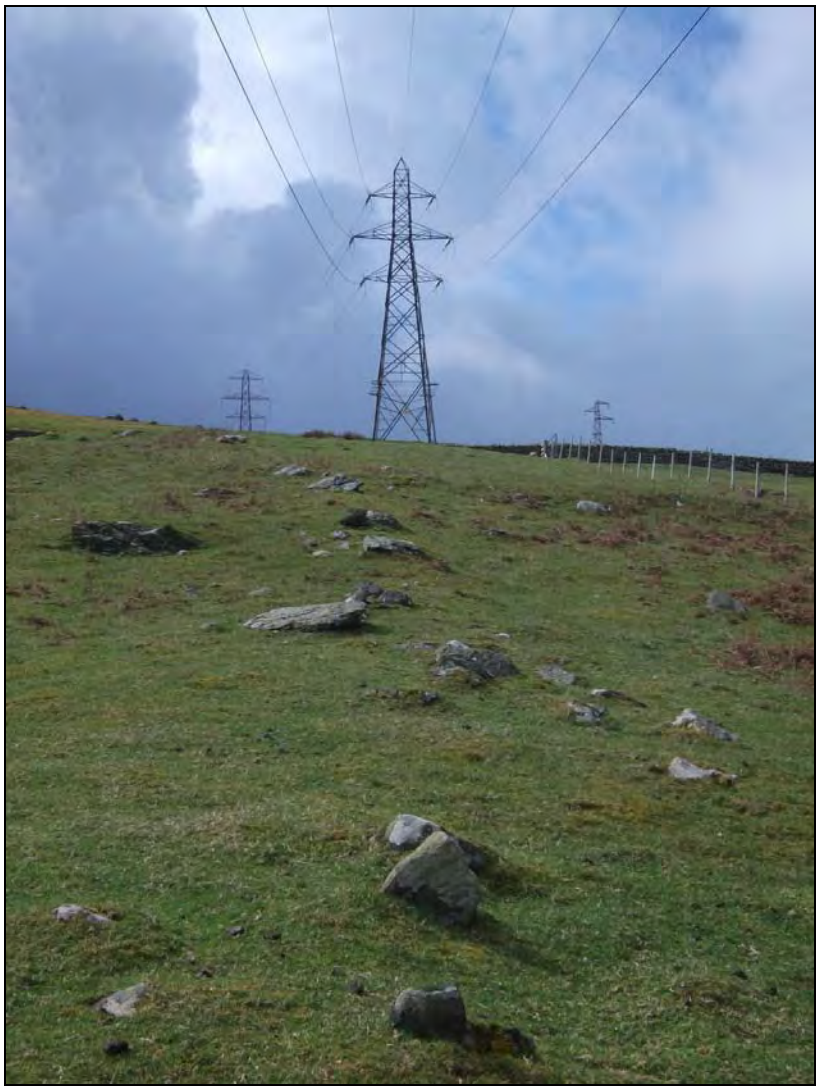
CPAT Report No 1188

Scottish Power Energy Networks
Dolgarrog to Pentir 132kV Overhead Powerline Refurbishment

REVISED CULTURAL HERITAGE ASSESSMENT



THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

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Report Prepared by:	*Position:*
N W Jones	Senior Project Archaeologist
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Checked by:	*Position:*	*Signed:*
R J Silvester	Head of Field Services	
Checked on:	15 April 2013	

Approved by:	*Position:*	*Signed:*
R J Silvester	Head of Field Services	
Approved on:	15 April 2013	

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The Clwyd-Powys Archaeological Trust
41 Broad Street, Welshpool, Powys, SY21 7RR
tel: 01938 553670, fax: 552179
email: trust@cpat.org.uk
www.cpat.org.uk

Cover: Part of the field system on Cae'r Mynydd, west of Abergwyngregyn (PRN 34713)

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1 Introduction

1.1 This report presents a revision of an assessment undertaken by the Field Services Section of the Clwyd-Powys Archaeological Trust (CPAT) of the potential direct impacts on cultural heritage assets along the route of an existing 132kv overhead powerline for which a scheme of refurbishment was proposed. The overhead line known as the AD line, runs from Dolgarrog in Conwy, to Pentir, near Bangor, in Gwynedd, passing through the Snowdonia National Park between towers AD5 and AD65. The original assessment was completed in April 2012 (Jones 2012) and revised in October of the same year in order to include a proposed underground cable connection to the substation at Pentir. The initial phase of the scheme involved the repainting of towers, and this was completed in 2012.

1.2 It is understood that there are no elements of the scheme which require planning permission, but the works are subject to the Electricity Act of 1989 which makes provision for the supply, generation and transmission of electricity. Schedule 9 of the Act details the preservation of amenity and fisheries, stating that:

> 'In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate or supply electricity:
> (a) shall have regard to the desirability of … protecting sites, buildings and objects of architectural, historical or archaeological interest; and
> (b) shall do what he reasonably can to mitigate any effects which the proposals would have on … any such flora, fauna, features, sites, buildings or objects.'

1.3 For much of its length the powerline passes through the Snowdonia National Park, including a short section within the National Trust Carneddau and Glyderau Estate. Significant sections of the route lie within areas which have been subject to archaeological field survey as part of the Uplands Initiative, organised by the Royal Commission on the Ancient and Historical Monuments in Wales (RCAHMW), including Eastern Snowdonia North and Central, conducted by Oxford Archaeology North between 2003-5 (Schofield 2004; 2005), as well as the National Trust's Archaeological Survey of the Carneddau in 1985 – 1997.

1.4 Information from the original baseline study has been used to develop the programme of works for the remaining phases of the scheme in order to mitigate against any potential impacts to known cultural heritage assets. Access routes have been designed to avoid assets and the location and extents of assets have been taken into account within the overall scheme of works. However, the full details of the nature of the works have only become available at a late stage, necessitating the production of the present report, which has been completed following a programme of field survey to investigate the potential impacts of each element of the scheme.

2 Nature of the Scheme

2.1 The refurbishment to the existing 132kV overhead powerline extends for around 25km from SH 7843 6810 at Dolgarrog to SH 5603 6780 at Pentir. The remaining works may be summarized as follows, with further details presented below:

- Access Routes
- Restringing of cables
- Scaffolding at road crossings
- Lower voltage diversions
- Foundation investigations
- Foundation reinforcements

- Underground connection at Pentir
- Site compound
- Steelwork upgrades
- Tree and vegetation clearance
- Emergency repairs

Access Routes

2.2 General access to the powerline will use existing tracks where possible, which will necessitate potholes and ruts infilling, although there are no plans to create new tracks, or widen existing tracks or gateways. However, during the final phase of the scheme, involving the upgrade of foundations, it is possible that a number of temporary bridges may be required between AD26 and AD46, although at the time of writing details have yet to be finalized and further assessment and mitigation will be considered at a later date should this be requried. Deviations from existing tracks have been designed to avoid known cultural heritage assets and these routes have been checked during the field survey to ensure no unrecorded but recognizable assets will be affected.

Restringing of cables

2.3 The replacement of the existing overhead cables involves positioning the winching equipment at towers AD9, AD13, AD46 and AD69, with the addition positioning of cable drums at AD36 and AD59. The existing cables will be used to pull the replacements along the overhead line. Winch positions will be protected by the use of a Dura-base Ground Protection Mat to prevent ground disturbance and alleviate issues of compaction. Each tower will also need to be accessed, using an ATV with low-pressure tyres, although no machinery will be needed. During this phase of the scheme there is the potential for direct impacts which could result from the use of the puller/tensioner equipment and conductor drums, vehicular access and material and equipment storage.

Scaffolding at road crossings

2.4 There are also a number of places along the route where scaffolding will be required beneath the overhead line to protect road crossings. The installation of the scaffolding will involve the placement of sole pads which are usually sited directly on the ground with no ground disturbance necessary. However, where scaffolds are erected on sloping ground, a level footing is required. This is achieved either by digging a small level footing area, or by making up level ground locally beneath each sole pad position. During these works there is the potential for direct impacts on previously unrecorded buried assets.

Lower voltage diversions

2.5 Additional works will also need to be conducted in association with the cable replacement, comprising the rerouting of lower voltage cables which cross beneath the overhead line, and which will include sections of new underground cabling and the replacement of existing poles and stays. During these works there is the potential for direct impacts on previously unrecorded buried assets.

Foundation investigations

2.6 Ground investigations are proposed at the base of 51 of the metal towers, each of which is supported on four separate concrete pads. This will determine the requirements for any remedial works to the tower bases which would involve a further stage of ground disturbance. The investigations will be restricted to the excavation of test pits alongside one or more corners of each tower, using a small, tracked, mechanical excavator. The precise dimensions of the test pits have yet to be determined and may vary from tower to tower but will be confined to within 2m of each corner. The ground around the tower bases has already been disturbed during their original construction in the 1950s, although the extent of this disturbance will vary. During this phase of the scheme there is the potential for direct impacts

on cultural heritage assets both from the ground investigations themselves, and from vehicular access.

Foundation reinforcements

2.7 Following on from the ground investigations a programme of foundation reinforcements will be developed to address any structural problems which have been identified. This may involve excavations at the base of each corner of the relevant towers, again measuring up to 2m by 2m, in order to reinforce the base with concrete. It is possible that stays may be required at the corner towers only during the reinforcement work in order to ensure the stability of the tower. During this phase of the scheme there is the potential for direct impacts on cultural heritage assets both from the ground investigations themselves, the positioning of stays, and from vehicular access.

Underground connection at Pentir

2.8 An underground connection from tower AD90 to the substation at Pentir is also required. This will be positioned adjacent to the existing underground cable. The cable trench will be relatively narrow, being sufficient to install the duct for the fibre optic cable, and will be up to 1m wide. There are no plans to remove topsoil within a wider wayleave. The underground cable connection has the potential to disturb previously unrecorded, buried deposits, should any be present along the route.

Site compound

2.9 Other than the positioning of winching equipment and cable drums at those locations identified above, the only site compound will be located away from the scheme in Conway.

Steelwork upgrades

2.10 Steelwork members will need to be upgraded on a number of towers, although the work is non-intrusive and will not involve any ground disturbance. The main potential for impacts will be from vehicular access, although this will utilize all wheel drive vehicles with low pressure tyres.

Tree and vegetation clearance

2.11 Some minor tree/scrub trimming will be required in order for refurbishment to take place at four of the towers, of which only AC193, at Dolgarrog, has any cultural heritage assets in close proximity.

Emergency Repairs

2.12 Extreme weather conditions in early April damaged a section of the overhead line between towers AD52 and AD57, necessitating the repair and replacement of the affected cables. This work will involve access for a tractor, winch and drum trailer and has the potential to impact on cultural heritage assets, mainly through vehicular access.

3 Sources of Information & Guidance

3.1 Cultural heritage is deemed to include the complete range of man-made features that have been introduced into the landscape from the Palaeolithic, more than two hundred and fifty thousand years ago, to the 20th century. Some of these features will be visible as upstanding remains on the ground; others will be buried and only become apparent during ground disturbance, whilst others may be objects that have been discarded, lost or deliberately deposited. Some will have an archaeological interest and importance; others will be more historical in their origin. In addition, some natural features will be relevant because of the information they contain; peat bogs, for instance, hold pollen that can throw light on past human activity in the area. Collectively, all these features are known as cultural heritage

assets - as for instance defined in the Highways Agency's Design Manual for Roads and Bridges (DMRB 2007).

3.2 The Design Manual for Roads and Bridges (DMRB), Volume 11 Section 3 Part 2, HA 208/07 provides a suitable, general framework for assessing the cultural heritage. The approach to the cultural heritage which it promotes, although designed for road developments, is relevant as a methodology for the proposed development and has been adopted here.

3.3 The baseline survey of the assessment was undertaken with reference to the principles and methods for assessing archaeological and cultural heritage assets laid out in a) the *Standard and Guidance for Archaeological Desk-based Assessments* (1994, revised 2012) and b) the *Standard and Guidance for Archaeological Field Evaluation* (1994, revised 2008), both produced by the Institute for Archaeologists, the regulatory body for the profession.

Consultations

3.4 The following have been consulted as part of the assessment and their responses have been taken into account when developing a strategy for mitigation:

- Ian Halfpenney, Cadw Regional Inspector of Ancient Monuments
- John Roberts, Snowdonia National Park Authority
- Kathy Laws, National Trust Archaeologist
- Ashley Batten, Gwynedd Archaeology Planning Service

4 Assessment Methodology

General

4.1 The original baseline assessment identified the cultural heritage assets within 200m of the overhead line, indicated their level of importance, whether national, regional or local, as well as identifying the significance of any impact that the development might have upon them, and recommended mitigation to limit the impact of the development on them.

Desk-top Methodology

4.2 The desk-based study, which formed the basis for the baseline assessment of the area, involved the examination of readily available written, cartographic, and aerial photographic sources held in the following repositories:

a) The National Monuments Record, Aberystwyth.
b) The National Library of Wales, Aberystwyth.
c) The regional Historic Environment Record maintained by GAT in Bangor

4.3 Data was also made available by the Royal Commission on the Ancient and Historical Monuments in Wales (RCAHMW) regarding the mapping of cultural heritage features from aerial photographs, although this only related to a small section of the route.

Field survey

4.4 Following the completion of the desk-top study a programme of carefully focussed fieldwork was undertaken to verify the location and extent of known assets within the unenclosed upland section of the route and further assess the potential impacts on them. Fieldwork was undertaken along the route where it crosses the upland areas between SH 6726 7173 and SH 6243 7110 and also between SH 6499 7094 and SH 6605 7137.

4.5 A further stage of field survey was conducted in April 2013, involving visits to each location where works were planned, as well as associated access routes, in order to determine potential impacts to cultural heritage assets and inform the development of appropriate mitigation. The

survey was conducted in advance of the emergency repairs, the potential impacts of which were incorporated into the study.

Impacts and Effects

4.6 This report considers potential direct impacts on statutorily protected assets and undesignated assets during all remaining phases of the scheme.

4.7 Direct impacts are most likely to result from:

a) the need to gain vehicular access to the overhead line during all phases of work
b) the use of the puller/tensioner equipment and conductor drums, as well as any equipment and material storage during restringing works.
c) the installation of the underground cable connection to the substation at Pentir.
d) the installation of the underground cable connections associated with lower voltage cables which cross beneath the overhead line.
e) the erection of scaffolding at a number of locations along the route.
f) ground investigation works at the base of towers and any subsequent foundation upgrades

4.8 Appropriate mitigation for all phases is recommended in Tables 2-9.

5 The Baseline Assessment

Scheduled Ancient Monuments

5.1 There are 11 scheduled ancient monuments within 200m of the overhead line which are tabulated and listed in Appendix 1.

Listed Buildings

5.2 There are 25 listed buildings within 200m of the overhead line, one of which is listed grade I and the remainder grade II, all of which will remain unaffected by the works; these are tabulated in Appendix 2.

Registered Historic Parks and Gardens

5.3 There are no Registered Historic Parks and Gardens within 200m of the overhead line.

Registered Historic Landscapes

5.4 The powerline passes through three Registered Historic Landscapes:

- Lower Conwy Valley
- North Arllechwedd
- Ogwen Valley

Conservation Areas

5.5 There are no Conservation Areas within 200m of the overhead line.

Undesignated Cultural Heritage Assets within 200m of the overhead line

5.6 A total of 176 undesignated cultural heritage assets were originally recorded within the regional Historic Environment Record within 200m of the overhead line and a further five assets were added following the field survey; a full list is provided in Appendix 3.

6 Assessment of Impacts

6.1 The various elements of the scheme are summarised in Table 1 together with the potential impacts to cultural heritage assets which have been determined following a programme of fieldwork. Appropriate mitigation is presented in Section 7.

Table 1 Summary of works and potential impacts at each location
(towers AD5 and AD65 lie within the Snowdonia National Park)

Tower	Nature of works	Assets within 50m	Distance to nearest asset	Potential impacts	Mitigation
AC192A	none			none	none
AC193	Winch Scrub clearance	PRN 1544 chambered tomb	15m	none	none
AC193-02	Scaffold		140m	none	none
AD2	Winch Replace existing pole. Excavations within pavement Tree clearance		>200m	none	none
AD2 – AD3	Scaffold			none	none
AD3	GI / foundation upgrade		>200m	none	none
AD3 - AD4	336m underground cable		>200m	Potential buried deposits	Watching brief
AD4	GI / foundation upgrade		>200m	none	none
AD4 - AD5	Scaffold		160m	none	none
AD5	Replace existing poles on LV line Generator		170m	none	none
AD6	none		-	none	none
AD7	none		-	none	none
AD7 - AD8	Scaffold 50m underground cable		90m	Potential buried deposits	Watching brief
AD8	none		-	none	none
AD9	GI / foundation upgrade Winch Scrub clearance		60m	none	none
AD9 - AD10	Scaffold	PRN 33945 building	40m	none	none
AD10	none		-	none	none
AD10 - AD11	145m underground cable	PRN 33950 ruined building	35m	Potential buried deposits	Watching brief
AD10 - AD11	Scaffold		125m	none	none
AD11	none		-	none	none
AD11 -	Scaffold		>200m	none	none

Tower	Nature of works	Assets within 50m	Distance to nearest asset	Potential impacts	Mitigation
AD12					
AD12	GI / foundation upgrade		190m	none	none
AD12 – AD13	240m underground cable	1 - Route crosses a substantial bank (Site 1) assoc. other field banks and house platforms in same field (PRNs 7560-1, 4694)	65m	Potential buried deposits and damage to Site 1	To be agreed with SNPA
AD13	1 - GI / foundation upgrade 2 - Winch	1 - Tower lies on a substantial bank (Site 1) assoc. other field banks and house platforms in same field (PRNs 7560-1, 4694)	0m	1 – damage to bank 2 – potential damage to field banks	Careful positioning of winch and use of Dura-base
AD13 - AD14	Scaffold	Field bank (Site 1)	40m	none	none
AD14	GI / foundation upgrade		200m	none	none
AD15	none		-	none	none
AD16	GI / foundation upgrade		>200m	none	none
AD16 - AD17	Scaffold		>200m	none	none
AD17	GI / foundation upgrade		>200m	none	none
AD18	GI / foundation upgrade		55m	none	none
AD19	GI / foundation upgrade		80m	none	none
AD20	GI / foundation upgrade		200m	none	none
AD21	GI / foundation upgrade		>200m	none	none
AD22	GI / foundation upgrade		>200m	none	none
AD23	GI / foundation upgrade	Hut circles PRN 514 Longhuts PRN 518	50m	potential impact during access	Avoid / demarcate
AD24	GI / foundation upgrade		>200m	none	none
AD25	GI / foundation upgrade	Low bank (Site 2) adj to tower, poss. assoc. with its construction or part of a field system	3m	Potential damage to bank	To be agreed with SNPA
AD26	GI / foundation upgrade	CN 131 Bronze Age cairn	0m	Potential buried deposits	SMC / archaeological excavation
AD27	GI / foundation upgrade	PRN 4702 enclosure	5m	Potential buried	To be agreed with SNPA

Tower	Nature of works	Assets within 50m	Distance to nearest asset	Potential impacts	Mitigation
				deposits	
AD28	GI / foundation upgrade	SAM CN129	110m	none	Use existing grassy track to access tower
AD29	GI / foundation upgrade		100m	none	none
AD30	GI / foundation upgrade		70m	none	none
AD30 - AD31	Scaffold		70m	none	none
AD31	GI / foundation upgrade		65m	none	none
AD31 - AD32	Scaffold		165m	none	none
AD32	GI / foundation upgrade		70m	none	none
AD33	GI / foundation upgrade	Access crosses holloway (Site 3) - former route of present track	90m	Removal of section of field wall for access	Care when crossing holloway. Rebuild wall in same style with original stones
AD33 – AD34	135m underground cable Scaffold		110m	none – area is very boggy	none
AD34	GI / foundation upgrade		200m	Poss. removal of section of field wall for access	Rebuild wall in same style with original stones
AD34 - AD35	Scaffold	Predicted line of Roman road follows present track	10m	none	none
AD35	GI / foundation upgrade	Predicted line of Roman road follows present track	10m	none	none
AD35 - AD36	Scaffold	Predicted line of Roman road follows present track	10m	none	none
AD36	GI / foundation upgrade	Predicted line of Roman road follows present track	20m	none	none
AD37	GI / foundation upgrade		105m	none	none
AD37 - AD38	Scaffold		130m	none	none
AD38	none		-	none	none
AD39	GI / foundation upgrade	Holloway (Site 4) at SH 69104 72160	62m	none	Careful access routing required
AD40	GI / foundation upgrade		60m	none	none
AD40 - AD41	Scaffold	Cairn PRN 380	15m	none	Demarcate Avoid use of stays near cairn
AD41	GI / foundation upgrade	PRN 5398 boundary bank	60m	none	Use existing break in bank during access
AD42	GI / foundation	PRN 7433 enclosure	40m	none	Use existing grassy

Tower	Nature of works	Assets within 50m	Distance to nearest asset	Potential impacts	Mitigation
	upgrade				track for access
AD43	GI / foundation upgrade		100m	none	Careful access routing, using existing farm track
AD43 - AD44	Scaffold	Longhut PRN 4088 Field system PRN 5474	10m	Potential damage to earthworks	Demarcate assets Avoid ground disturbance No placement of equipment or scaffold on assets
AD44	none		-	none	none
AD44 - AD45	Scaffold	Field systems PRN 5383	20m	Potential damage to earthworks	Demarcate assets Avoid ground disturbance No placement of equipment or scaffold on assets
AD45	none		-	none	none
AD46	1 - GI / foundation upgrade 2 - Winch	Field system / lynchets PRN 7150	0m	1- damage to lynchet 2 - Potential damage to earthworks	1 – to be agreed with SNPA 2 - use of Dura-base protection for access and winch, to be sited avoiding lynchets.
AD47	GI / foundation upgrade Tree clearance		200m	none	none
AD48	GI / foundation upgrade		90m	none	none
no towers AD49-50	-	-	-	-	-
AD51	none		-	none	none
AD51 – AD52	Emergency repairs	Field systems, huts	0m	Vehicular damage to upstanding features	Assess to area using Argocat only, following agreed access route Avoid positioning equipment between towers
AD52 – AD54	Access for emergency repairs	Hut circles PRNs 237-8		Vehicular damage to upstanding features	Access via NE field gate only (SH 65040 71230). No access along SW side of wall between gates
AD52	1 - Emergency repairs 2 - GI / foundation upgrade	CN 344-5 Bronze Age cairns PRN 7115 field system	20m	none	1 - Keep to existing track passing CN 344-5 2 - none
AD53	1 - Emergency repairs 2 - GI / foundation upgrade	CN 344-5 Bronze Age cairns	90m	none	Keep to existing track passing CN 344-5 2 - none
AD54	1 - Emergency repairs 2 - GI / foundation	Site 7 stone structure	45m	Vehicular damage to	1 - Access by ATV or on foot

Tower	Nature of works	Assets within 50m	Distance to nearest asset	Potential impacts	Mitigation
	upgrade			upstanding features	2 – use agreed access route taking care in area of asset
AD55	Emergency repairs	Sites 8-11 Sheepfolds and shelters	20m	Vehicular damage to upstanding features	Access by ATV or on foot
AD56	Emergency repairs		160m	None	none
AD57	Emergency repairs GI / foundation upgrade		100m	none	none
AD58	none		-	none	none
AD59	1 - GI / foundation upgrade 2 - Winch	PRN 20832 quarry	25m	none	1 – none 2 - use Dura-base
AD59 - AD60	Scaffold	PRN 20832 quarry	10m	none	none
AD60	none		-	none	none
AD61	none		-	none	none
AD62	none		-	none	none
AD63	GI / foundation upgrade		>200m	none	none
AD63 - AD64	Scaffold	House site (Site 5) on opposite side of road	30m	none	none
AD64	none		-	none	none
AD65	none			none	none
AD65 - AD66	Scaffold		180m	none	none
AD66	none			none	none
AD67	Crossing LV line		100m	none	none
AD67 – AD68	Scaffold		100m	none	none
AD68	Crossing LV line		100m	none	none
AD69	1 - GI / foundation upgrade 2 - Winch		180m	none	1 – none 2 - use Dura-base
AD70	none		-	none	None
AD71	none		-	none	none
AD72	GI / foundation upgrade		>200m	none	none
AD73	none		-	none	none
AD74	none		-	none	none
AD75	none		-	none	none
AD76	none		-	none	none
AD77	GI / foundation upgrade		165m	none	none
AD78	none		-	none	none
AD79	none		-	none	none

Tower	Nature of works	Assets within 50m	Distance to nearest asset	Potential impacts	Mitigation
AD80	GI / foundation upgrade		>200m	none	none
AD81	none		-	none	none
AD82	none		-	none	none
AD83	none		-	none	none
AD84	GI / foundation upgrade		>200m	none	none
AD85	GI / foundation upgrade		100m	none	none
AD86	none		-	none	none
AD87	GI / foundation upgrade		60m	none	none
AD88	GI / foundation upgrade		>200m	none	none
AD89	none		-	none	none
AD90	1 - GI / foundation upgrade 2 - Underground cable to substation		55m	1 – none 2 - Potential buried deposits	1 – none 2 - watching brief

7 Detailed Mitigation Measures and Consents

Introduction

7.1 A number of cultural heritage assets have been identified which could be subject to direct impacts during the implementation of the scheme.

7.2 The mitigation strategy outlined below has been developed through discussions with Cadw, the Snowdonia National Park Authority, the National Trust and Gwynedd Archaeology Planning Service.

Mitigation strategy

7.3 Cultural heritage assets represent a non-renewable resource, and should be avoided wherever this is feasible in order to avoid damage or destruction. The purpose of mitigation is to avoid or reduce any adverse impacts that might result from the proposed scheme on the cultural heritage resource. The main strategy for minimising impacts from the scheme is avoidance, through careful planning, design and demarcation of sensitive assets. The various stages of the scheme have been designed around the basic premise of the preservation in situ all cultural heritage assets. The location and known extent of assets have been taken into account in planning access routes, locating ground investigations and positioning equipment and materials storage. However, potential impacts remain for a number a number of assets where proactive mitigation will be required during the implementation phases of the scheme, which are detailed in Tables 2-9.

7.4 The client will be provided with digital data identifying the location of all cultural heritage assets which should be included on all constraints mapping for the project and be used during the development of the project design.

7.5 Further cultural heritage input will be required during the design phase to ensure the effectiveness of the mitigation strategy and determine any further requirements for assessment or mitigation which may be appropriate.

7.6 Tables 2-9 provide detailed mitigation options for designated and undesignated assets for which there may be a direct impact from the proposed refurbishment works.

7.7 There are no predicted impacts for listed buildings and no mitigation is proposed.

General Mitigation Measures and Consents for Scheduled Ancient Monuments

7.8 The recommended mitigation is the avoidance of all scheduled areas through careful planning of the works programme, but specifically:

- Scheduled monument consent will be required for all ground investigation works and any subsequent remedial works within the scheduled area for CN 131
- No vehicular access within or across a scheduled area without prior consent. However, existing trackways which can be used for access cross the scheduled areas for CN 344, CN 345, CN 129 and CN 131 and it has been acknowledged by Cadw that access can be permitted across the scheduled areas provided that all vehicles adhere strictly to these tracks.
- No positioning or operation of machinery within a scheduled area without prior consent from Cadw
- No storage of equipment or materials within a scheduled area without prior consent from Cadw
- Appropriate demarcation of scheduled areas. To be conducted under the supervision of an archaeologist prior to the commencement of works
- An archaeologist to be present during initial access to areas containing scheduled ancient monuments to ensure awareness and avoidance
- An archaeologist should conduct monitoring visits during any operations within the vicinity of a scheduled area to ensure the effectiveness of the mitigation strategy
- All contractors to be made aware of the protected status of the monuments and the legal restrictions that this status imposes.
- Cadw to be provided with a method statement in advance of the works commencing
- Cadw to be provided with a timetable to facilitate monitoring

7.9 *Consents* Scheduled monument consent will be required for all ground investigation works and any subsequent remedial works within the scheduled area for CN 131. Any changes to the work programme must address potential impacts on scheduled areas and should be discussed with Cadw at the earliest opportunity.

Table 2: General Mitigation Measures for Scheduled Ancient Monuments

SAM No	Name	Type of impact	Mitigation
CN129	Bwlch y Ddeufaen Standing Stones	vehicle	avoid/demarcate
CN130	Cerrig Pryfaid Stone Circle	vehicle	avoid
CN131	Barclodiad-y-Gawres Round Cairn	Ground investigations / foundation upgrade	Scheduled Monument Consent Prior archaeological investigation / avoid / demarcate / watching brief

CN245	Hut Circle Settlement on Caer Mynydd	vehicle	avoid/demarcate
CN286	Hut Circle and Rectangular Hut, N of Wern y Pandy	none	none
CN341	Cairn to NNW of Yr Orsedd	none	none
CN342	Cairn to NE of Foel Dduarth	none	none
CN344	Cairn to N of Cras	vehicle	avoid/demarcate
CN345	Ring cairn to N of Cras	vehicle	avoid/demarcate
CN346	Cras cairn	none	avoid
CN402	Roman Road N of Llannerch Fedw	none	avoid

General Mitigation Measures and Consents for Undesignated Assets

7.10 The recommended mitigation is avoidance through the careful planning of the works programme and specifically:

- Ensure all assets are included on project access maps
- No vehicular access across an asset
- No positioning or operation of machinery within the immediate area of an asset
- No storage of equipment or materials within the immediate area of an asset
- Demarcation where appropriate to ensure avoidance. To be conducted under the supervision of an archaeologist prior to the commencement of works
- An archaeologist must be present should access or works be unavoidable within any of the identified areas of archaeological sensitivity defined on the accompanying mapping to ensure the awareness and avoidance of assets.
- An archaeologist must be present should access or works be unavoidable within any of the identified areas of archaeological sensitivity defined on the accompanying mapping to ensure the awareness and avoidance of assets.
- A watching brief should be maintained during soil stripping activities along any wayleave and / or during the excavation of the trenches for underground cables as appropriate.
- Sufficient time and resources must be made available to ensure the preservation by record of any archaeological features or deposits which are revealed during the watching brief.

7.11 *Consents* No formal consents are required, although the Snowdonia National Park Archaeologist, the National Trust Archaeologist, and the Gwynedd Archaeological Planning Service should be provided with a method statement and kept informed of the work programme for the relevant sections of the powerline.

Operation-specific Mitigation Measures

General access

7.12 The line of the Roman road between Caerhun and Caernarfon, which is crossed by the powerline a number of times and in some cases is assumed to have been adopted by a present-day trackway, between SH 7208 7155 and SH 7099 7197, and SH 7029 7206 and SH 6958 7227, will be used to gain access to the powerline. There are proposals to improve the existing track by the infilling of potholes and ruts with locally sourced, imported stone. Any requirements for additional improvements will require a further stage of assessment and appropriate mitigation.

7.13 All access routes have been checked during the field survey and, where appropriate, modified to avoid all assets. A number of assets lie in close proximity to access routes and demarcation has been recommended where appropriate to ensure avoidance.

Table 3: Potential impacts and mitigation during access to towers

Tower	PRN	Asset type	Mitigation
AD23	514 518	Hut circles Longhuts	Avoid / demarcate
AD26		SAM CN131	Use existing track through scheduled area
AD28		SAM CN129	Use existing grassy track to access tower
AD29 onwards		SAM CN129	Use existing track through scheduled area
AD33	Site 3	Holloway – former route of present track Field wall	Care when crossing holloway Rebuild wall in same style with original stones
AD34		Field wall	Rebuild wall in same style with original stones Any access by
AD39	389	Burnt mound Holloway at SH 69104 72160	Avoid / demarcate Care if crossing holloway
AD41	5398	Boundary bank	Use existing break in bank
AD42	7433	Enclosure	Use existing grassy track alongside enclosure
AD43		Access through very sensitive area of field system, burial cairns and huts	Use existing farm track through sensitive area with careful routing of access beyond
AD48-51	34713	Access through very sensitive area of field system and huts including SAM CN245	Access with Argocat only using agreed access route avoiding CN245
AD52-53		SAM CN344 and CN345	Use existing track through scheduled area and demarcate cairns to ensure avoidance
AD54	Site 7	Stone structure	Use agreed access route; care to be taken in area of asset

Cable restringing

7.14 The retensioning equipment is to be placed adjacent to towers AD13, AD46, AD59, AD69, and possibly AD57. In two instances, at AD13 and AD46, these lie within archaeologically sensitive areas and advice has been provided on the appropriate siting of equipment to avoid damage to upstanding earthworks. Each winch position, and the access to it, will be protected using a Dura-base Matting System and no ground disturbance is anticipated,.

7.15 Access will be required to each tower during the restringing, although no ground disturbance is predicted and provided agreed access routes are adhered to all known assets will be avoided. Other than at winch positions access will be by Argocat only.

Table 4: Potential Impacts and mitigation during cable restringing

Tower	PRN	Asset type	Mitigation
AD13	Site 1	Field system associated with longhuts	Careful siting of equipment and use of Dura-base matting for winch point and access route

AD46	7150	Field system / lynchets PRN 7150	Careful siting of equipment and use of Dura-base matting for winch point and access route

Scaffolding

7.16 Scaffolding will be erected to protect a number of road crossings during the restringing works. The scaffold sole pads are usually sited directly on the ground with no ground disturbance necessary, although on sloping ground, a level footing is required and limited ground disturbance is possible. Field visits to each location have determined that there are potential impacts for those assets listed in Table 5.

Table 5: Potential impacts and mitigation during scaffolding

Tower	PRN	Asset type	Mitigation
AD34-35		Projected line of Roman road follows existing track	Avoid ground disturbance
AD35-36		Projected line of Roman road follows existing track	Avoid ground disturbance
AD40-41	380	Burial cairn	Avoid use of stays near asset
AD43-44	4088 5474	Long hut Field system	Demarcate / avoid
AD44-45	5383	Field system	Demarcate / avoid

Lower voltage diversions

7.17 A number of lower voltage cables will be relocated as part of the overall restringing process, involving the erection of new wooden poles and the installation of low voltage underground cables. While there are no predicted impacts for known assets there is the potential for disturbance to unrecorded, buried deposits.

7.18 *Mitigation* The following mitigation is recommended for four of the diversions, while that for AD12-13 is to be determined following discussions with SNPA.

- A watching brief should be maintained during soil stripping activities along any wayleave and / or during the excavation of the cable trench, as appropriate.
- Sufficient time and resources must be made available to ensure the preservation by record of any archaeological features or deposits which are revealed during the watching brief.

Table 6: Potential impacts and mitigation during lower voltage diversions

Tower	PRN	Asset type	Mitigation
AD3-4		Potential buried deposits	Watching brief
AD7-8		Potential buried deposits	Watching brief
AD10-11		Potential buried deposits	Watching brief
AD12-13	Site 1	Potential buried deposits and section through field bank	To be agreed with SNPA

Foundation investigations and reinforcements

7.19 Ground investigations are planned for 56 towers, involving ground disturbance which could extend for up to 2m from each foundation. Excavations will be undertaken using a 3 or 6 ton, tracked, mechanical excavator and a small, tracked, dumper, and may be followed by

foundation upgrades where required. Stays may also be required on some of the corner towers, involving the placement of ground anchors up to 30m from the towers.

7.20 General access to the area will be by tractor and trailer, using existing tracks. Although there is the potential for impacts during access from the track and the tower access routes have all been checked during the field survey and where appropriate assets will be demarcated to ensure avoidance.

Table 7: Potential impacts and mitigation during foundation investigations and reinforcements

Tower	PRN	Asset type	Mitigation
AD13	Site 1	Bank / field system	To be agreed with SNPA
AD25	Site 2	Bank / field system	To be agreed with SNPA
AD26	SAM CN131	Burial cairns	Scheduled Monument Consent Archaeological excavation Watching brief
AD27	4702	Enclosure	Avoid / demarcate To be agreed with SNPA
	7115	Enclosure	Avoid / demarcate Watching brief

Underground connection at Pentir

7.21 Installation of a *c*. 500m-long underground cable from the westernmost tower (AD90) to the substation, the route of which lies adjacent to the existing underground cable. The only undesignated asset close to the proposed route is an artificial rabbit warren, also known as a pillow mound (PRN 20), but this lies in an adjacent field and should therefore be unaffected. It had previously been thought that the line of a Roman road (PRN 17566) may have been in relatively close proximity to the route, although evidence now indicates that the road lies further to the east (PRN 17834) and will be unaffected by the proposals.

7.22 *Mitigation* At the time of writing the construction method for the underground cable has yet to be determined. The following mitigation is therefore provisional and should be reviewed once details of the scheme are available.

- The pillow mound (PRN 20) should be clearly demarcated if any activity is planned in the field where it lies.
- A watching brief should be maintained during soil stripping activities along any wayleave and / or during the excavation of the cable trench as appropriate.
- Sufficient time and resources must be made available to ensure the preservation by record of any archaeological features or deposits which are revealed during the watching brief.

Table 8: Potential impacts and mitigation during underground connection at Pentir

Tower	PRN	Asset type	Mitigation
AD90	20	Pillow mound	Avoid
		Potential buried deposits	Watching brief during soil strip / trench excavation

Site compound

7.23 No site compounds will be placed along the route and no mitigation is therefore required.

Steelwork upgrades

7.24 The upgrade of steelworks will not involve any ground disturbance and the only potential for impacts is in relation to access, mitigation for which is presented above.

Tree and vegetation clearance

7.25 No potential impacts have been identified and no mitigation is therefore required.

Emergency Repairs

7.26 A programme of emergency repairs is required to restore the damaged section between towers AD52 and AD57. Field survey in advance of the works has revealed a number of previously unrecorded assets, for which mitigation is recommended below.

Table 9 Potential impacts and mitigation for Emergency Repairs

Tower	PRN	Asset type	Mitigation
AD52	CN344-5	Burial cairns	Keep to existing track during access
AD53	CN344-5	Burial cairns	Keep to existing track during access
AD54	Site 7	Stone structure	Access by ATV or on foot
AD55	Sites 8-11	Sheepfolds and shelters	Access by ATV or on foot
AD52-54	237-8	Hut circles	Access via NE field gate only (SH 65040 71230). No access alongside wall between gates

8 References

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Appendix 1
Scheduled Ancient Monuments within 200m of the Overhead Line

SAM No	Name	Type	NGR (centre)
CN129	Bwlch y Ddeufaen Standing Stones	Standing stone	SH714718
CN130	Cerrig Pryfaid Stone Circle	Stone circle	SH724713
CN131	Barclodiad-y-Gawres Round Cairn	Round cairn	SH717716
CN245	Hut Circle Settlement on Caer Mynydd	Hut circle settlement	SH657713
CN286	Hut Circle and Rectangular Hut North of Wern y Pandy	Unenclosed hut circle	SH675718
CN341	Cairn to NNW of Yr Orsedd	Round cairn	SH690721
CN342	Cairn to NE of Foel Dduarth	Round cairn	SH683720
CN344	Cairn to N of Cras	Round cairn	SH653712
CN345	Ring cairn to N of Cras	Ring cairn	SH654712
CN346	Cras cairn	Round cairn	SH653708
CN402	Roman Road N of Llannerch Fedw	Roman road	SH706720

Appendix 2
Listed Buildings within 200m of the Overhead Line

LB No	Name	LB Grade	NGR
3160	Ffynnon-Bedr Cottage	II	SH7631269013
3209	Barn at Ffynnon-Bedr	II	SH7628468968
3210	Tyddyn-y-Coed Farmhouse	II	SH7598869189
3653	Cochwillan	I	SH6069569416
17015	Stable and Cart Range at Ffynnon-Bedr	II	SH7628868993
17020	Former Farmhouse at Gwern Felin	II	SH7650668696
17021	Agricultural Range at Gwern Felin	II	SH7649068699
18919	Railway bridge at Coed Howel	II	SH5862869305
18922	Fferm Glasynfryn	II	SH5838969158
18923	Bryn-y-meddyg	II	SH5866269278
22928	Plas-uchaf	II	SH6208969897
22946	Tyddyn-isaf & Tyddyn-isaf bach	II	SH6140769626
22948	Cart Shelter and Pigsties at Plas-uchaf	II	SH6209569913
22949	L-shaped Cowhouse Range at Plas-uchaf	II	SH6210769903
22950	Small Cowhouse Range at Plas-uchaf	II	SH6212369909
22958	Outbuildings at Cochwillan	II	SH6067569404
22959	Bwthyn Cochwillan	II	SH6066569442
22960	Pigsties at Bwthyn Cochwillan	II	SH6068769437
22961	Slate Fencing at Bwthyn Cochwillan	II	SH6066969463
22962	Fferm Cochwillan	II	SH6064369465
22963	Cowhouses/Cart Shelter at Fferm Cochwillan	II	SH6067169492
22964	Pigsties/Pig Kitchen at Fferm Cochwillan	II	SH6064069488
23384	Penrhyn Estate workers'cottage	II	SH6006069766
23385	Penrhyn Estate workers'cottage	II	SH6007769741
23471	Penrhyn Estate workers'cottage	II	SH6008069732

Appendix 3
Gazetteer of undesignated assets within 200m of the Overhead Line

NPRN	PRN	Type	Period	NGR	Value
6769		Chapel	Post-medieval	SH7550769860	medium
6771		Chapel	Post-medieval	SH76876839	medium
11977		Chapel	Post-medieval	SH75516987	medium
15056		Sheep Fold	Post-medieval	SH74597004	low
16801		Dwelling	Post-medieval?	SH59396981	low
17043		House	Post-medieval?	SH74037065	medium
23807		Bridge	Post-medieval?	SH76956760	medium
23818		Bridge	Post-medieval?	SH76696867	medium
26736		House	Post-medieval?	SH75486988	medium
85420		Hydro Electric Power Station	Modern	SH76996759	medium
93572		Standing Stone	Prehistoric	SH724713	medium
275575		Sheep Shelter	Post-medieval	SH70777216	low
275581		Shelter	Post-medieval	SH69777212	low
275582		Sheep Fold	Post-medieval	SH69717218	low
275583		Shelter	Post-medieval	SH69697216	low
278534		Boundary Bank	Unknown	SH68537231	medium
278545		Hut Platform	Medieval	SH68487215	medium
278546		Long Hut	Medieval	SH68347230	medium
278547		Burnt Mound	Bronze Age	SH68037233	medium
278644		Cairn	Unknown	SH71467169	medium
278645		Sheep Shelter	Post-medieval	SH71437167	low
278649		Earthwork	Unknown	SH73407076	low
278667		Barn	Post-medieval	SH73677039	low
	20	Pillow Mound	Unknown	SH5635068180	medium
	21	Hut Circle	Prehistoric	SH5809069470	medium
	26	Enclosure	Unknown	SH5973069600	medium
	57	Enclosure	Unknown	SH5720069350	medium
	68	Hut Circle	Unknown	SH6421070700	medium
	71	Long Hut	Unknown	SH6428070650	medium
	72	Long Hut	Unknown	SH6432070800	medium
	73	Boundary Marker	Unknown	SH6495070750	low
	233	Hut Circle Settlement	Medieval	SH6580071380	medium
	235	Hut Circle	Roman	SH6571571360	medium
	237	Hut Circle	Roman	SH65037119	medium
	238	Hut Circle	Roman	SH65037118	medium
	338	Hut Circle	Unknown	SH6695071620	medium
	340	Hut Circle	Roman	SH6645071400	medium
	355	Cairn	Bronze Age	SH6742071630	high
	356	Cairn	Bronze Age	SH6739071660	high
	362	Cairn	Unknown	SH6764072050	medium
	365	Incised Stone	Medieval	SH6801272067	medium
	380	Cairn	Bronze Age	SH6859072210	high
	383	Incised Stone	Roman	SH6936072310	medium
	384	Incised Stone	Prehistoric	SH6937072280	medium
	385	Incised Stone	Prehistoric	SH6923072380	medium
	389	Burnt Mound	Bronze Age	SH6886072170	medium

NPRN	PRN	Type	Period	NGR	Value
	390	Burnt Mound	Bronze Age	SH6894072320	medium
	391	Burnt Mound	Bronze Age	SH6957072430	medium
	463	Cairn	Bronze Age	SH7089071980	high
	483	Cairn	Bronze Age	SH7055072010	high
	514	Hut Circle Settlement	Roman	SH7244071210	high
	515	Hut Circle Settlement	Unknown	SH7163071810	high
	516	Long Hut	Unknown	SH7168071710	medium
	518	Long Hut	Unknown	SH7240071190	medium
	675	Well	Unknown	SH7629069140	medium
	812	Trackway	Unknown	SH5940069650	low
	815	Burnt Mound	Unknown	SH5978069780	medium
	1544	Chambered Tomb	Prehistoric	SH7703067770	medium
	3667	Hut Circle Settlement	Unknown	SH6245069850	medium
	3673	Findspot	Prehistoric	SH6060069400	negligible
	3857	Trackway	Prehistoric	SH6878072150	medium
	4088	Long Hut	Medieval	SH6776072010	medium
	4095	Cairn	Bronze Age	SH6803072020	high
	4608	Findspot	Unknown	SH7600069000	negligible
	4609	Mine	Roman	SH7608068820	medium
	4611	House	Medieval	SH7628068980	medium
	4612	House	Medieval	SH7628068960	medium
	4613	House	Medieval	SH7626068960	medium
	4615	Findspot	Prehistoric	SH7700067700	negligible
	4688	Milestone	Roman	SH7198071550	negligible
	4694	House Platform	Medieval	SH7473070260	medium
	4702	Enclosure	Early Medieval	SH7160071770	medium
	4703	Long Hut	Early Medieval	SH7166071700	medium
	4704	Findspot	Prehistoric	SH7200071500	negligible
	5077	Stone Circle	Prehistoric	SH7153071750	high
	5386	Terraced Ground	Unknown	SH6760071700	low
	5387	Trackway	Unknown	SH6764071760	low
	5388	Scoop	Unknown	SH6764071820	negligible
	5389	Bank (Earthwork)	Unknown	SH6763071900	medium
	5390	Bank (Earthwork)	Unknown	SH6763071980	low
	5391	Clearance Cairn	Unknown	SH6767072000	low
	5392	Terraced Ground	Unknown	SH6770072040	low
	5393	Hut Circle	Prehistoric	SH6774072050	medium
	5394	Clearance Cairn	Unknown	SH6789372013	low
	5395	Structure	Unknown	SH6802072040	low
	5396	Structure	Unknown	SH6804072070	low
	5397	Burnt Mound	Bronze Age	SH6805072120	medium
	5398	Bank (Earthwork)	Unknown	SH6836072180	low
	5399	Bank (Earthwork)	Unknown	SH6851772191	low
	5400	Platform	Medieval	SH6865072180	medium
	5401	Boulder	Unknown	SH6869072230	low
	5402	Burnt Mound	Prehistoric	SH6883072170	medium
	5403	Long Hut	Medieval	SH6885072110	medium
	5410	Bank (Earthwork)	Unknown	SH6935072350	low
	5474	Field System	Unknown	SH6766072000	medium
	7058	Long Hut	Medieval	SH6869072330	medium

NPRN	PRN	Type	Period	NGR	Value
	7107	Hut Circle	Prehistoric	SH6586071510	medium
	7108	Enclosure	Unknown	SH6580071400	medium
	7111	Hut Circle	Prehistoric	SH6593071440	medium
	7112	Platform	Medieval	SH6590071400	medium
	7113	Field System	Unknown	SH6560071300	medium
	7114	Hut Circle	Prehistoric	SH6572071290	medium
	7115	Enclosure	Unknown	SH6569071240	medium
	7118	Hut Circle Settlement	Prehistoric	SH6596071220	medium
	7119	Hut Circle	Prehistoric	SH6601071530	medium
	7120	Hut Circle	Prehistoric	SH6602071290	medium
	7121	Enclosure	Unknown	SH6598071150	medium
	7122	Enclosure	Unknown	SH6608071250	medium
	7144	Hut Circle	Prehistoric	SH6758072010	medium
	7146	Hut Circle	Prehistoric	SH6751071920	medium
	7148	Enclosure	Unknown	SH6739071830	medium
	7150	Field System	Unknown	SH6750071670	medium
	7433	Enclosure	Unknown	SH6812072140	low
	7453	Enclosure	Unknown	SH6827072380	medium
	7560	Deserted Rural Settlement	Medieval	SH7490070250	medium
	7561	Deserted Rural Settlement	Medieval	SH7494070100	medium
	7565	Hut Platform	Medieval	SH6866072180	medium
	7566	Deserted Rural Settlement	Medieval	SH7234071290	medium
	7567	Deserted Rural Settlement	Medieval	SH7192071360	medium
	7568	Deserted Rural Settlement	Medieval	SH7336070920	medium
	7569	Deserted Rural Settlement	Medieval	SH7340070900	medium
	8900	Sheep Fold	Post-medieval	SH66947166	low
	11746	Hut Circle	Prehistoric	SH6585071500	medium
	12859	Bank (Earthwork)	Post-medieval	SH6645071480	low
	12966	Farmhouse	Post-medieval	SH7692067750	low
	15860	Landscape	Multi-Period	SH6630071300	medium
	17571	Road	Roman	SH6943072360	medium
	17572	Road	Roman	SH6973072280	medium
	17573	Road	Roman	SH7038072050	medium
	17574	Road	Roman	SH7072072010	medium
	17575	Road	Roman	SH7112071910	medium
	17576	Road	Roman	SH7157071740	medium
	17577	Road	Roman	SH7198071550	medium
	17588	Road	Roman	SH6877072410	medium
	20046	Slate Quarry	Post-medieval	SH6110069600	negligible
	20049	Slate Quarry	Post-medieval	SH6450070800	low
	20142	Slate Quarry	Post-medieval	SH7570069300	low
	20832	Quarry	Post-medieval	SH6400070500	negligible
	20839	Quarry	Post-medieval	SH6740072000	negligible
	29444	Arrow Sharpening Stone	Prehistoric	SH6642171350	negligible
	29519	Feature	Unknown	SH6737071660	medium

NPRN	PRN	Type	Period	NGR	Value
	29520	Hut Circle Settlement	Prehistoric	SH6755071800	medium
	29526	Long Hut	Medieval	SH6765071770	medium
	29528	Hut Circle	Prehistoric	SH6767072030	medium
	33959	Building	Post-medieval	SH6722471721	low
	34713	Field System	Medieval	SH65817150	medium
	34714	Field System	Medieval	SH67507183	medium
	33961	Sheepfold	Post-medieval	SH6531771151	low
	33951	Building	Post-medieval	SH7363170640	medium
	34016	Field System	Medieval	SH6399270447	medium
	34017	Field System	Medieval	SH6586171267	medium
	33941	Sheepfold	Post-medieval	SH7626068923	negligible
	33964	Quarry	Post-medieval	SH6324170216	negligible
	33957	Sheepfold	Post-medieval	SH7027372176	low
	33958	Building	Post-medieval	SH6724071719	low
	34712	Hut platform	Medieval	SH6592271592	medium
	33942	Building	Post-medieval	SH7596069404	low
	33943	Building	Post-medieval	SH7596969438	low
	33944	Building	Post-medieval	SH7596969523	low
	33945	Building	Post-medieval	SH7572669622	low
	33946	Building	Post-medieval	SH7571969687	low
	33948	Building	Post-medieval	SH7560869735	low
	33949	Building	Post-medieval	SH7562369741	low
	33956	Sheepfold	Post-medieval	SH7121672101	low
	33960	Building	Post-medieval	SH6720471653	low
	33962	Sheepfold	Post-medieval	SH6471370882	low
	33963	Sheepfold	Post-medieval	SH6375970338	low
	33965	Building	Post-medieval	SH6158069713	low
	33966	Leat	Post-medieval	SH6024269744	low
	33968	Railway	Post-medieval	SH5868769495	low
	33969	Railway	Post-medieval	SH5857069497	low
	33970	Stone	Post-medieval	SH5691968964	low
	33947	Building	Post-medieval	SH7558869680	medium
	33950	Building	Post-medieval	SH7545469694	medium
	33952	Sheepfold	Post-medieval	SH7359470763	negligible
	33953	Sheepfold	Post-medieval	SH7321870582	negligible
	33954	Sheepfold	Post-medieval	SH7311370626	negligible
	33955	Sheepfold	Post-medieval	SH7161271999	negligible
	33967	Quarry	Post-medieval	SH5904169589	negligible
	Site 1	Field system	Medieval ?	SH74837010	medium
	Site 2	Field system ?	Medieval ?	SH71927142	low
	Site 3	Holloway	Post-medieval	SH70177214	low
	Site 4	Holloway	Post-medieval	SH69057218	low
	Site 5	Longhouse	Medieval ?	SH62736999	medium
	Site 6	Hut	Medieval ?	SH6527671136	medium
	Site 7	Structure	Post-medieval	SH6525971007	low
	Site 8	Shelter	Post-medieval	SH6508270995	low
	Site 9	Sheepfold	Post-medieval	SH6506470977	low
	Site 10	Sheepfold	Post-medieval	SH6503070945	low
	Site 11	Shelter	Post-medieval	SH6504570969	low

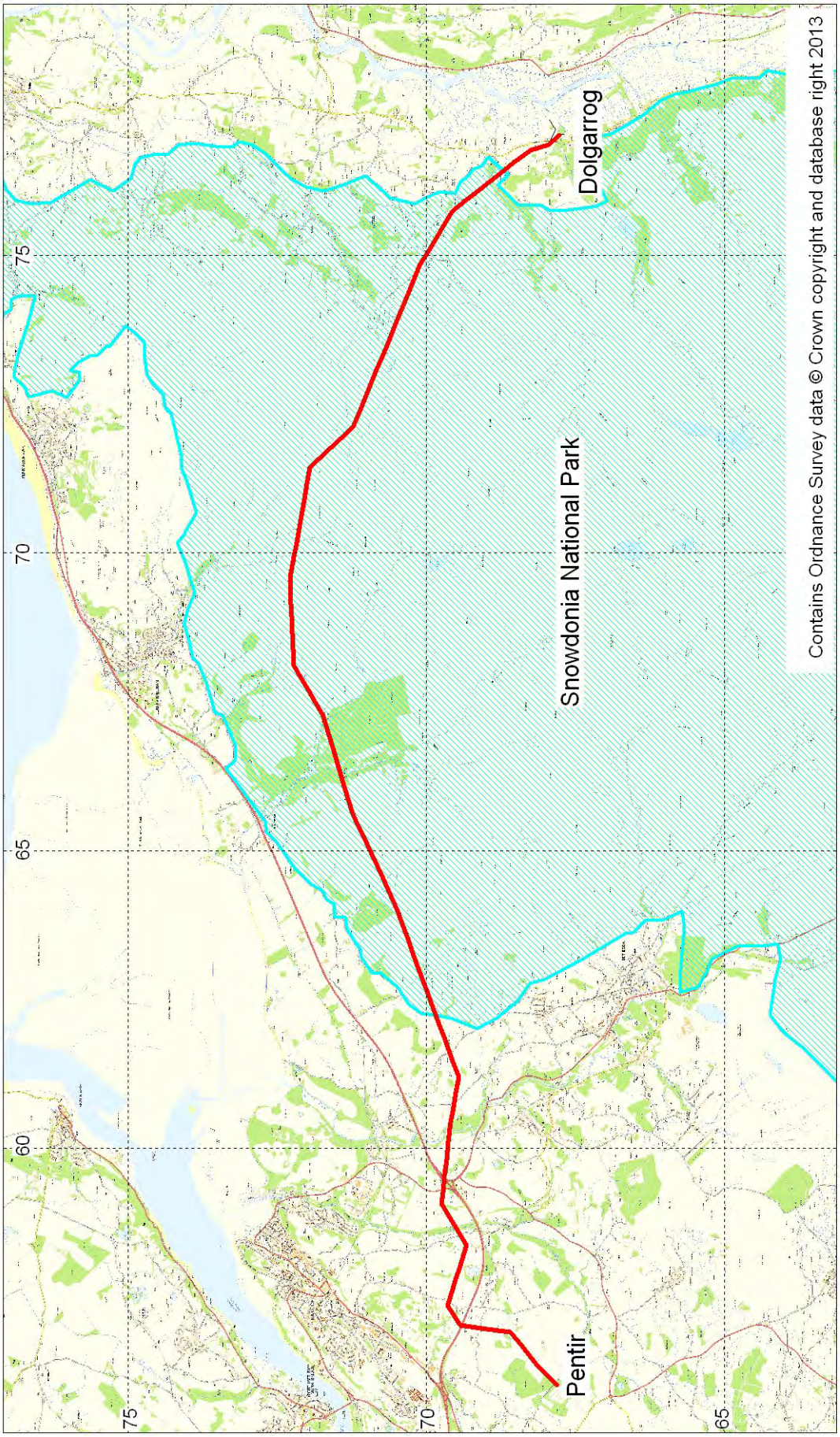

Fig. 1 The overall route of the AD line

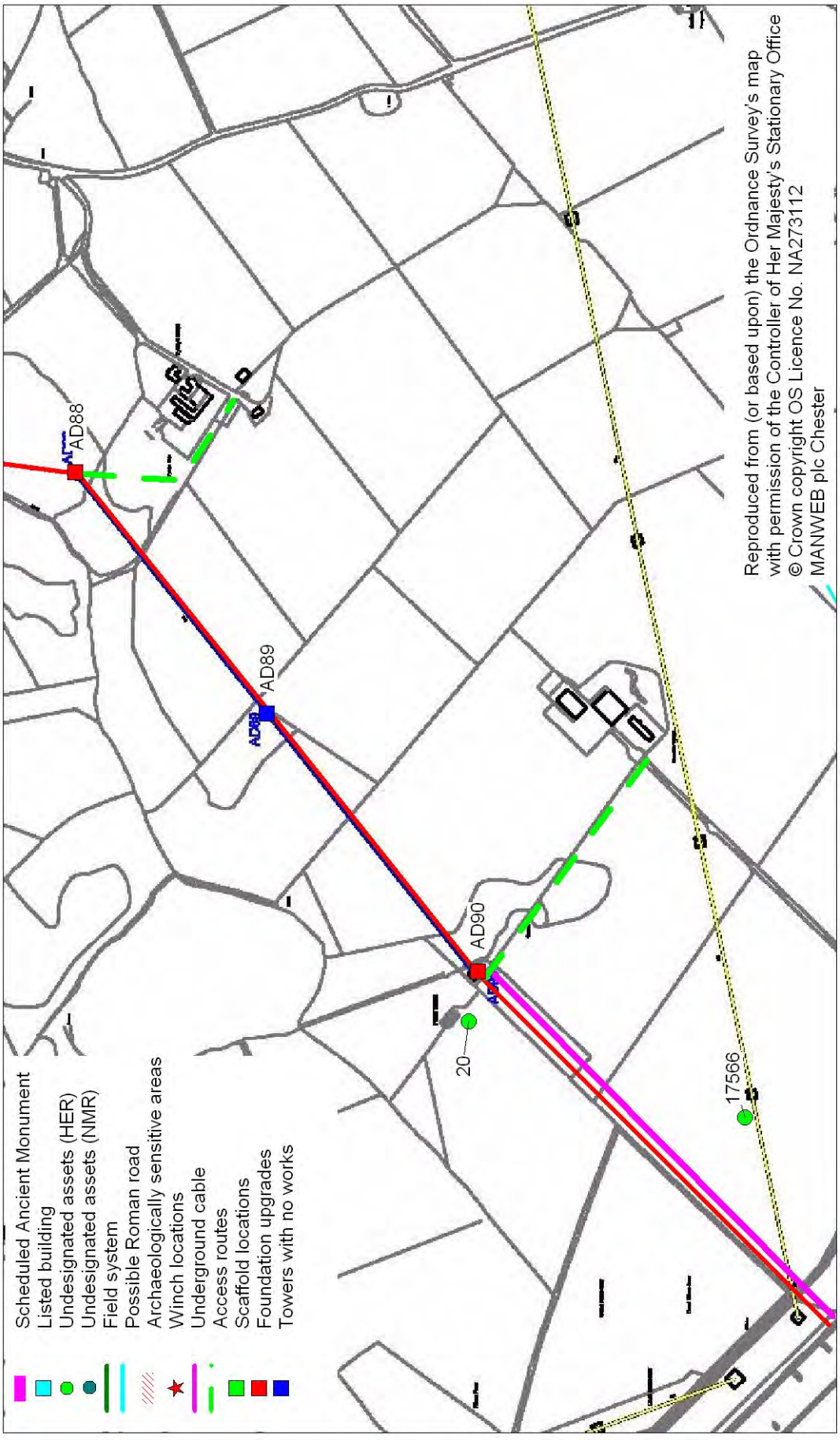

Fig. 2 Designated and non-designated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

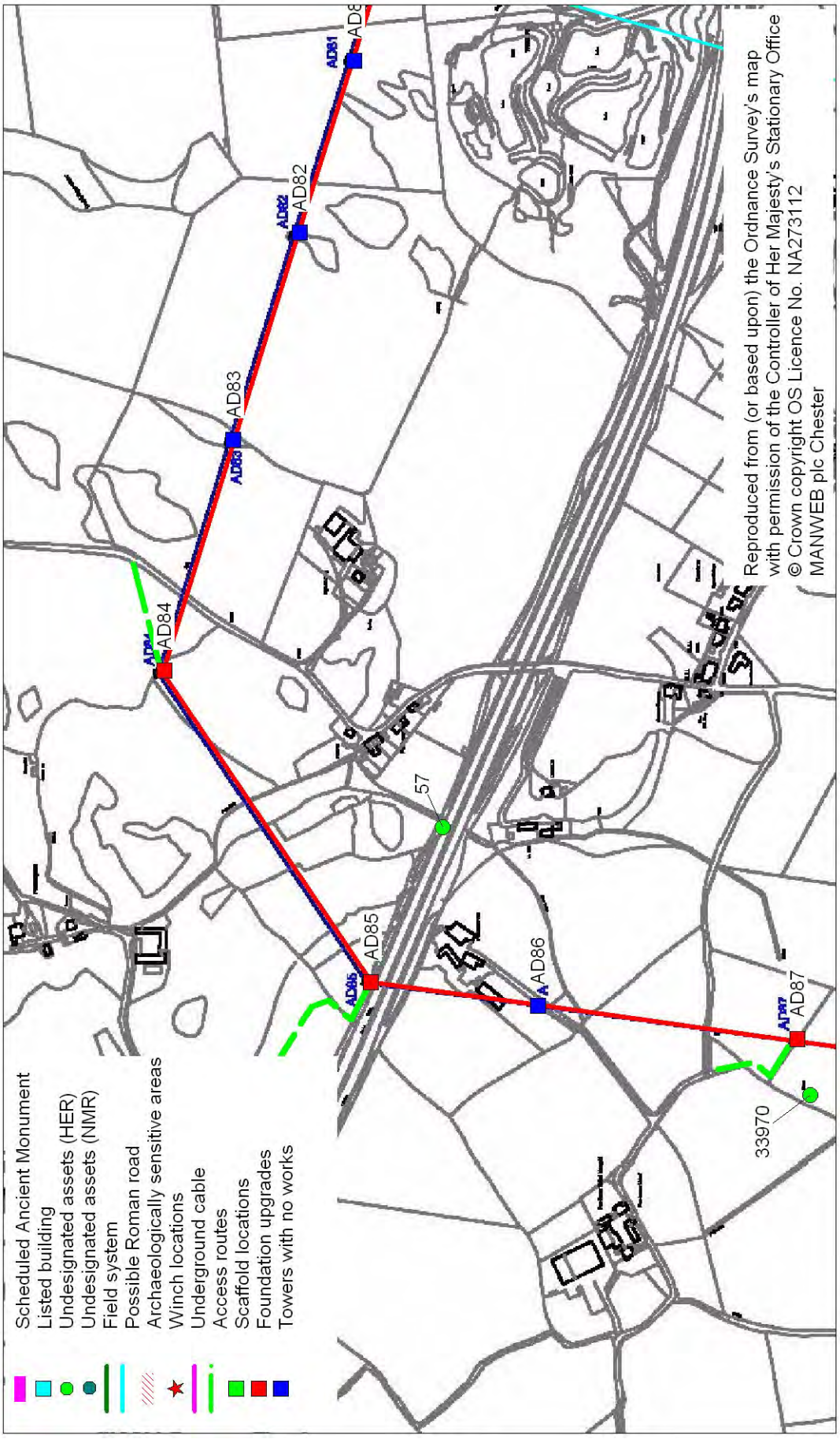

Fig. 3 Designated and non-designated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

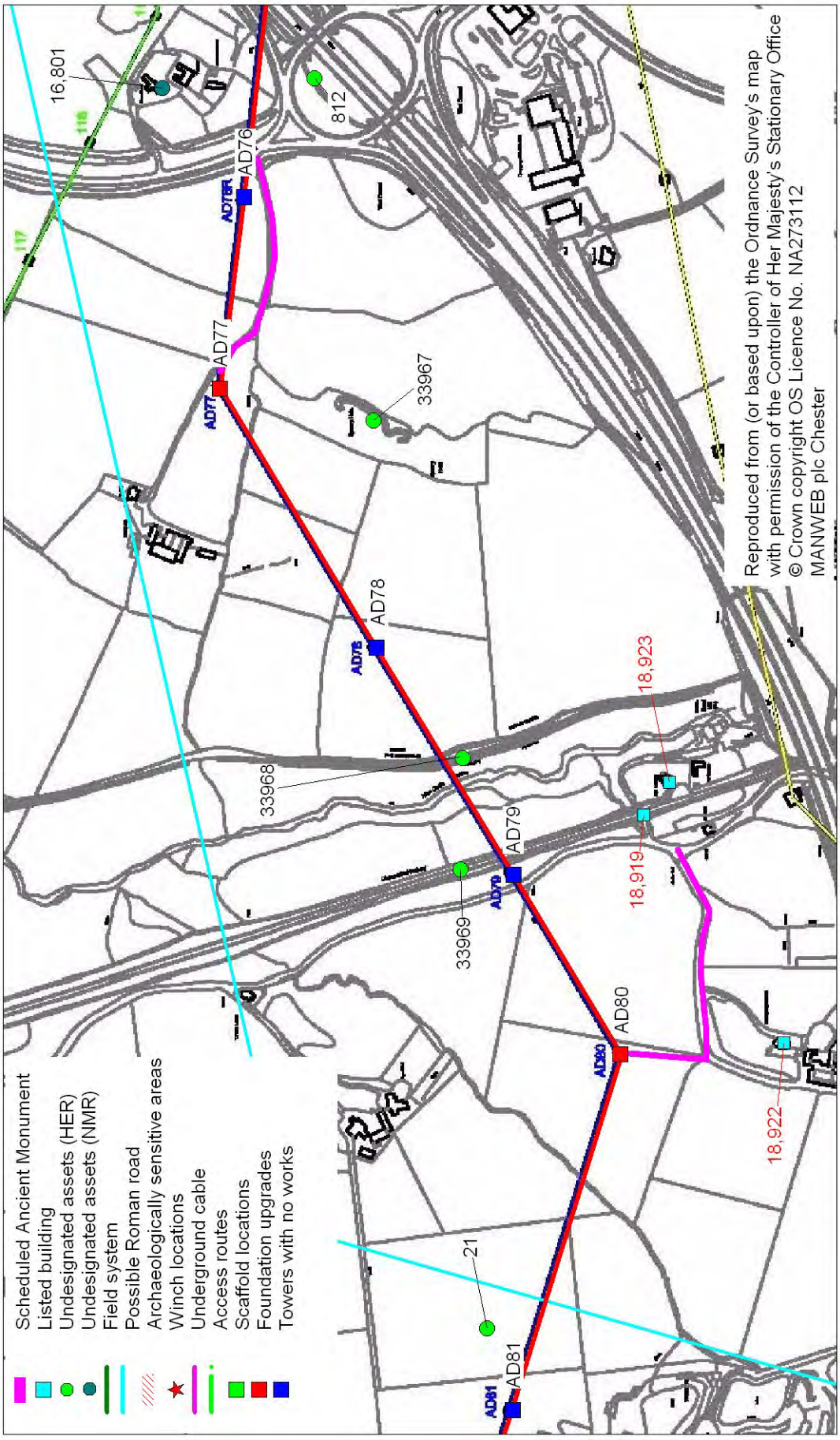

Fig. 4 Designated and undesignated cultural heritage assets, scale 1: 6,250 (overhead line shown in red)

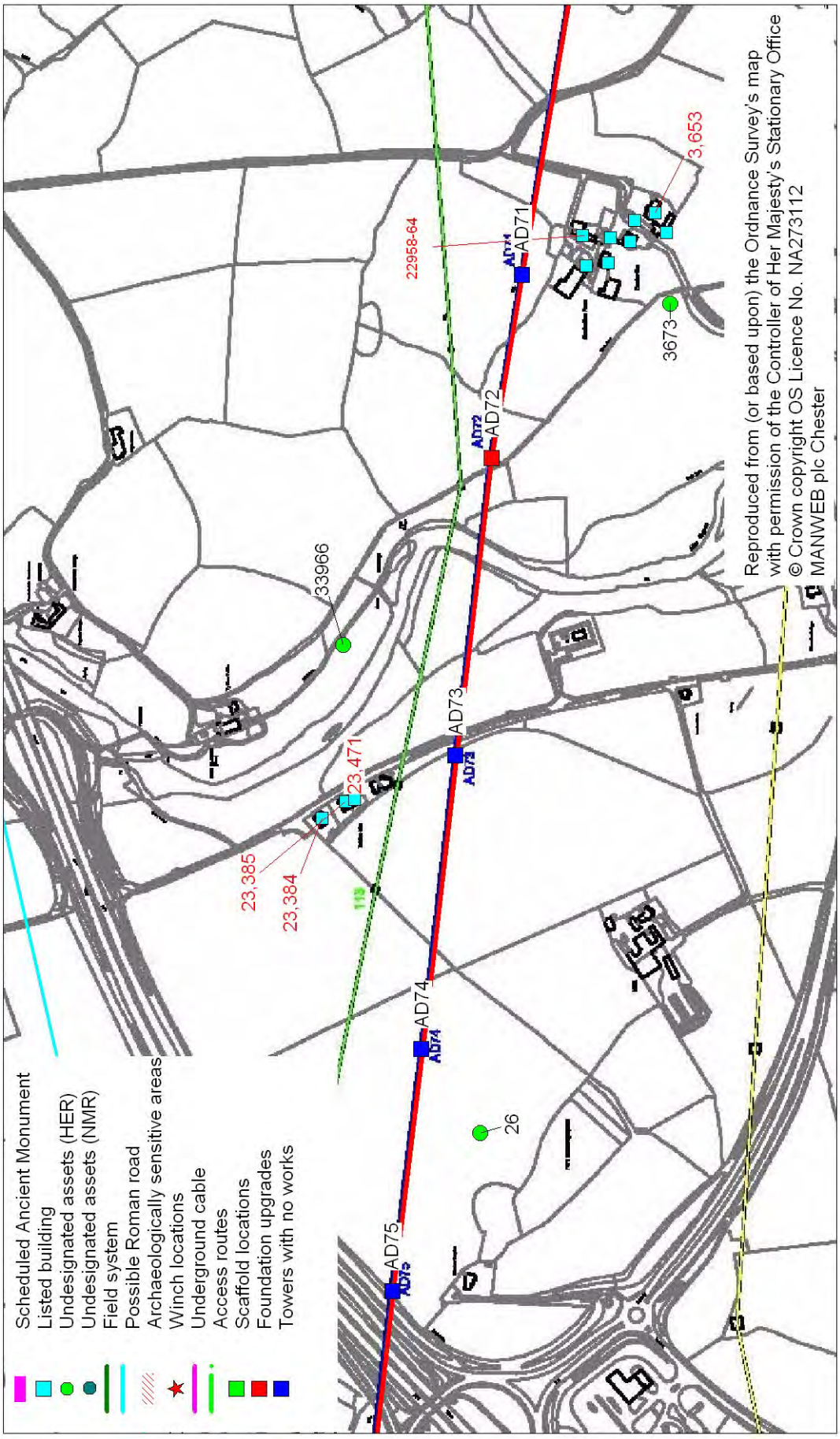

Fig. 5 Designated and undesignated cultural heritage assets, scale 1: 6,250 (overhead line shown in red)

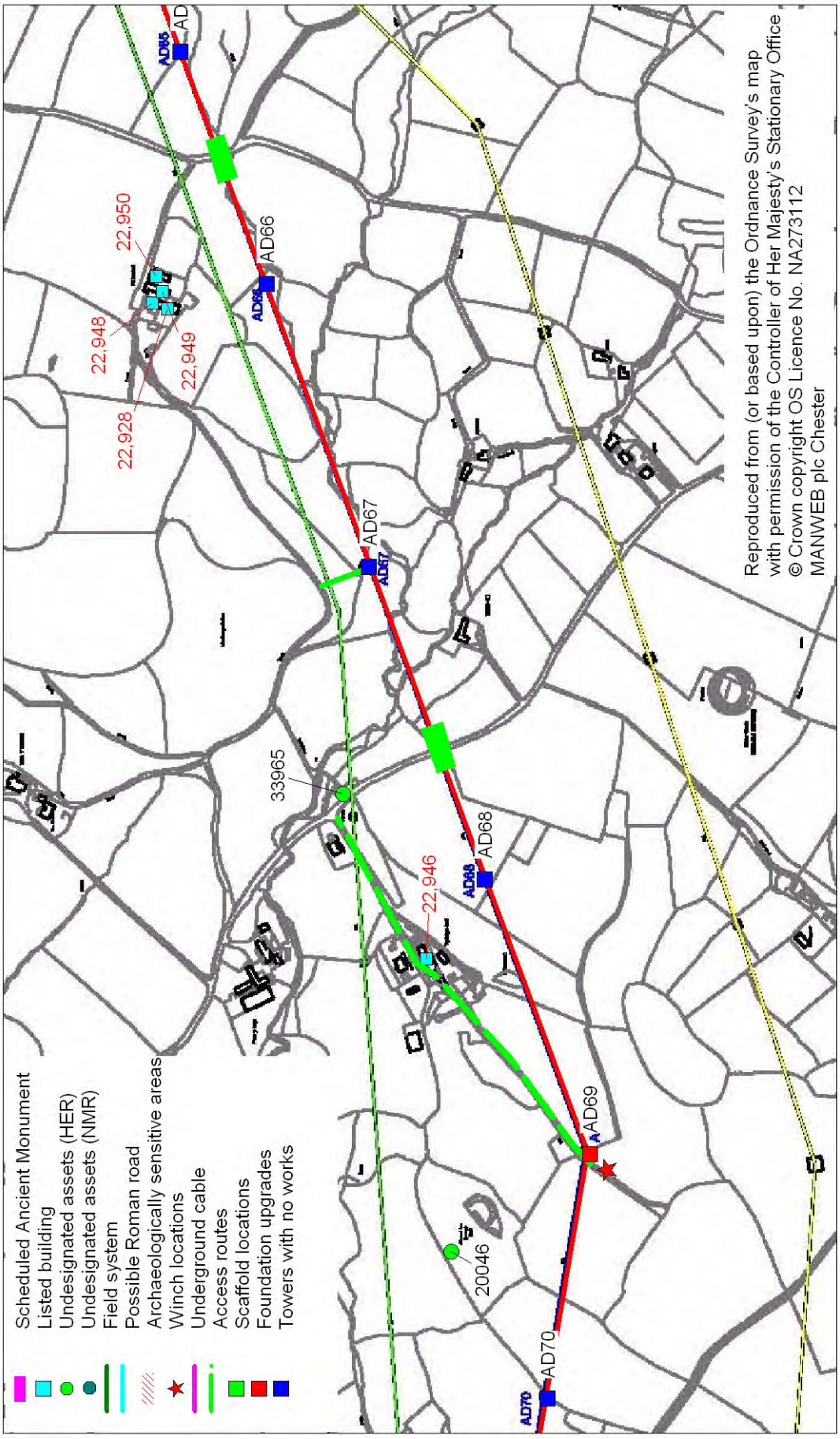

Fig. 6 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

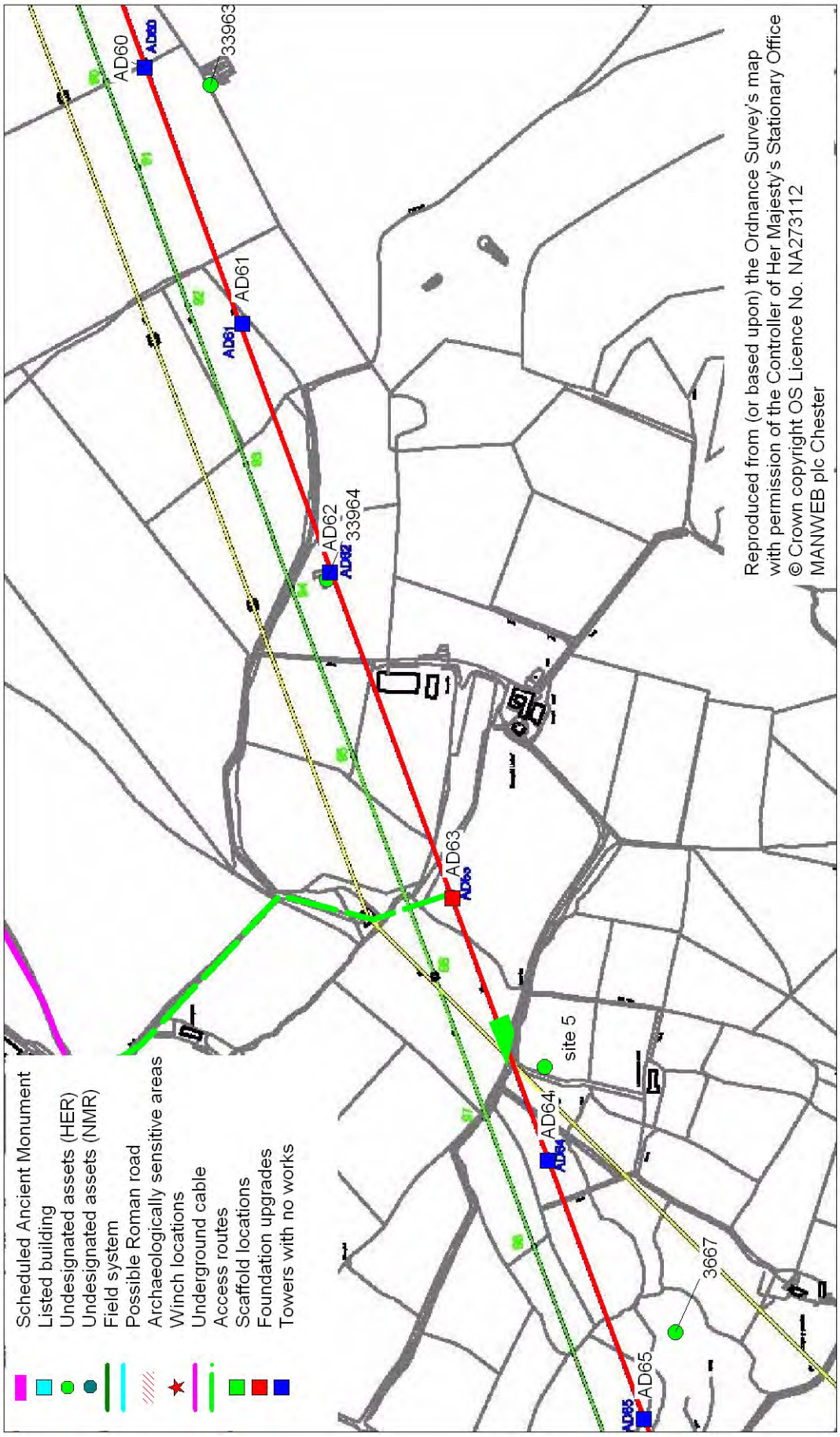

Fig. 7 Designated and undesignated cultural heritage assets, scale 1: 6,250 (overhead line shown in red)

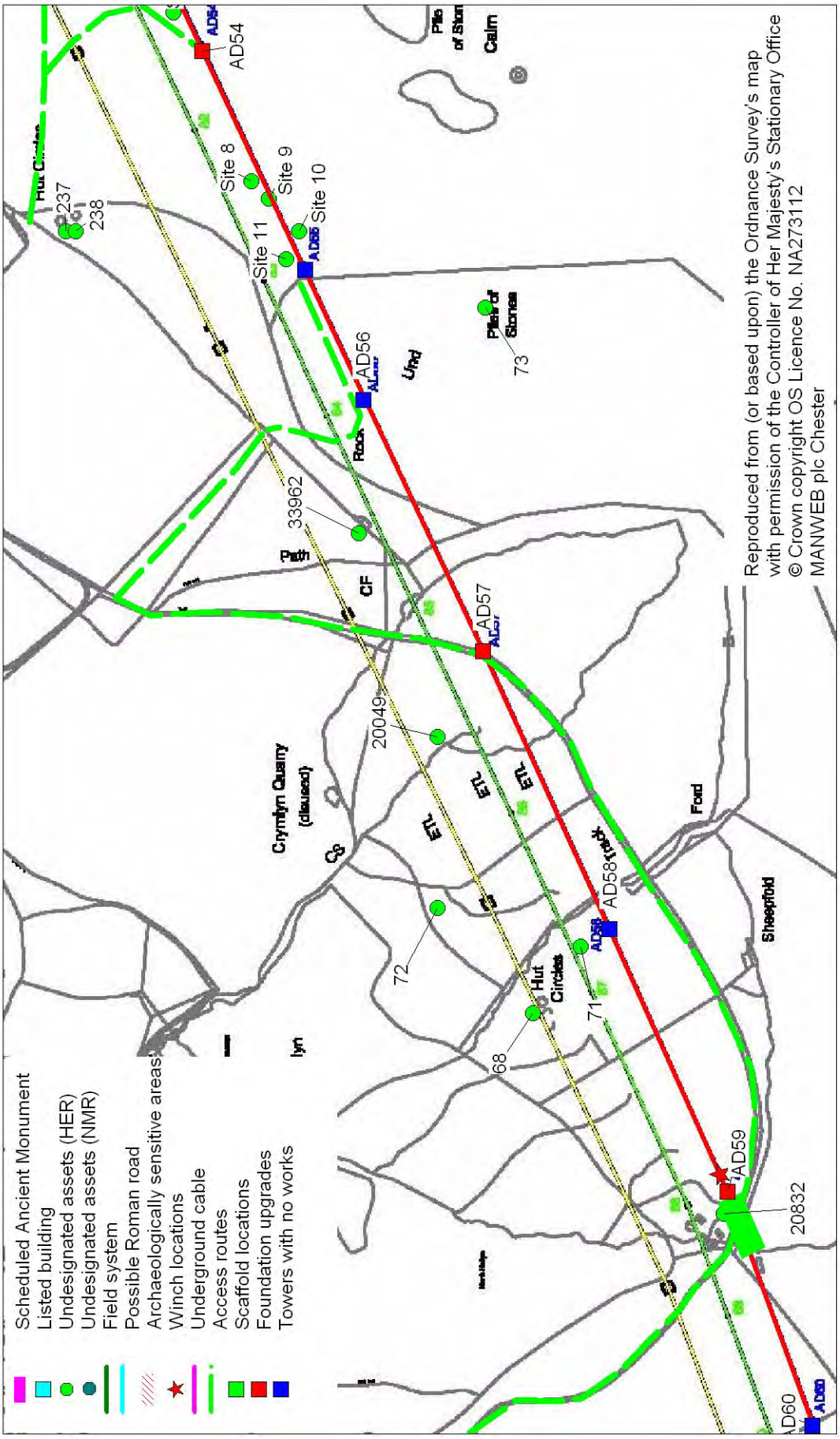

Fig. 8 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

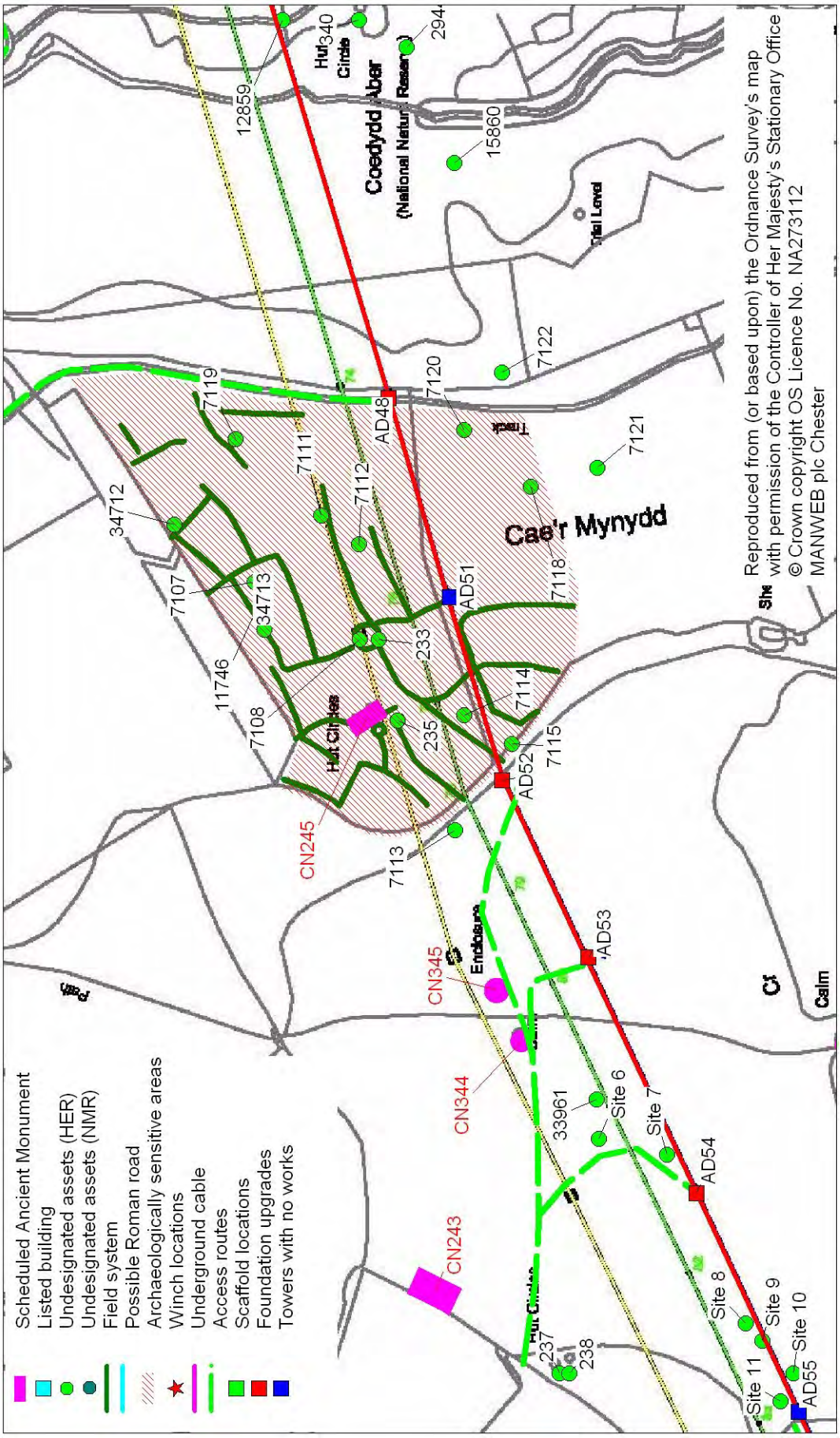

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Fig. 9 Designated and undesignated cultural heritage assets, scale 1: 6,250 (overhead line shown in red)

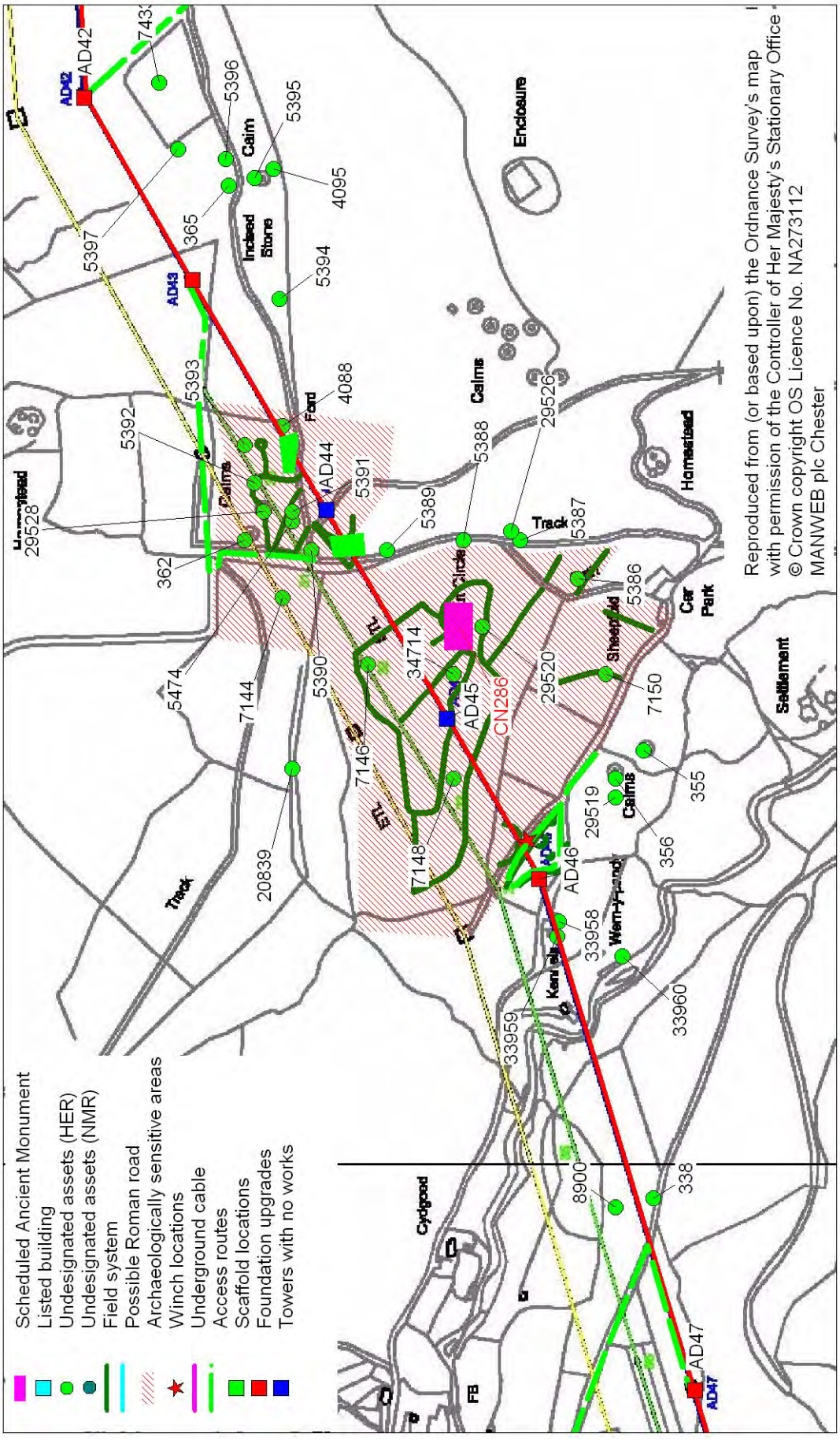

Fig. 10 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

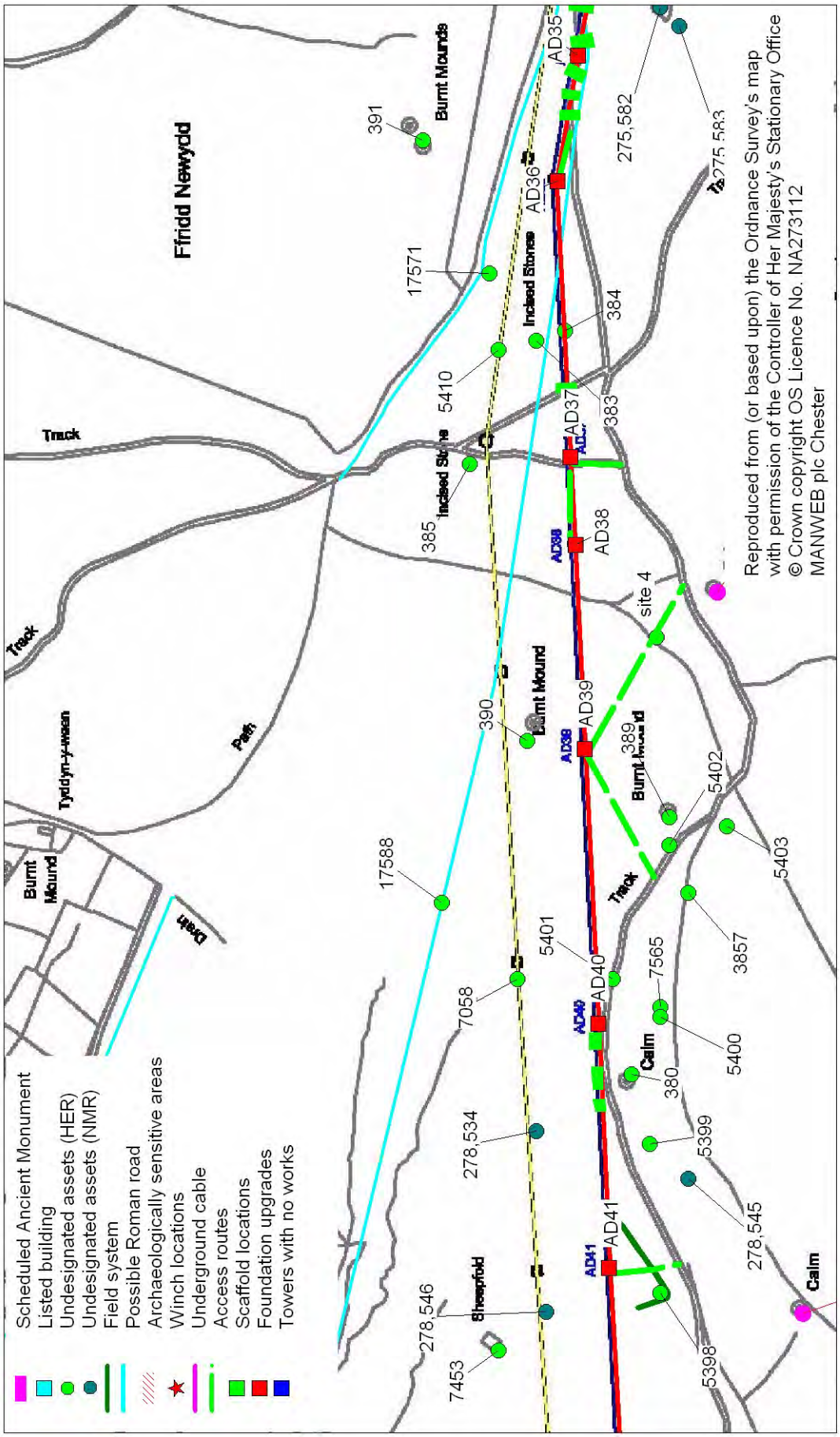

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Fig. 11 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

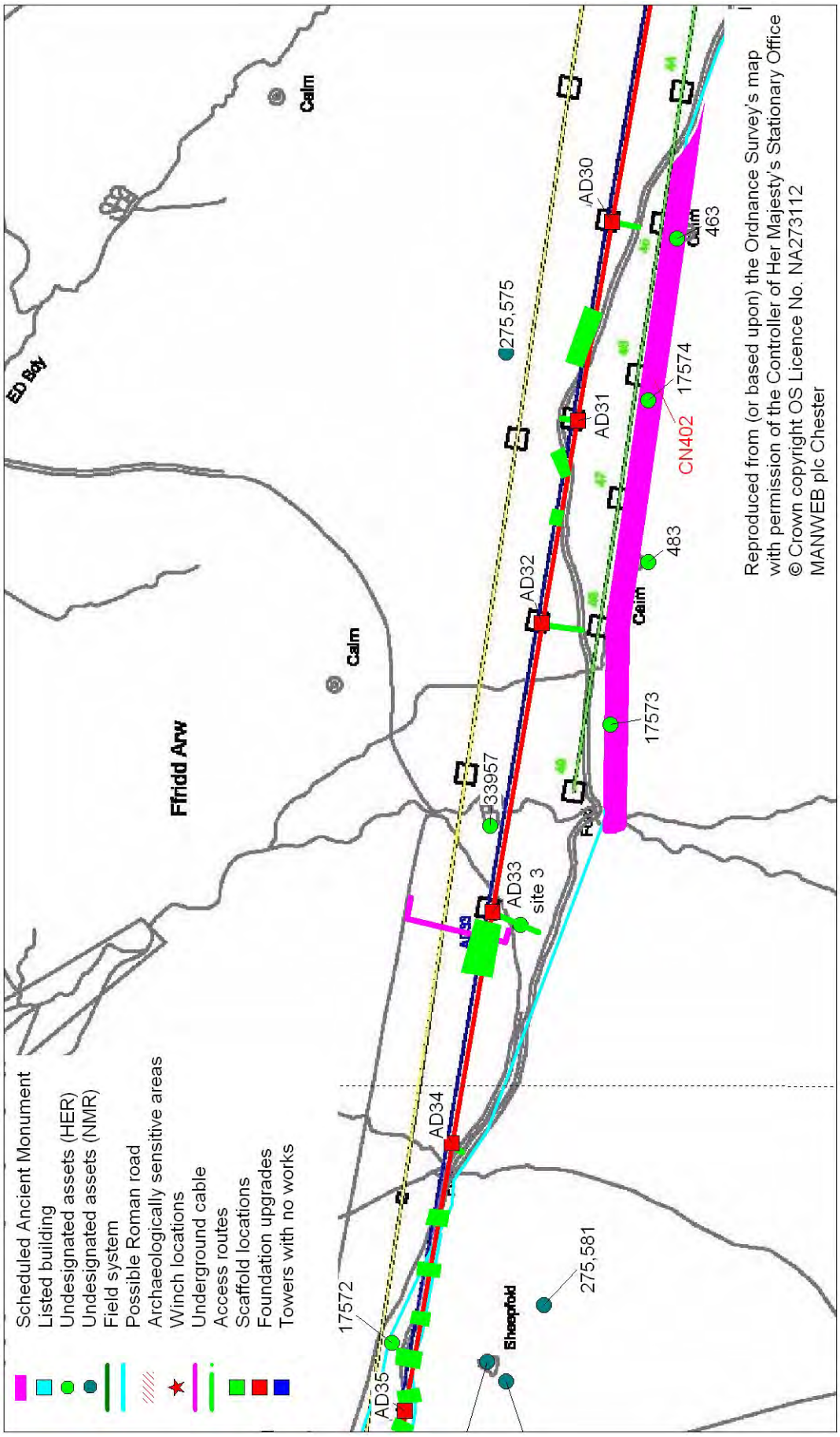

Fig. 12 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

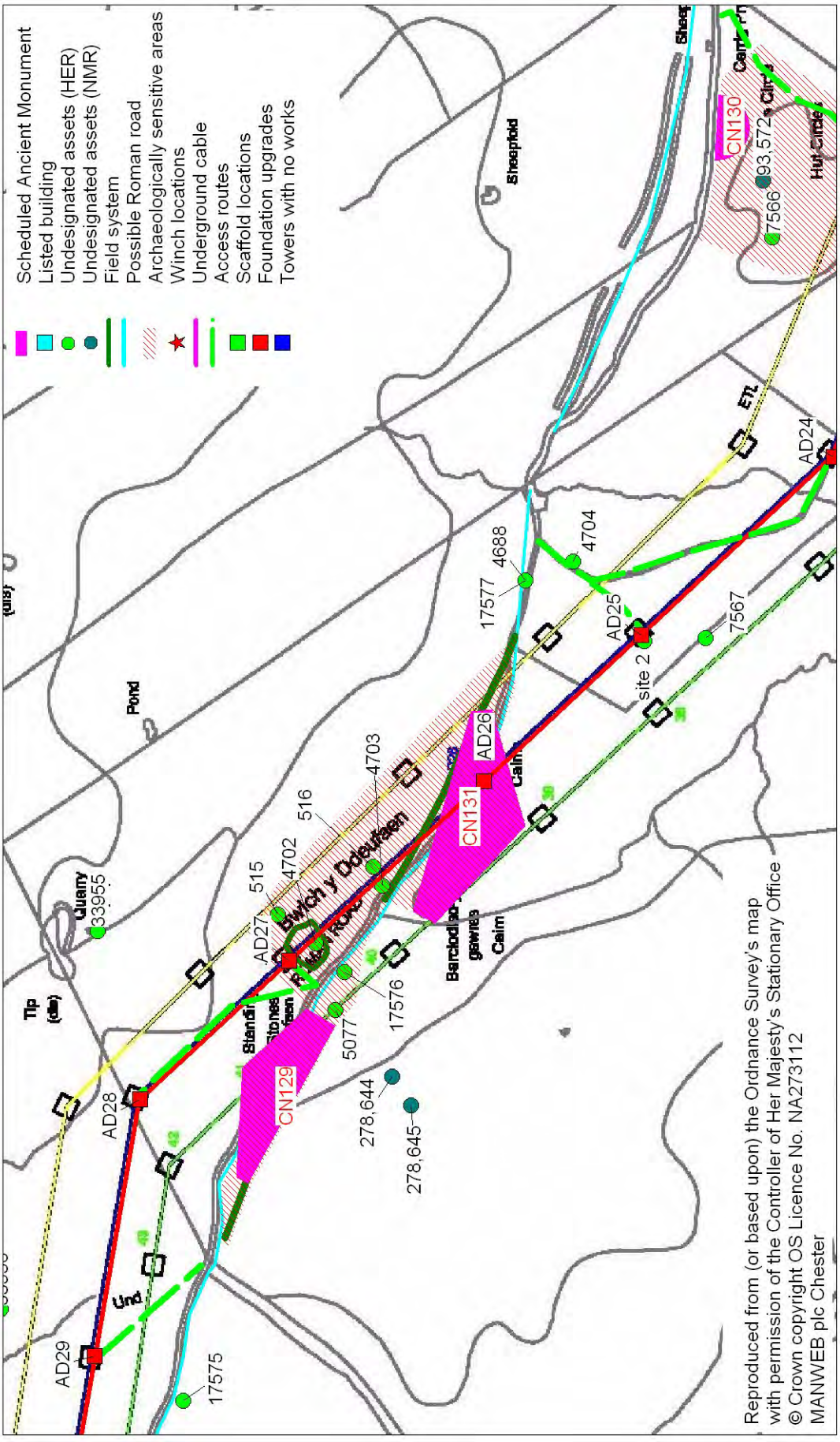

Fig. 13 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

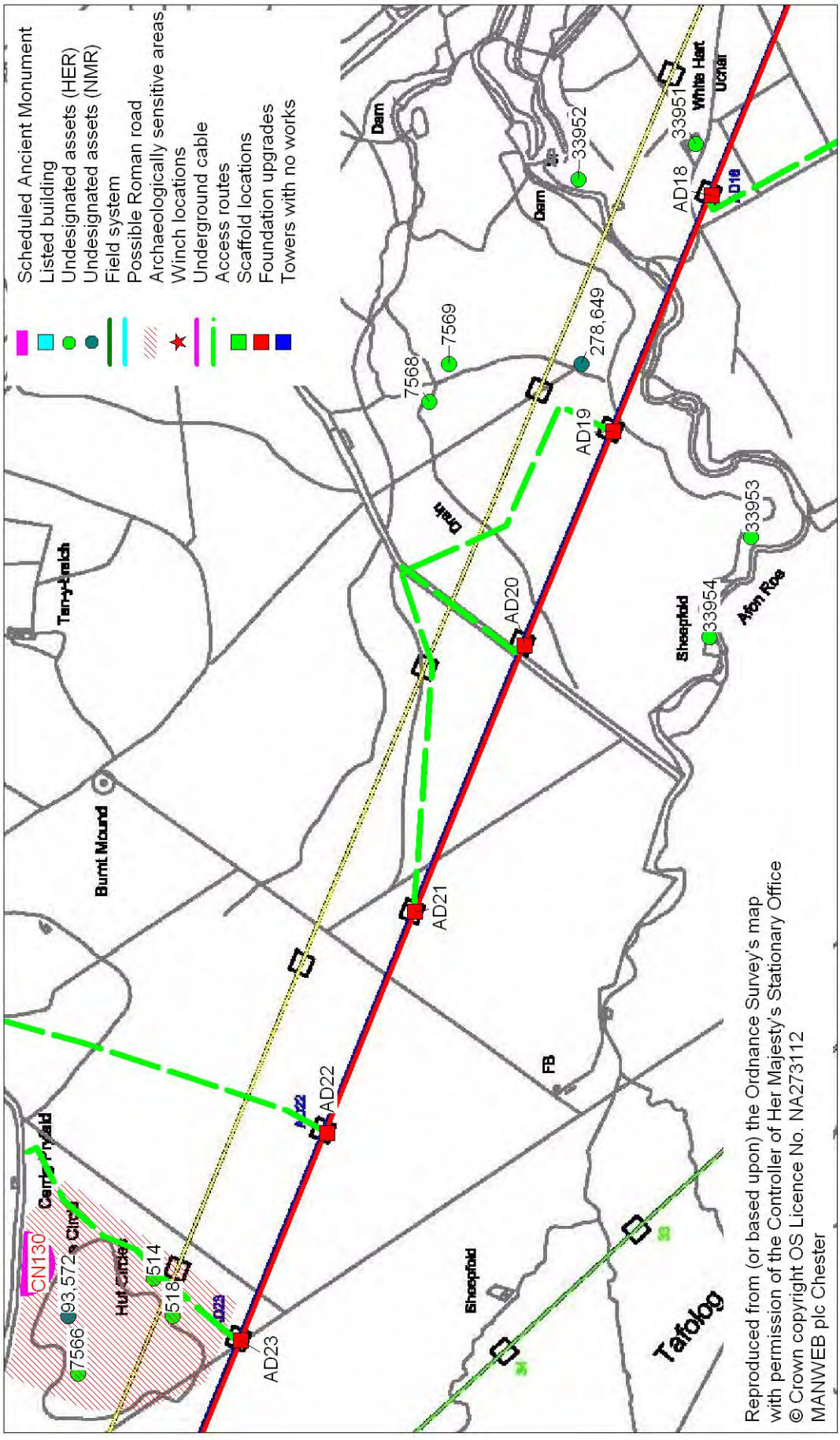

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Fig. 14 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

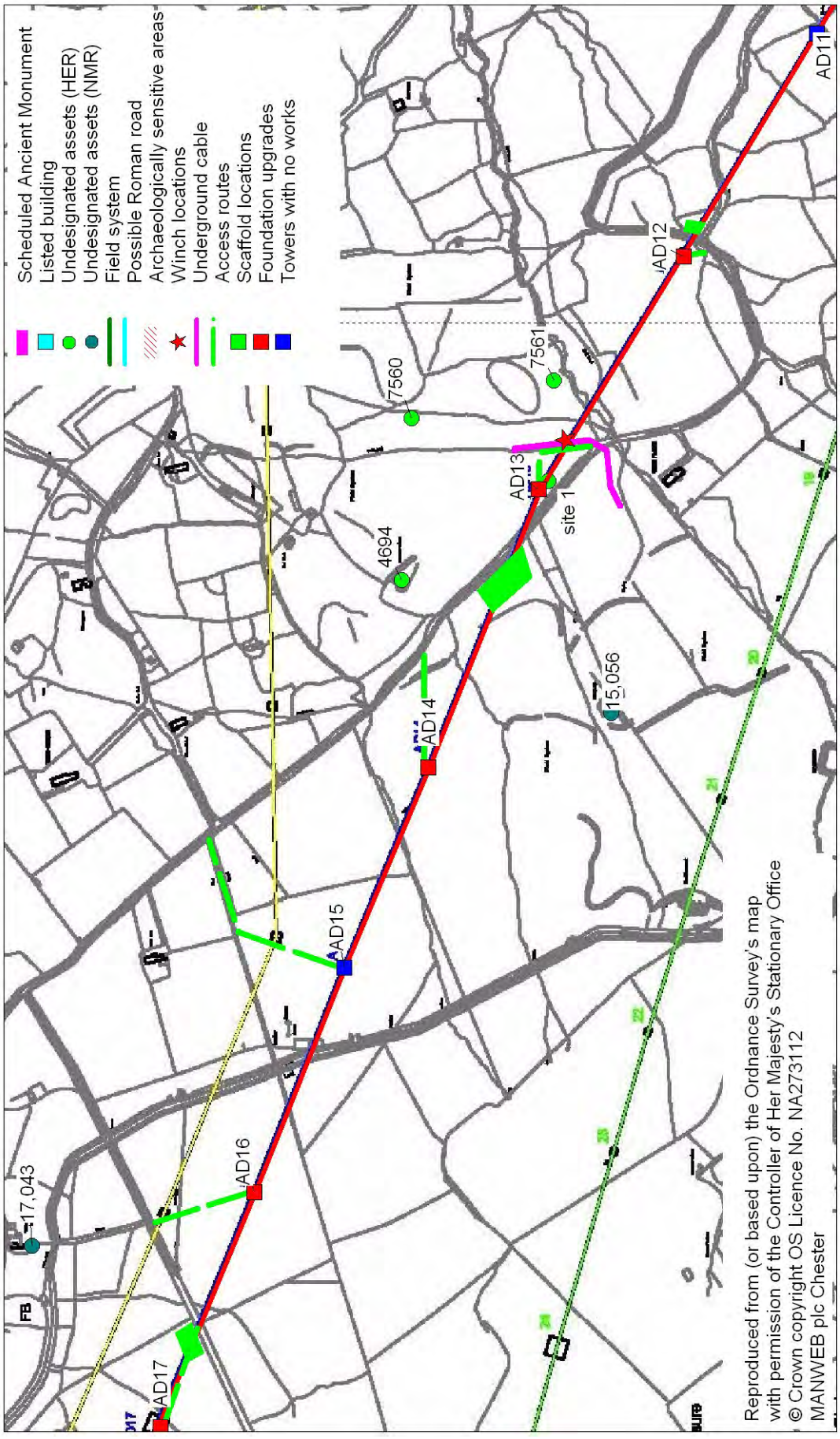

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Fig. 15 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

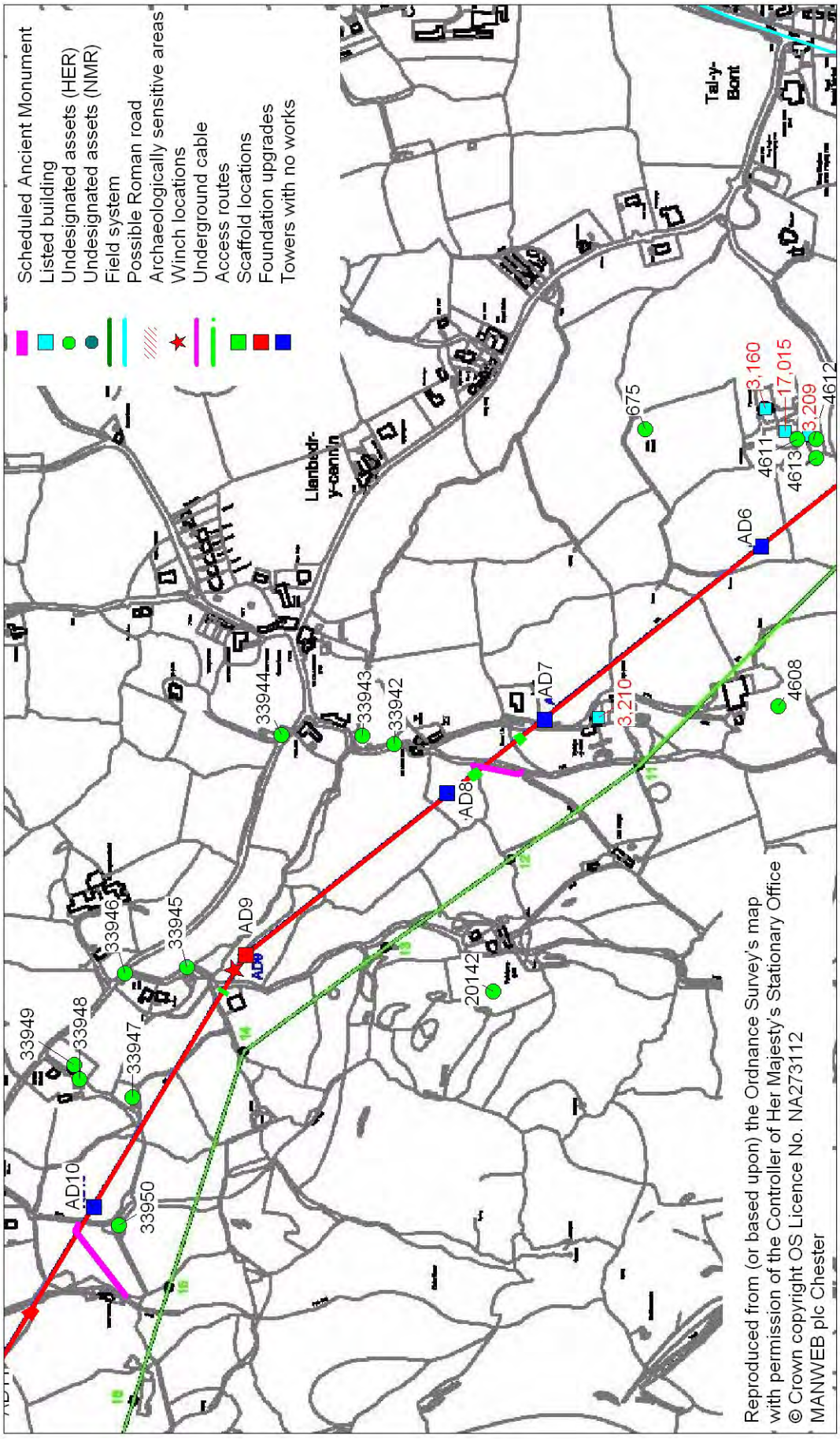

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Fig. 16 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)

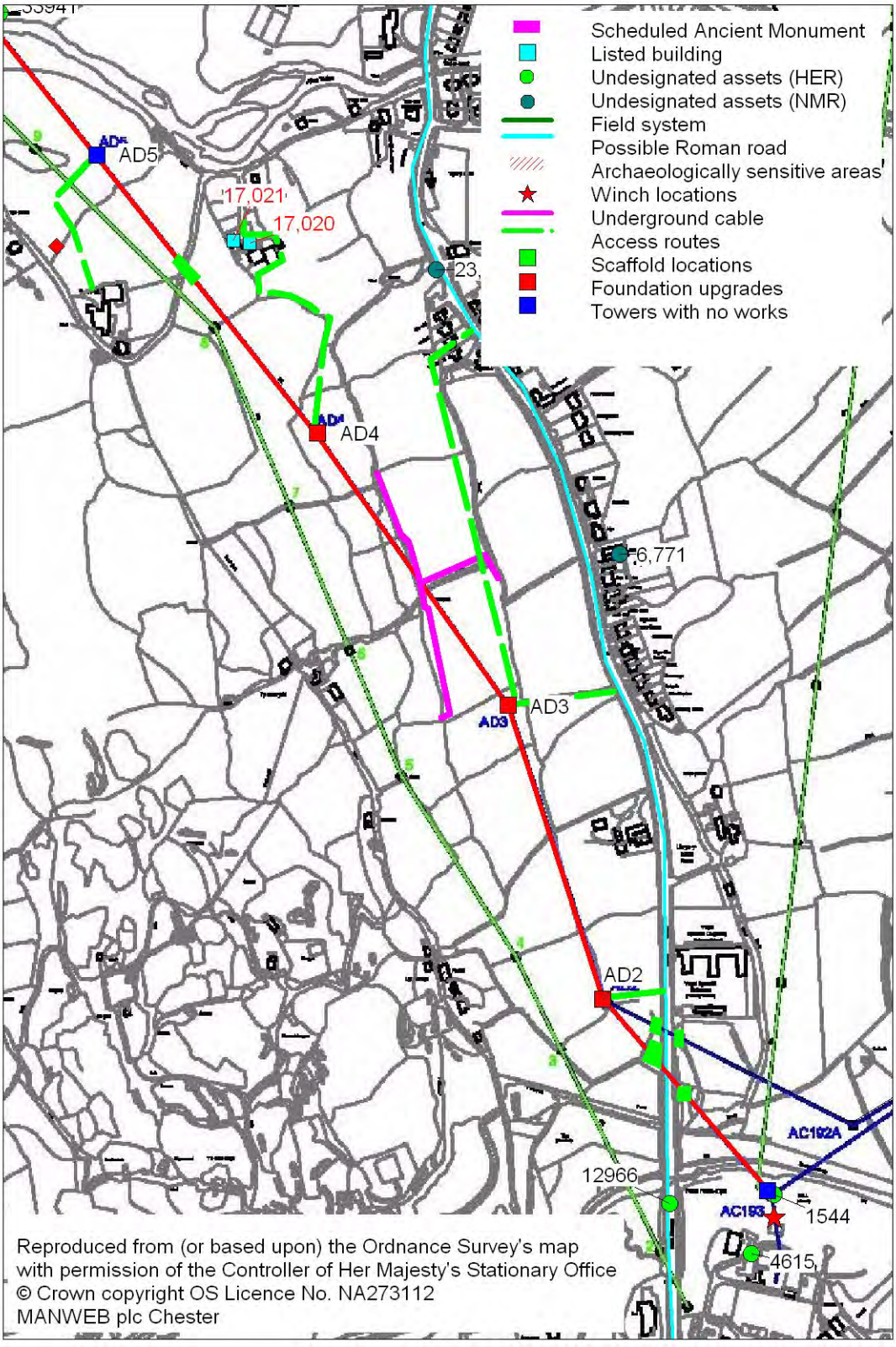

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Fig. 17 Designated and undesignated cultural heritage assets, scale 1:6,250 (overhead line shown in red)