662650916	Wreck	20th Century
{	86023	Tyn-twll Farm aircraft wreck Aircraft wreck identified by Pratt & Grant.	SJ3582051678	Wreck	20th Century
8		Gourton Hall aircraft wreck Aircraft wreck identified by Pratt & Grant.	SJ3723851691	Wreck	20th Century
8		Holt Lodge Farm aircraft wreck Aircraft wreck identified by Pratt & Grant.	SJ3776951266	Wreck	20th Century
1		Spring Grove aircraft wreck Aircraft wreck identified by Pratt & Grant.	SJ3796350997	Wreck	20th Century
8		Hugmore aircraft wreck I Aircraft wreck identified by Pratt & Grant.	SJ3763852147	Wreck	20th Century
1		Hugmore aircraft wreck II Aircraft wreck identified by Pratt & Grant.	SJ3752652178	Wreck	20th Century
10		Holt Road Smithy The smithy has been converted to a modern	SJ3668051830 dwelling.	Building	Post Medieval