

CPAT Report No. 1649

L52 Overhead Line Refurbishment, Maentwrog to Tryweryn, Gwynedd

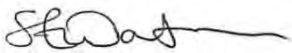


Desk-based Assessment



YMDDIRIEDOLAETH ARCHAEOLEGOL CLWYD-POWYS

CLWYD-POWYS ARCHAEOLOGICAL TRUST

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Summary

A desk-based assessment has been conducted by the Clwyd-Powys Archaeological Trust in connection with proposals to refurbish an existing overhead powerline, known as the L52 Line, which runs between Maentwrog and Tryweryn in Gwynedd. The refurbishment works will affect a 25km-long section of the line between Tower 17, to the west of Gellilydan and Tower 139, on the eastern side of Llyn Celyn. The whole of this section falls within the Snowdonia National Park.

The assessment identified a significant number of assets where there is the potential for direct impacts as a result of the various elements of the scheme and appropriate mitigation has been recommended. The results will inform the development of the work programme for the scheme and the assessment should be reviewed, and final mitigation agreed, before the scheme is finalised.

Crynodeb

Bu Ymddiriedolaeth Archaeolegol Clwyd-Powys yn cynnal asesiad wrth ddesg mewn cysylltiad â chynigion i ailwampio llinell drydan uwchben bresennol, o'r enw Llinell L52, sy'n rhedeg rhwng Maentwrog a Thryweryn yng Ngwynedd. Fe fydd y gwaith ailwampio'n effeithio ar adran 25km o hyd y llinell rhwng Tŵr 17, i'r gorllewin o Gellilydan a Thŵr 139, ar ochr ddwyreiniol Llyn Celyn. Daw'r adran gyfan hon o fewn Parc Cenedlaethol Eryri.

Nododd yr asesiad nifer sylweddol o asedau y gallai elfennau amrywiol y cynllun effeithio'n uniongyrchol arnynt, ac argymhellwyd camau lliniaru priodol. Bydd y canlyniadau'n darparu sail ar gyfer datblygu'r rhaglen waith ar gyfer y cynllun, a dylid adolygu'r asesiad, a chytuno ar y camau lliniaru terfynol, cyn y penderfynir ar fersiwn derfynol y cynllun.

1 Introduction

1.1. The Clwyd-Powys Archaeological Trust (CPAT) were invited to undertake an archaeological desk-based assessment on behalf of PLPC Ltd /SP Energy Networks in connection with the proposed refurbishment of an existing 33kV overhead powerline known as the L52 line, which runs between Maentwrog and Tryweryn. Specifically, the refurbishment works targeted a 25km section of the line between Tower 17 (SH 67631 39862) to the west of Gellilydan and Tower 139 (SH 88134 40399) on the eastern side of Llyn Celyn. The whole of this section falls within the Snowdonia National Park.

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.’

2 Nature of the Scheme

2.1. The scheme involves a programme of refurbishment works which will include some or all of the following:

- Tower assessment and ground investigations
- Replacement and upgrading of the tower furniture and fittings
- Restrunging and replacing conductors
- Use of pulling/tensioning equipment at specific locations
- Erection of scaffolding for road/rail/powerline crossings
- Site compounds
- Vehicular access to towers

2.2. The potential for any direct impact on heritage assets is considered to be relatively small, though any heritage assets requiring specific mitigation are detailed below.

3 Methodology

3.1. The assessment consisted of a desk-based study of readily available primary and secondary documentary, cartographic, and photographic sources in order to provide a historical framework for any surviving archaeological remains. This included relevant records held at the regional Historic Environment Records (HER), maintained by the Gwynedd Archaeological Trust (GAT), Meirionnydd Record Office, the National Monument Record and the National Library of Wales. The 1m-

- and 2m-resolution LiDAR data was accessed via the Welsh Government's Geo-Portal for Wales, although coverage was not complete. Data for designated and registered assets was obtained from the Gwynedd HER and the National Monuments Record of Wales.
- 3.2. Heritage assets include the following designated (statutorily protected) and registered (non-statutorily protected) sites: World Heritage Sites; Scheduled Monuments; Listed Buildings (LBs); Conservation Areas; and Registered Historic Parks and Gardens.
- 3.3. The legislative framework for the historic environment in Wales was revised by the *Historic Environment (Wales) Act 2016*. The 2016 Act amended the *Ancient Monuments and Archaeological Areas Act 1979* and the *Planning (Listed Buildings and Conservation Areas) Act 1990*. It extended the definition of scheduled monuments and enhanced their protection, as well as making changes to the process of scheduled monument consent. Changes were also made to the protection of listed buildings. The 2016 Act also provided for a statutory register of historic landscapes, a statutory list of place names, and imposed a statutory duty on Welsh Ministers to compile and maintain Historic Environment Records (HERs).
- 3.4. National policy within Wales is set out in *Planning Policy Wales* (10th edition, 2018) (PPW). Issues relating to the historic environment are set out in Chapter 6, 'Distinctive and Natural Places'. This notes that the 'protection, conservation and enhancement of historic assets is most effective when it is considered at the earliest stage' of a project; hence the need for a reasonable and proportionate impact assessment to ensure that any proposed development is sustainable and to prevent unnecessary harm to historic assets.
- 3.5. PPW is supported by Technical Advice Note 24: *The Historic Environment* (TAN 24). It is designed to assist local authorities with developing their local plans and for determination of planning applications or listed building consent in relation to historic assets. PPW is also supported by associated Cadw best practice guidance on the historic environment.
- 3.6. The assessment will follow guidance produced by Cadw, on behalf of the Welsh Government, for managing historic assets: *Heritage Impact Assessment in Wales* (2017); *The Setting of Historic Assets in Wales* (2017); and *Conservation Principles for the sustainable management of the historic environment in Wales* (2011). The assessment of potential impacts to the Registered Historic Landscape will utilize the *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in the Planning and Development Process* (2nd edition, 2007), produced jointly by Cadw and CCW.
- 3.7. The revised *Design Manual for Roads and Bridges* (DMRB), Volume 11 Section 3 Part 2, HA 208/07 (August 2007), though not specifically focused on developments of this nature, provides a suitable, general framework for assessing the cultural heritage.

4 Historical Background

- 4.1. This section provides a brief summary of the archaeology and history of the study area and its immediate surrounds, to enable the findings of the assessment to be placed in a wider context.

Prehistoric Era (10,000BC – AD 43)

- 4.2. There is very little evidence for prehistoric activity across the study area with only one prehistoric asset recorded in the HER: Nant y Lladron standing stone, to the south of Tower L52-82. It is recorded as having fallen since it was originally recorded in 1979 prior to forestry planting and is thought to lie directly beneath the electricity line.

Roman Period (AD 43 – 410)

- 4.3. While there is known Roman activity close by, notably the Roman military settlement at Tomen-y-Mur, overlooking the Trawsfynydd basin, the only evidence within the study area is represented by the postulated routes for the Roman roads that connected Tomen-y-Mur with Caerhun and Segontium.

Medieval Period (AD 410 – 1500)

- 4.4. Generally, the region as a whole is well populated with medieval deserted rural settlements and numerous long huts are recorded in the area, particularly on the upland areas of Foel Cynfal, to the south of the overhead line and Afon Goch and Afon Cynfal to the north.
- 4.5. A small deserted rural settlement is recorded within the study area to the south of Coed Pant-llwyn, comprising possible long huts, building platforms, trackways and associated stone walling.

Post-Medieval and Modern Periods

- 4.6. The majority of sites identified within the study area are of post-medieval date. Of national importance, Pont Tai-Hirion Old Bridge is a scheduled monument and a listed building, comprising a single-arched packhorse bridge of putative Elizabethan date, located to the west of the farmstead at Taihirion (NPRN 24157). The bridge forms a river crossing on an historic route way running across the mountains from Bala to Ffestiniog along the modern B4391.
- 4.7. In addition to the bridge, evidence of structures associated with post-medieval farming are predominant within the study area, with large areas of the upland landscape populated with ruinous sheepfolds, shelters and small farms. Several of the buildings use the name hafod or hafotty, implying a dwelling used in summer months when stock was grazed on upland pasture.
- 4.8. Other dwelling sites, such as Pant Llwyni cottage (the closest listed building to the overhead line), seem likely to have originated as encroachments. Such encroachment holdings were once common in the uplands of the area and a phenomenon of the early 19th century especially.

- 4.9. Stone-walled boundaries and enclosures associated with these farms and shelters are integral to the character of the historic landscape of this region and the line crosses numerous of these boundaries along its route.
- 4.10. Evidence of post medieval peat cutting, probably for fuel, has also been identified around the area of Gellilydan as well as on some of the upland areas to the east of Ffridd Nant Crethyll.
- 4.11. Remains relating to slate quarrying and mining have been identified within the study area particularly at Cwm Cynfal and a Manganese Mine is recorded at Nant yr Helfa, which that appears to have worked intermittently at the end of the 19th and beginning of the 20th centuries. The remains consist of a group of trial workings on the hillside including an adit, buildings, a crushing floor, trackways, a wheel pit and a mill race.
- 4.12. The most dramatic change to the landscape of the study area, particularly the area of the Tryweryn valley, occurred in the early 1960s with the construction of what was initially called the Tryweryn Reservoir, located at the eastern end of the overhead line. The reservoir was to provide water for Liverpool and its construction was approved in parliament by the Liverpool Corporation Act of 1957. The reservoir was eventually named Llyn Celyn after Capel Celyn, the hamlet that was submerged as a result of its construction.
- 4.13. As well as falling within the Snowdonia National Park, the western end of the study area also crosses the Trawsfynydd Registered Historic Landscape, namely, Historic Landscape Character Area 16 'Farming Settlements north of Trawsfynydd'. Historic Landscape Character Areas are intended to define places where local land-use patterns have left particularly strong or distinctive evidence in the landscape. This part of the landscape appears to have been largely formed by the time of the tithe map in the 1830s.

5 Baseline Assessment

- 5.1. The baseline assessment has considered all known heritage assets within a study area which extends for 250m to either side of the L52 Line to take account of potential access routes and compounds.

Designated and Registered Assets within 250m of the overhead line

- 5.2. There are 14 designated assets within 250m of the overhead line.
- 5.3. Table 1: Designated heritage assets within 250m of the overhead line

Designation	Number within 250m
World Heritage Sites	0
Scheduled Monuments	1
Listed Buildings	12
Registered Historic Parks and Gardens	0

Registered Historic Landscapes	1
Conservation Areas	0

Scheduled Monuments

- 5.4. Scheduled Monuments are designated features of national importance. They are protected under the Ancient Monuments and Areas of Archaeological Importance Act, 1979, and their settings are also protected.
- 5.5. The assessment has identified one scheduled monument within the study area, which is also a Listed Building (LB 25809).
- 5.6. Table 2: Scheduled Monuments within the study area.

SM No.	Name
ME028	Pont Tai-Hirion Old Bridge

Listed Buildings

- 5.7. These are protected under the Planning (Listed Buildings and Conservation Areas) Act 1990. All listed buildings are nationally important, but are graded in order of significance as Grade I, II* or II. Local planning authorities must have special regard to the desirability of preserving the setting of a listed building regardless of its grade, and it also requires planning proposals to meet the test of determining the extent to which a development affects views to and from a listed building.
- 5.8. The assessment has identified 12 listed buildings within the study area.

Table 3 Listed buildings within the study area

List no	Name	Grade	NGR
4840	Holy Cross Church	II	SH68693990
5192	Cwm Farm	II	SH73314130
16863	House 100m SW of Bont Newydd	II	SH71364079
18548	Bryn Cyfergyd	II	SH72104120
24657	Ty Uchaf	II	SH88314032
24658	Barn Range at Ty Uchaf	II	SH88294030
25809	Pont y Porthmyn (see SAM ME028)	II	SH80353980
25823	Pant Llwyni	II	SH83704020

83970	1 Gellilydan Terrace	II	SH68373990
83976	2 Gellilydan Terrace	II	SH68373989
83981	3 Gellilydan Terrace	II	SH68363989
84013	Pandy Bach	II	SH68664007

Registered Parks and Gardens

- 5.9. The Historic Environment (Wales) Act 2016 provides for the creation of a statutory Register of Parks and Gardens of Special Historic Interest in Wales. Parks and gardens are graded using the same categories as listed buildings (i.e. I, II*, II).
- 5.10. There are no registered parks and gardens within the study area.

Registered Historic Landscapes

- 5.11. Some historic landscapes in Wales are considered to be particularly significant and/or well preserved. These have been recorded in a Register of Landscapes of Historic Interest in Wales. Classed as either outstanding or special interest, these have been published in two volumes which form Part 2 of the Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales published in 1998 and 2001. Again this part of the Register is advisory but non-statutory.
- 5.12. The assessment has identified one registered historic landscape within the study area – Trawsfynydd.

Table 5 Registered historic landscapes within the study area

Ref no	Name
HLC 16	Farming Settlements north of Trawfynydd (PRN 18282)

Conservation Areas

- 5.13. These are protected under the Planning (Listed Buildings and Conservation Areas) Act 1990. This Act requires local planning authorities to have special regard to the desirability of preserving the setting of a conservation area, and it also requires planning proposals to meet the test of determining the extent to which a development affects views to and from such an area.
- 5.14. There are no Conservation Areas within the study area.

Historic Boundaries

- 5.15. Stone walled boundaries are an integral part of the character of this region and the L52 route crosses several areas which retain significant survival, particularly leading up to Llyn Celyn from the west as well as either side of the B4391 where the line crosses the road.

Undesignated Assets within 250m of the overhead line

- 5.16. A total of 212 undesignated assets have been identified within 250m of the overhead line.
- 5.17. Of these, there are two postulated routes for Roman roads connecting the Roman settlement at Tomen-y-Mur with settlements at Canovium, near Caerhun and Segontium near Caernarfon. These cross the L52 line between Towers 24 and 25 and Towers 40 and 41. To the north-east of Tower 40, a soil mark is visible on the 2009 Google Earth imagery to the east of Cae Iago, running roughly parallel with the A470, while an earthwork is visible on the 1m LiDAR data further to the north-east in the pasture fields beyond a small lane. It seems probable that these are elements of the Canovium to Tomen-y-Mur Roman road (PRN 17674) and have been defined on the accompanying mapping as a sensitive area.

6 Assessment of Impacts

- 6.1. The majority of the designated assets identified in this report lie along the fringes of the study area, well away from the overhead line and it is unlikely any will be directly impacted by the proposed refurbishment works. However, all potential impacts have been considered and relevant mitigation has been suggested where relevant.
- 6.2. The only scheduled monument (Pont Tai-Hirion Old Bridge ME028) lies over 200m to the north of the line, beyond the B4391. The bridge is also a listed building (Pont y Porthmyn - 25809).
- 6.3. Of the 12 listed buildings identified, Pant Llwyni (25823), a small single-storeyed cottage siting within stone walled enclosures, lies in closest proximity to the line, being located 110m to the north east of Tower L52-116.
- 6.4. Several of the L52 Line towers are located close to historic boundaries, specifically stone walls, which are characteristic of the landscape in this region and some of which are likely to have originated in the medieval and earlier post-medieval periods. Those historic boundaries which may be impacted upon by the refurbishment of the line are summarised in Table 3 and have been defined on the accompanying mapping as Sensitive Areas.
- 6.5. Thirty five of the L52 Line towers lie in close proximity to undesignated assets.
- 6.6. There are numerous small ruinous buildings and sheepfolds with associated stone walled enclosures, some of which are likely to have originated as encroachments holdings, which were once common in the uplands of this area. To the south of Tower L52-82, a fallen standing stone is recorded and is thought to lie directly beneath the electricity line.

Table 3: Summary of potential direct impacts to undesignated heritage assets

Tower	Asset designation	Ref	Description	Value	Type of Impact
30	Undesignated	PRN 37171	Trackway	Low	Access
40	Undesignated	PRN 17674	Roman Road, Canovium - Tomen y Mur	Medium	Access, puller/tensioner
42	Undesignated	Site 3	Ruinous building	Low	Access
44-45	Undesignated	Historic boundary	Stone boundary wall	Low	Access, ground investigations, puller/tensioner
45	Undesignated	NPRN 405881	Turf Covered Mound	Medium	Access
45-46	Undesignated	NPRN 8391	Chapel site	Medium	Access
46-47	Undesignated	Historic boundary	Stone boundary walls	Low	Access, puller/tensioner
		Site 4	Ruinous building	Low	
58-59	Undesignated	Site 12	Sheepfold	Low	Access, puller/tensioner
		Site 13	Stone pile	Low	
		Historic boundary	Stone boundary walls	Low	
67	Undesignated	PRN 14005	Sheepfold	Low	Access, ground investigations, puller/tensioner
82	Undesignated	PRN 1560	Ruinous Building	Low	Access, puller/tensioner
		PRN 1559	Standing Stone	High	
91-92	Undesignated	NPRN 514588	Quarry	Low	Access
97	Undesignated	PRN 55048	Peat Cutting	Low	Access

98-101	Undesignated	Historic boundary	Stone walling	Low	Access
		NPRN 514604	Stock Enclosure	Low	
		NPRN 514605	Cow House	Low	
		PRN 4997	House	Low	
102-107	Undesignated	NPRN 514684	Quarry	Low	Access
		NPRN 514693	Clearance cairn	Low	
		NPRN 514690	Clearance cairn	Low	
		NPRN 514694	Boundary Wall	Low	
		NPRN 514702	Cow House	Medium	
		PRN 71196	Military Road	Low	
		PRN 36891	Leat	Low	
		PRN 55100	Sheep Shelter	Low	
		PRN 55094	Sheepfold	Low	
		PRN 55096	Sheepfold	Low	
		PRN 55098	Sheepfold	Low	
		PRN 55103	Sheepfold	Low	
		PRN 55099	Shelter	Low	
		PRN 55095	Sheepfold	Low	
		NPRN 514688	Cow House	Medium	Access, puller/ tensioner
104	Undesignated	PRN 55097	Sheepfold	Low	Access, ground investigations,

					puller/ tensioner
109	Undesignated	PRN 55102	Sheepfold	Low	Access, ground investigations, puller/ tensioner
109-110	Undesignated	Site 15	House site	Low	Access
112-113	Undesignated	Historic boundary	Stone walling	Low	Access, puller/ tensioner
117	Undesignated	PRN 10191	Enclosure	Medium	Access, ground investigations, puller/ tensioner
119-120	Undesignated	PRN 10198	Trackway	Low	Access
		PRN 10199	Stone wall	Low	
120-122	Undesignated	10203	Enclosure	Medium	Access
		10196	Hollow way	Medium	
		10204	Clearance Cairn	Low	
		10206	Long Hut	Medium	
		10202	Wall	Low	
		10195	Sheepfold	Low	
		36894	Sluice	Low	
		10201	Structure	Low	
		10205	Structure	Low	
		10194	Wall	Low	
		10207	Wall	Low	
		Historic boundaries	Stone walling	Low	Access, puller/ tensioner

123	Undesignated	Site 17	Ruinous building	Low	Access
123-124	Undesignated	Historic boundary	Stone walling	Low	Access, puller/tensioner

7 Mitigation

- 7.1. A number of undesignated heritage assets have been identified within the assessment area which could be subject to direct impacts from the proposed work.
- 7.2. In the light of the assessment above, this section provides a description of the measures adopted to mitigate the identified impacts on heritage assets, together with a consideration of the residual effects of the development on heritage assets.

Mitigation Measures

- 7.3. At present no details are available regarding the preferred access routes to each of the towers. The location of heritage assets should be taken into account during the planning stage and this assessment and the recommended mitigation should be reviewed to take any new information into account. Where access routes cross unenclosed land in particular the proposed routes should be assessed via a programme of fieldwalking to both demarcate known assets prior to the commencement of works and also determine the location of any previously unknown assets that may lie within the confines of the proposed access routes and compound or storage locations.
- 7.4. Although none of the scheduled monuments or listed buildings are likely to be directly affected by the proposed refurbishment works, there is the potential for direct impacts from access works. There is also potential for direct impacts to a number of ruinous agricultural buildings, trackways and historic stone boundaries. A collapsed standing stone is thought to lie immediately below the power line. Of the 212 undesignated heritage assets within 250m of the overhead line, the majority are unlikely to be impacted by the proposed works, although potential impacts have been identified for 56 heritage assets, the mitigation for which is listed in Table 4.

Types of Identified Impact

Access

Activity There is the potential for direct impacts on a number of undesignated assets through gaining vehicular access to the towers. Where appropriate, areas of higher archaeological significance have been identified and are defined on the accompanying mapping as 'Sensitive Areas'.

- 7.5. *Mitigation* The recommended mitigation is avoidance through careful planning. Access routes should be designed to avoid all known heritage assets and areas of archaeological significance.

7.6. Ground Investigations

7.7. *Activity* There is also the potential for direct impacts as a result of ground investigations to a number of sheepfold sites at Tower 67, Tower 104 and Tower 109. There is also a stone walled enclosure at Tower 117.

7.8. *Mitigation* At this stage the primary mitigation is for avoidance of all assets located close to the Towers, which may require demarcation for those in proximity to Towers 67, 104, 109 and 117. This should be reviewed once further details of the scheme become available and further mitigation put in place if required.

7.9. Restraining of Cables

7.10. *Activity* There is the potential for direct impacts on a number of undesigned assets through vehicle movement and the positioning of the puller/tensioner equipment and cable drums.

7.11. *Mitigation* The recommended mitigation is avoidance through careful planning of the works programme and specifically:

- 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

Scaffolding for road crossings etc

7.12. *Activity* No details are currently available regarding the positioning of scaffolding, although this is unlikely to have the potential for any direct impacts to any heritage assets.

7.13. *Mitigation* The recommended mitigation is avoidance through careful planning of the works programme, specifically:

- No positioning of equipment or materials within the immediate area of an asset
- Demarcation where appropriate to ensure avoidance
- Watching brief where ground disturbance is unavoidable

7.14. Site Compounds and storage of materials

7.15. *Activity* No details are currently available regarding the positioning of site compounds and storage of material and equipment, although there is the potential for direct impacts on a number of undesigned heritage assets.

7.16. *Mitigation* The recommended mitigation is avoidance through careful planning of the works programme, specifically:

- No storage of equipment or materials within the immediate area of an asset

7.17. Table 4: Specific Mitigation Measures for assets with potential direct impacts

Tower	Ref	Type	Value	Type of Impact	Mitigation
30	PRN 37171	Trackway	Low	Access, ground investigations	Avoidance Preservation in situ
40	PRN 17674	Roman Road	Medium	Access, puller/ tensioner	Avoidance Preservation in situ
42	Site 3	Ruinous building	Low	Access	Avoidance Preservation in situ
44-45	Historic boundary	Stone boundary wall	Low	Access, ground investigations, puller/ tensioner	Avoidance Preservation in situ
45	NPRN 405881	Turf Covered Mound	Medium	Access	Avoidance Preservation in situ
45-46	NPRN 8391	Chapel site	Medium	Access	Avoidance Preservation in situ
46-47	Historic boundary	Stone boundary walls	Low	Access, puller/ tensioner	Avoidance Preservation in situ
	Site 4	Ruinous building	Low		
58-59	Site 12	Sheepfold	Low	Access, puller/ tensioner	Avoidance Preservation in situ
	Site 13	Stone pile	Low		
	Historic boundary	Stone boundary walls	Low		
67	PRN 14005	Sheepfold	Low	Access, ground investigations,	Avoidance

				puller/ tensioner	Demarcation Preservation in situ
82	PRN 1560	Ruinous Building	Low	Access, puller/ tensioner	Avoidance
	PRN 1559	Standing Stone	High		Preservation in situ
91-92	NPRN 514588	Quarry	Low	Access	Avoidance Preservation in situ
97	PRN 55048	Peat Cutting	Low	Access	Avoidance Preservation in situ
98-101	Historic boundary	Stone walling	Low	Access, puller/ tensioner	Avoidance Preservation in situ
	NPRN 514604	Stock Enclosure	Low		
	NPRN 514605	Cow House	Low		
	PRN 4997	House	Low		
102-107	NPRN 514684	Quarry	Low	Access	Avoidance Preservation in situ
	NPRN 514693	Clearance cairn	Low		
	NPRN 514690	Clearance cairn	Low		
	NPRN 514694	Boundary Wall	Low		
	NPRN 514702	Cow House	Medium		
	PRN 71196	Military Road	Low		

	PRN 36891	Leat	Low		
	PRN 55100	Sheep Shelter	Low		
	PRN 55094	Sheepfold	Low		
	PRN 55096	Sheepfold	Low		
	PRN 55098	Sheepfold	Low		
	PRN 55103	Sheepfold	Low		
	PRN 55099	Shelter	Low		
	PRN 55095	Sheepfold	Low		
	NPRN 514688	Cow House	Medium	Access, puller/ tensioner	Avoidance Preservation in situ
104	PRN 55097	Sheepfold	Low	Access, ground investigations, puller/ tensioner	Avoidance Demarcation Preservation in situ
109	PRN 55102	Sheepfold	Low	Access, ground investigations, puller/ tensioner	Avoidance Demarcation Preservation in situ
109-110	Site 15	House site	Low	Access	Avoidance Preservation in situ
112-113	Historic boundary	Stone walling	Low	Access, puller/ tensioner	Avoidance Preservation in situ
117	PRN 10191	Enclosure	Low	Access, ground investigations, puller/ tensioner	Avoidance Demarcation Preservation in situ

119-120	PRN 10198	Trackway	Low	Access	Avoidance
	PRN 10199	Stone wall	Low		Preservation in situ
120-122	10203	Enclosure	Low	Access	Avoidance Preservation in situ
	10196	Hollow way	Medium		
	10204	Clearance Cairn	Low		
	10206	Long Hut	Medium		
	10202	Wall	Low		
	10195	Sheepfold	Low		
	36894	Sluice	Low		
	10201	Structure	Low		
	10205	Structure	Low		
	10194	Wall	Low		
	10207	Wall	Low		
	Historic boundary	Stone walling	Low	Access, puller/ tensioner	Avoidance Preservation in situ
123	Site 17	Ruinous building	Low	Access	Avoidance Preservation in situ
123-124	Historic boundary	Stone walling	Low	Access, puller/ tensioner	Avoidance Preservation in situ

8 Recommendations for further assessment

- 8.1. This assessment and recommended mitigation should be reviewed once further details become available regarding access routes, ground investigation, scaffolding positions, pulling locations and site compounds and before the scheme is finalised.
- 8.2. Field visits should be undertaken once access routes have been decided to ensure their avoidance of assets and determine whether any demarcation or other mitigation may be required. Visits should also be conducted to check the location of any aspect of the work where the primary mitigation of avoidance is not deemed sufficient.
- 8.3. Final mitigation measures will be determined through consultation with the Gwynedd Archaeological Planning Service (GAPS) and with their approval.

9 Sources

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Cartographic sources

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1801 Survey of the Pale Estate by rev John Lloyd

1839 Ordnance Survey Old Series 1" Map 74 NW, Llangollen 75NW, Harlech

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1875 Cynfal Estate Map

1888 Ordnance Survey 1:2500 1st edition Merioneth 13.10, 13.11, 13.07

1889 Ordnance Survey 1:2500 1st edition Merioneth 11.12, 12.09, 12.10, 12.06, 13.08

Photographic Sources

Ordnance Survey Aerial Photography at RCAHMW

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1972 1202-72-411

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1993 026-93-143

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082-93-143

049-93-143

012-93-143

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RAF Aerial Photography at RCAHMW

1946 106G/UK/1469: Frames 3113-3114, 3119-3125, 4362-4364, 4375, 4380, 3351-3352, 4206, 4207

1946 106G/UK/1488: Frames 3029-3030, 3033, 3048, 3052, 3053

1946 106G/UK/1467: Frames 4205, 4209-4211, 4224-4226

1946 106G/UK/1468: Frames 1452-1453

1946 106G/UK/1469: Frames 4381

1948 541/178: Frames 3036-3039

1958 58/2649: Frame 226

Oblique Aerial Photography at RCAHMW

AP_2007_3091

AP_2011_269, 270, 273, 279

AP_2014_761

10 Archive deposition Statement

- 10.1. The project archive has been prepared according to the CPAT Archive Policy and in line with the ClfA *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives guidance* (2014). The archive is entirely digital and will be deposited jointly with the Historic Environment Record, Gwynedd Archaeological Trust and the National Monuments Record (RCAHMW).

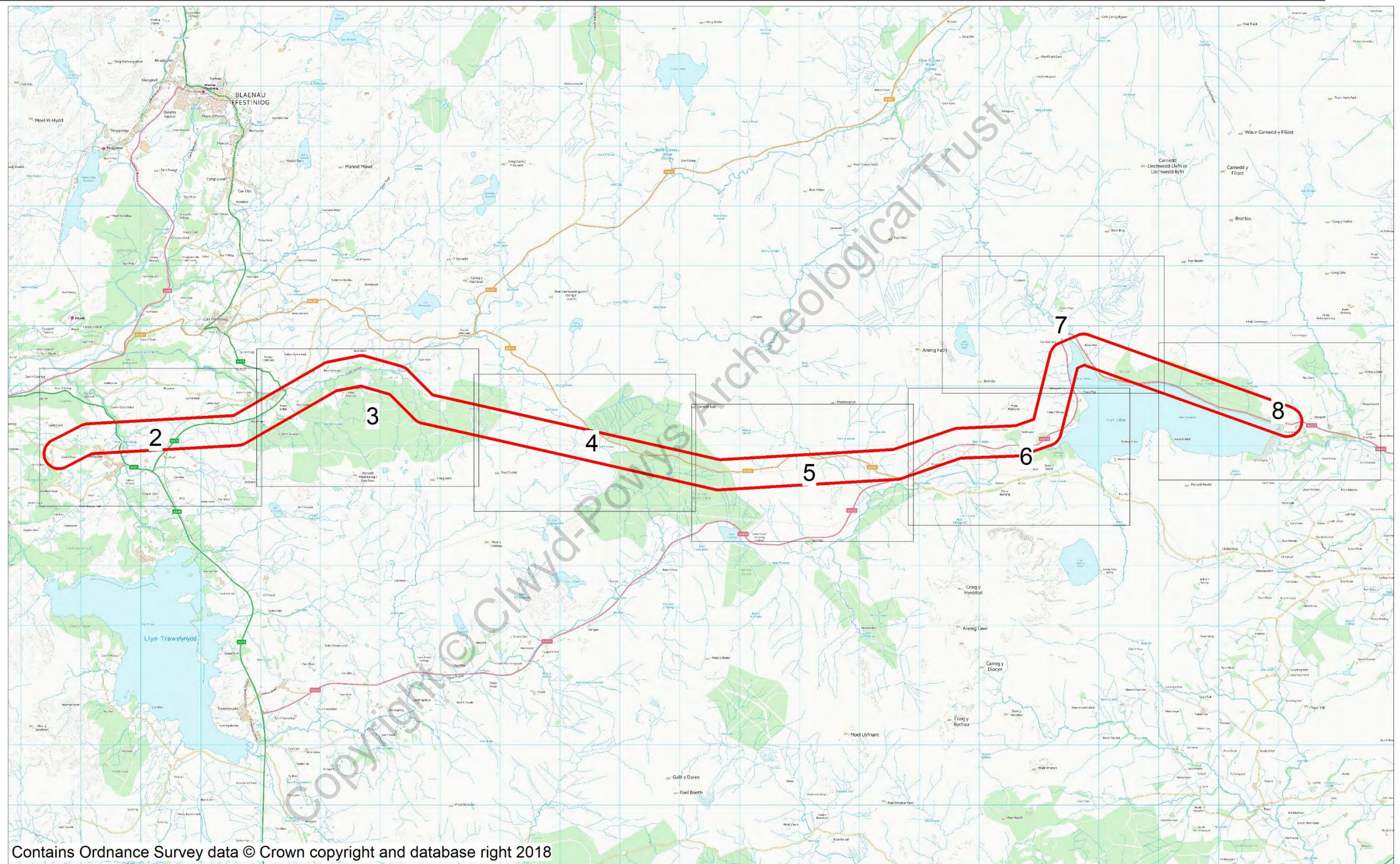


Fig. 1 L52 Line, Gellilydan to Llyn Celyn – key to maps 2-8

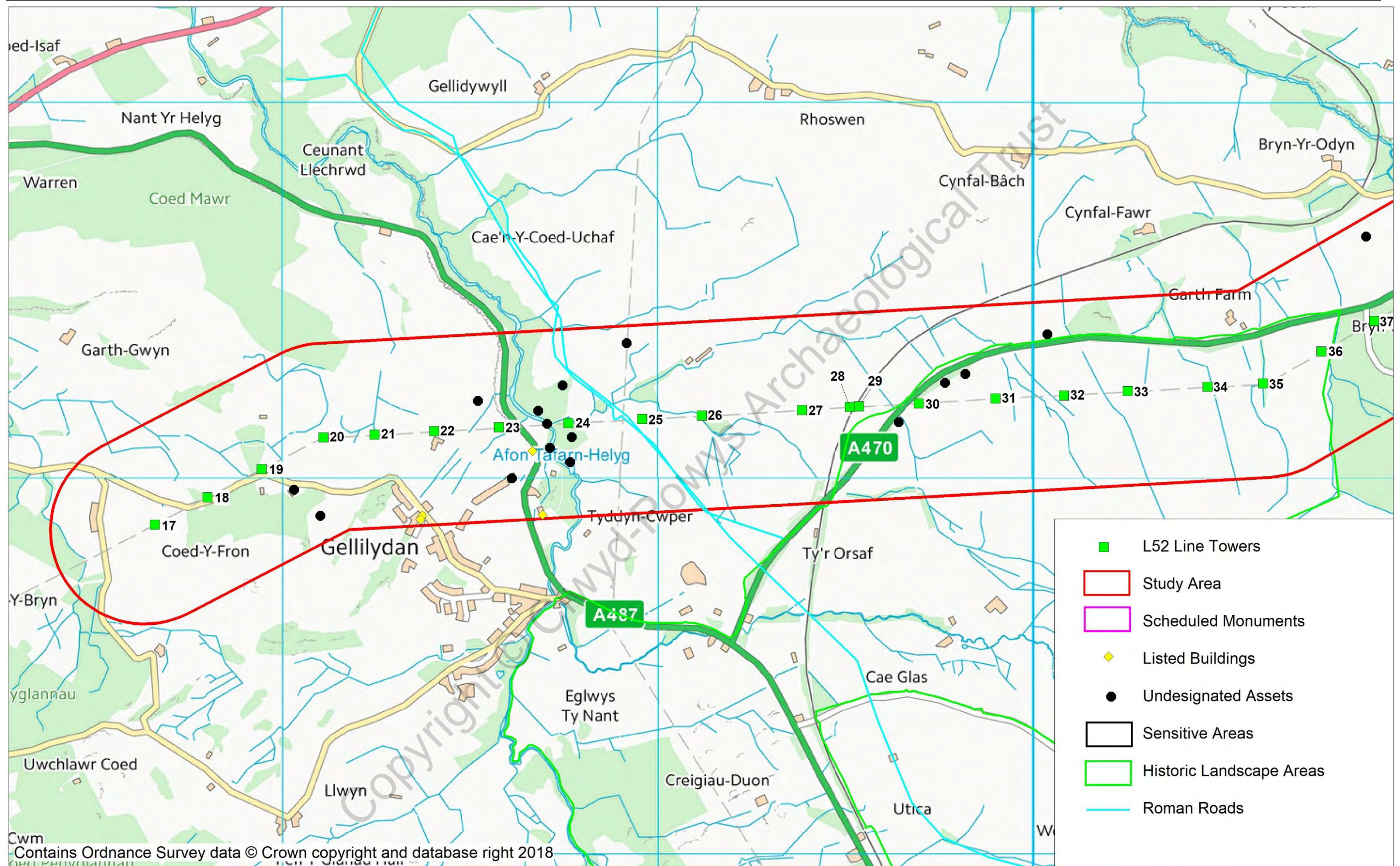


Fig. 2 Heritage assets, Towers L52 17 to L52 37

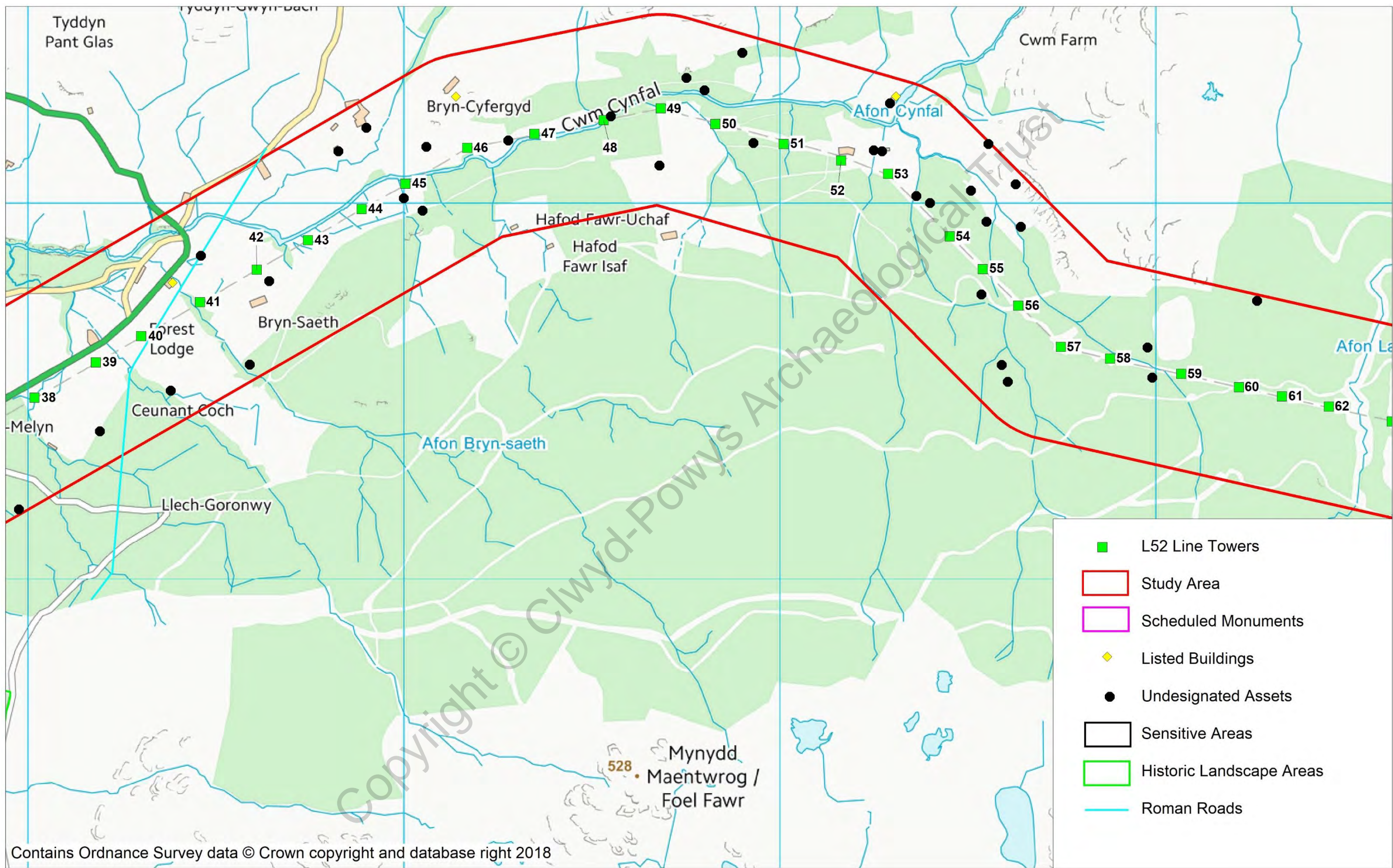


Fig. 3 Heritage assets, Towers L52 38 to L52 62

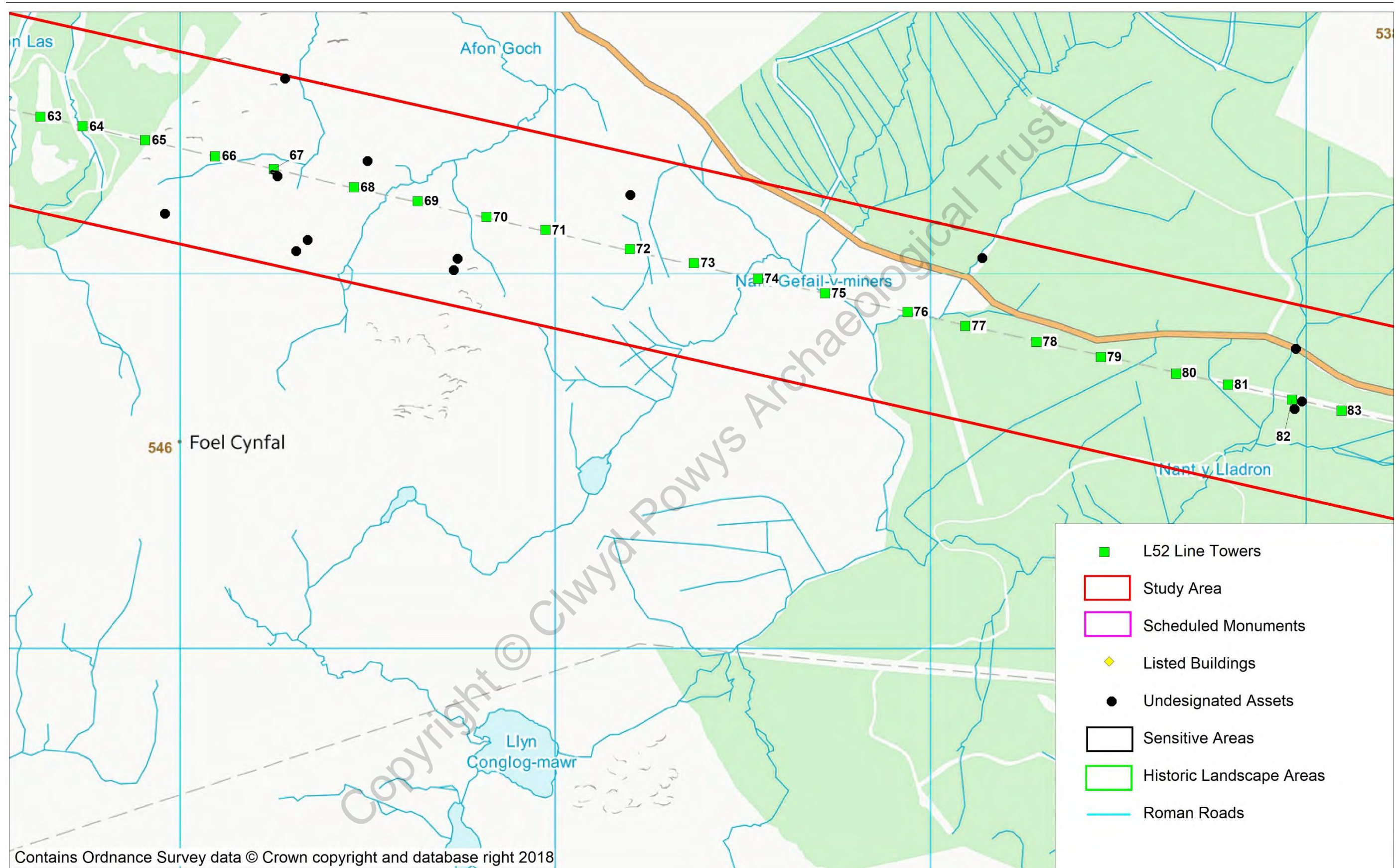


Fig. 4 Heritage assets, Towers L52 63 to L52 83

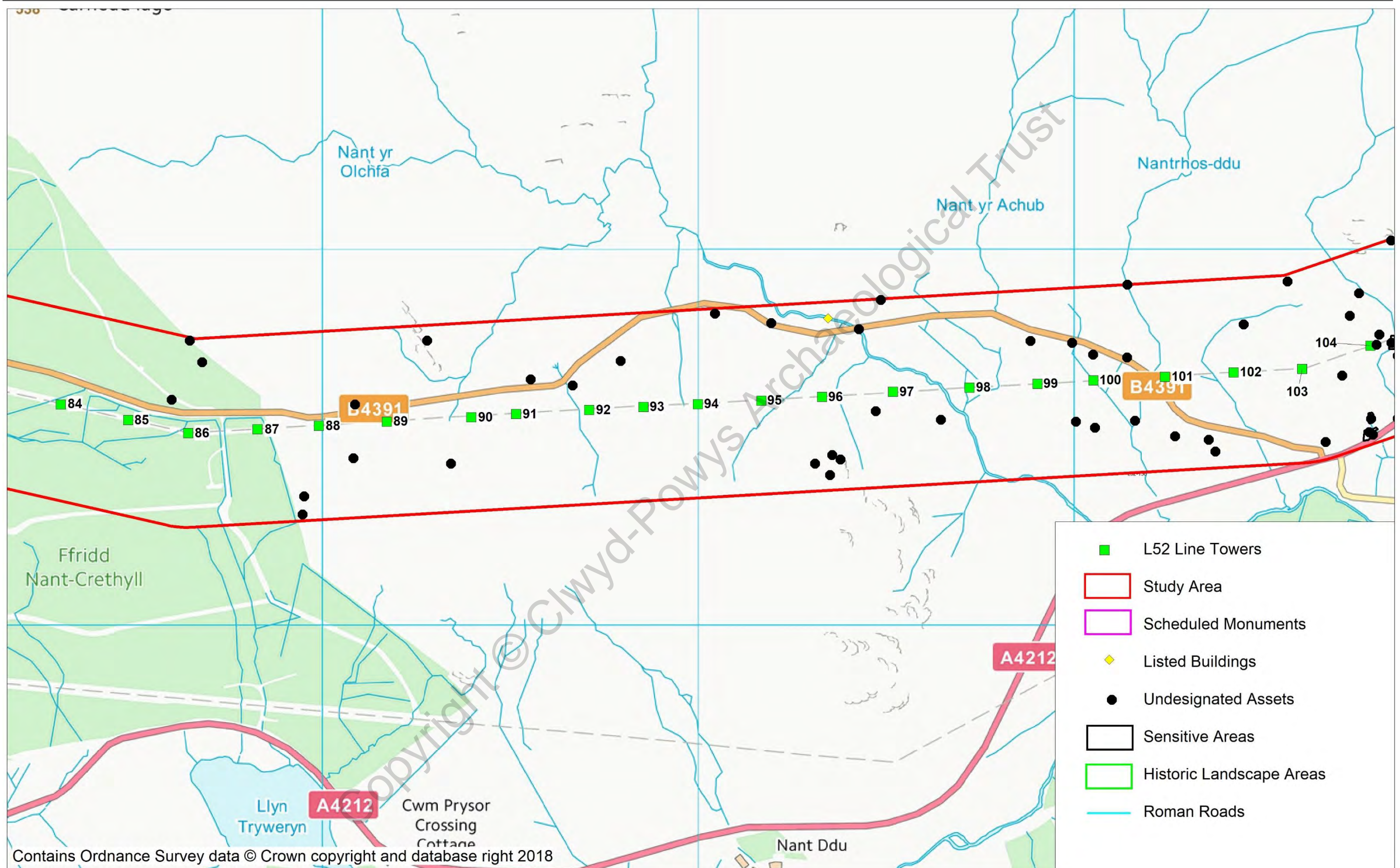


Fig. 5 Heritage assets, Towers L52 84 to L52 104

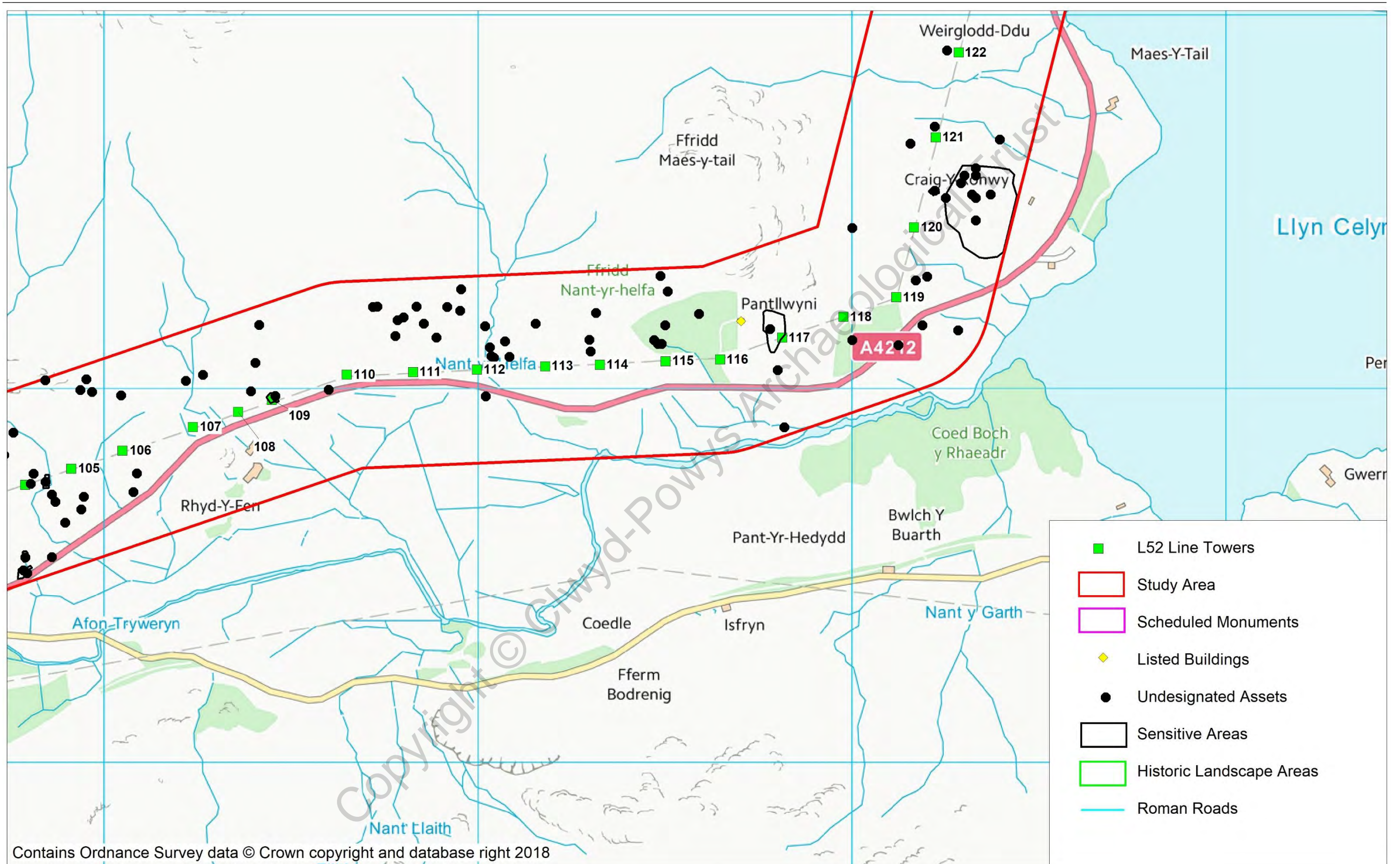


Fig. 6 Heritage assets, Towers L52 105 to L52 122

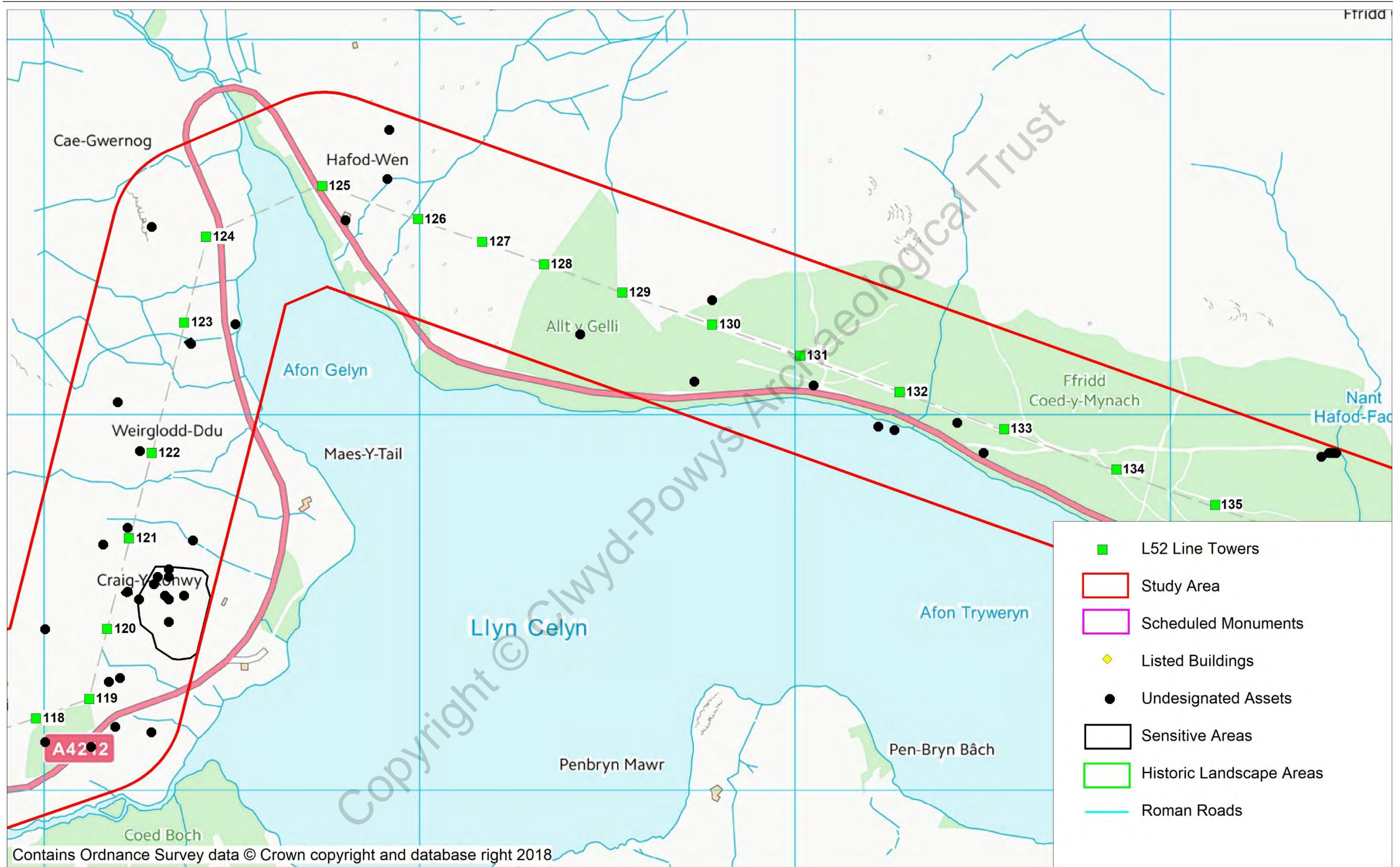


Fig. 7 Heritage assets, Towers L52 122 to L52 135

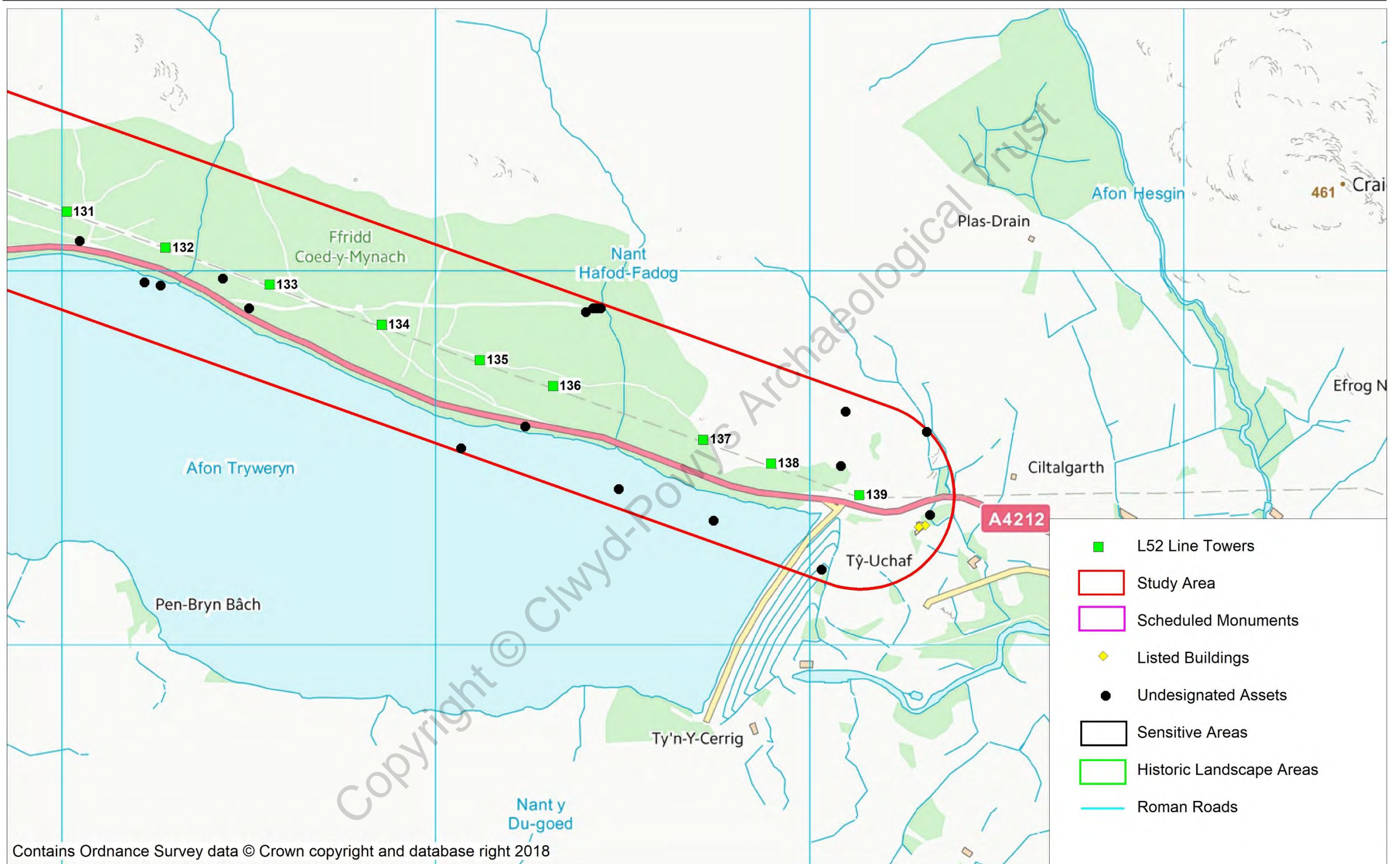


Fig. 8 Heritage assets, Towers L52 136 to L52 139

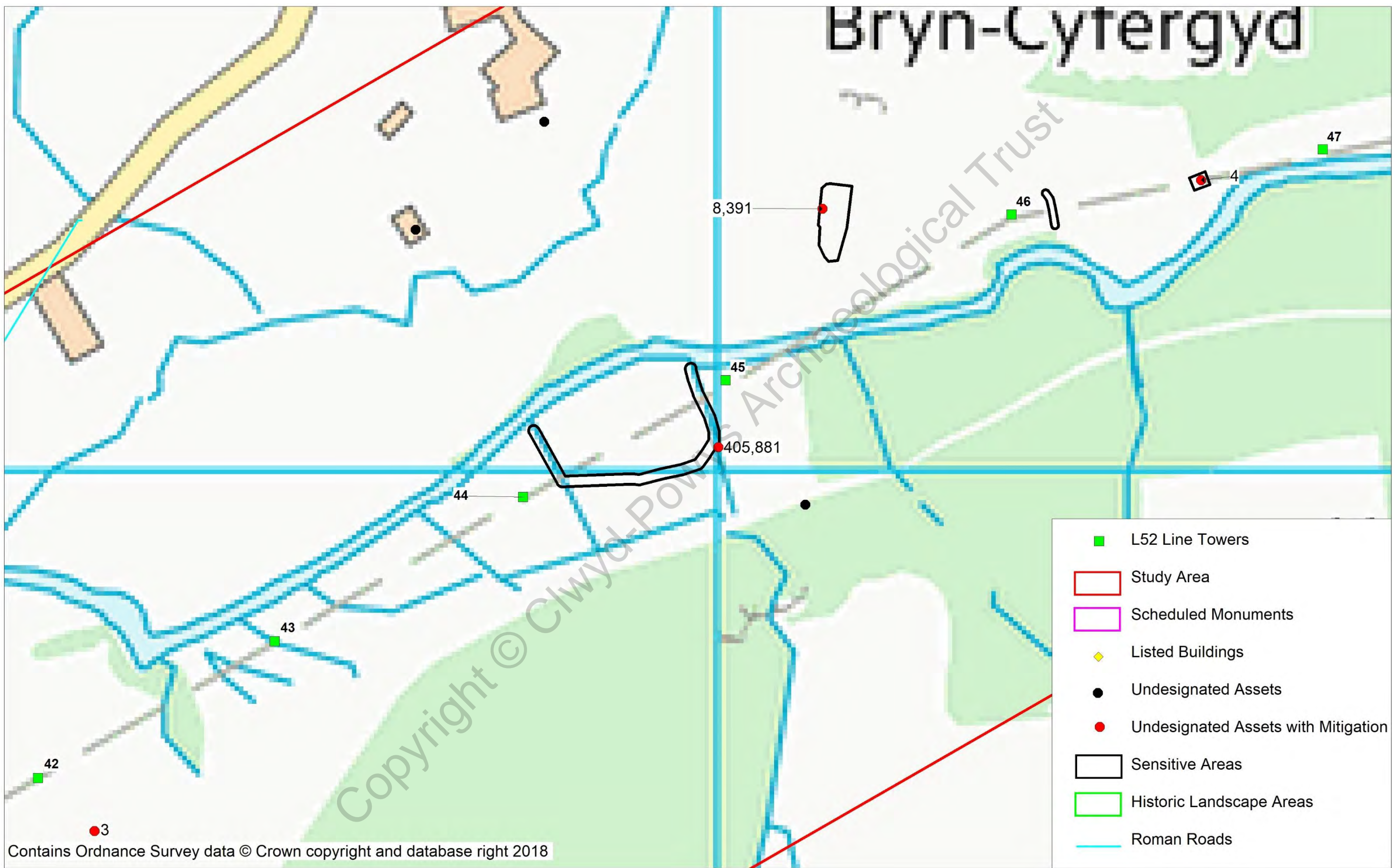


Fig. 9 Potential impacts to heritage assets between Towers L52 44 and 45

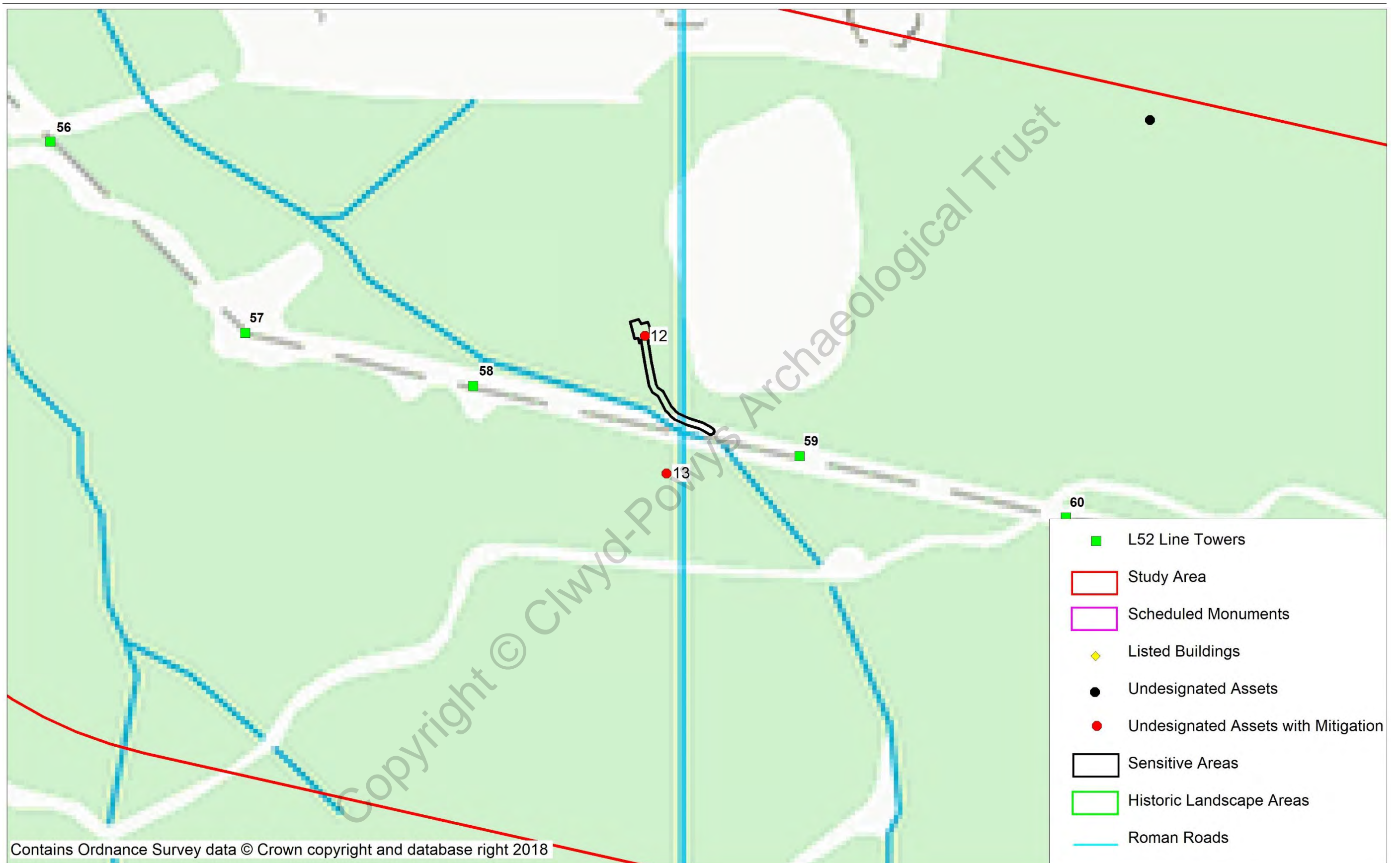


Fig. 10 Potential impacts to heritage assets between Towers L52 58 and 59

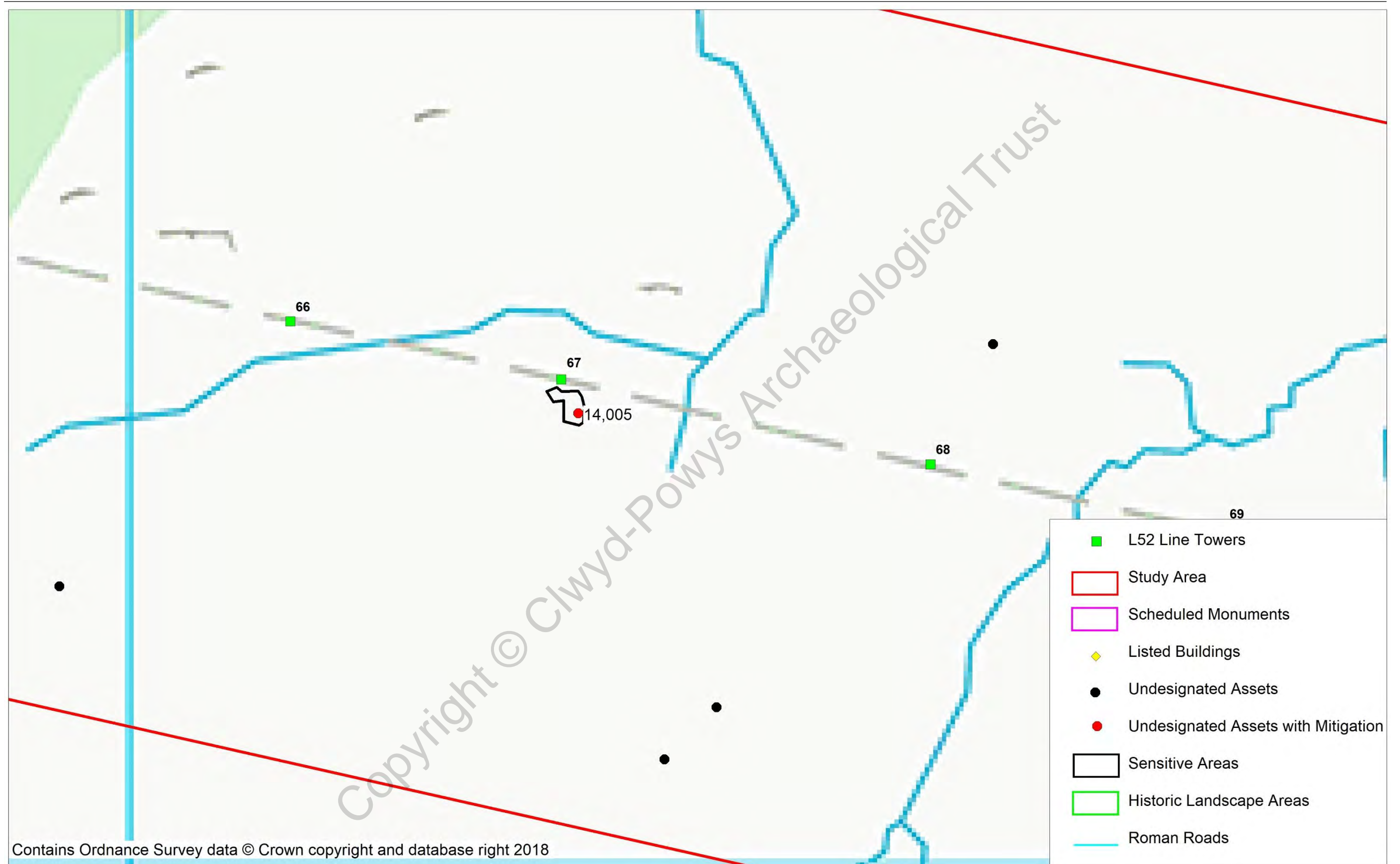


Fig. 11 Potential impacts to heritage asset at Tower 67

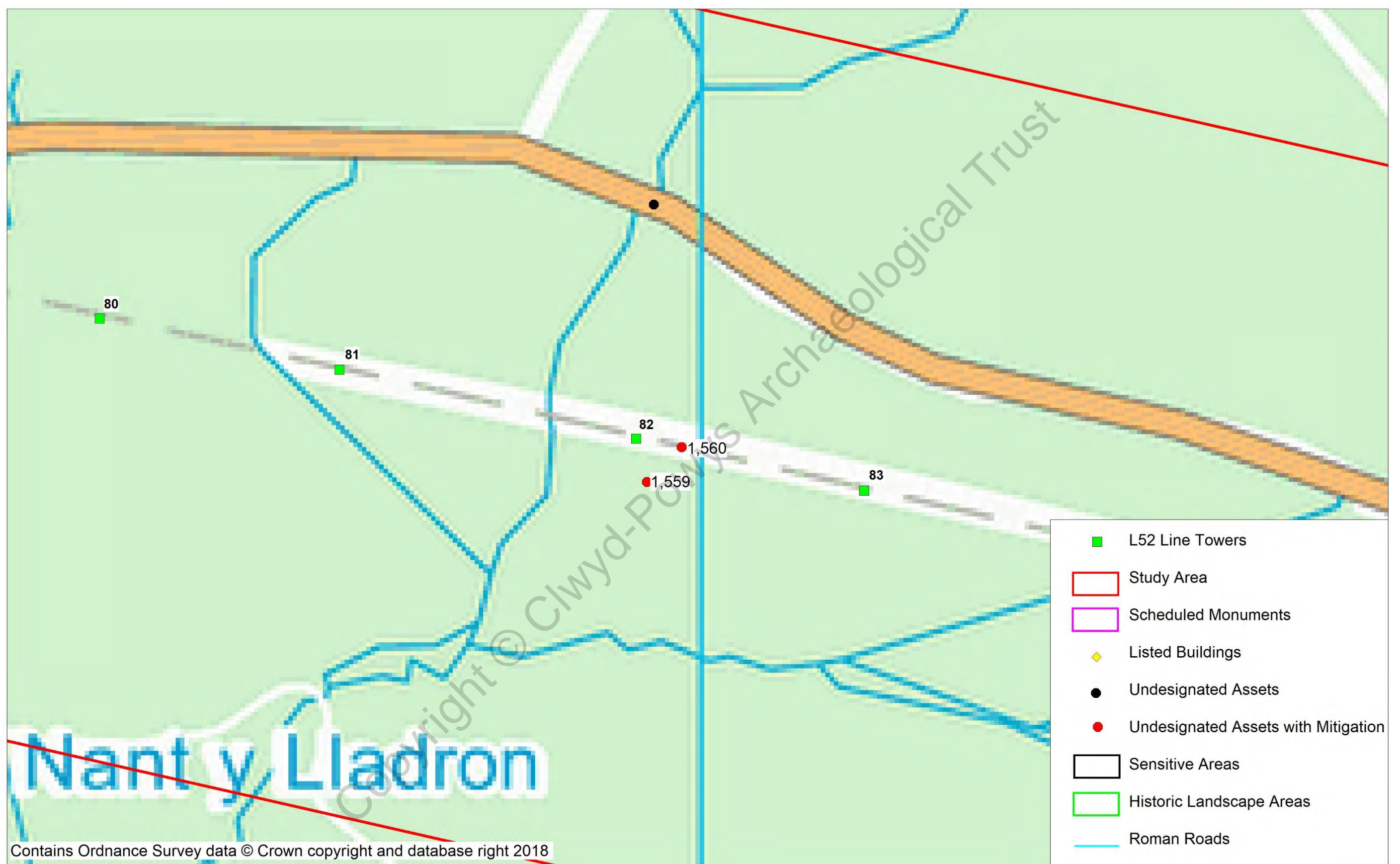


Fig. 12 Potential impacts to heritage assets between Towers 82 and 83

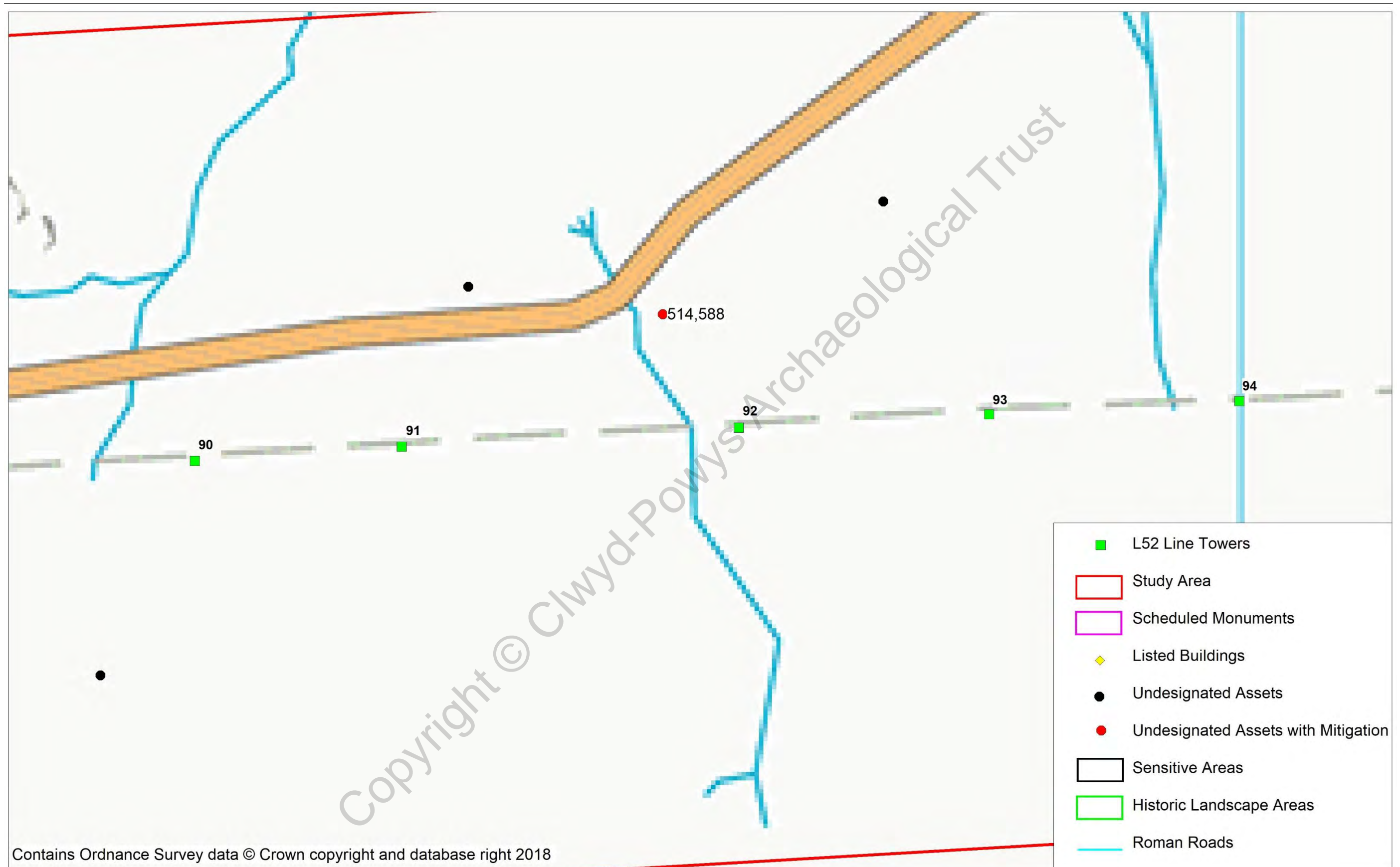


Fig. 13 Potential impacts to heritage assets between Towers 91 and 92

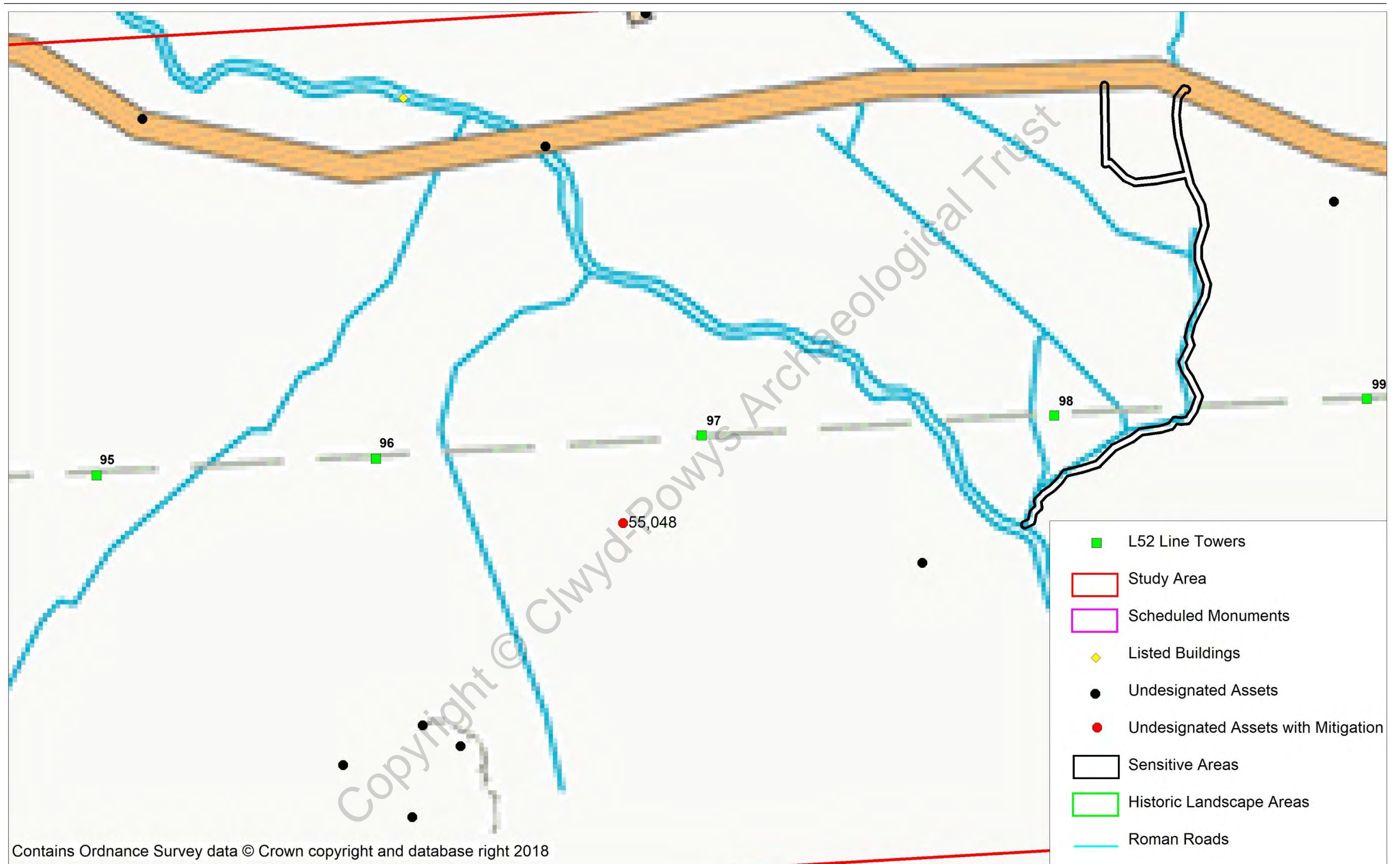


Fig. 14 Potential impacts to heritage assets between Towers 96 and 97

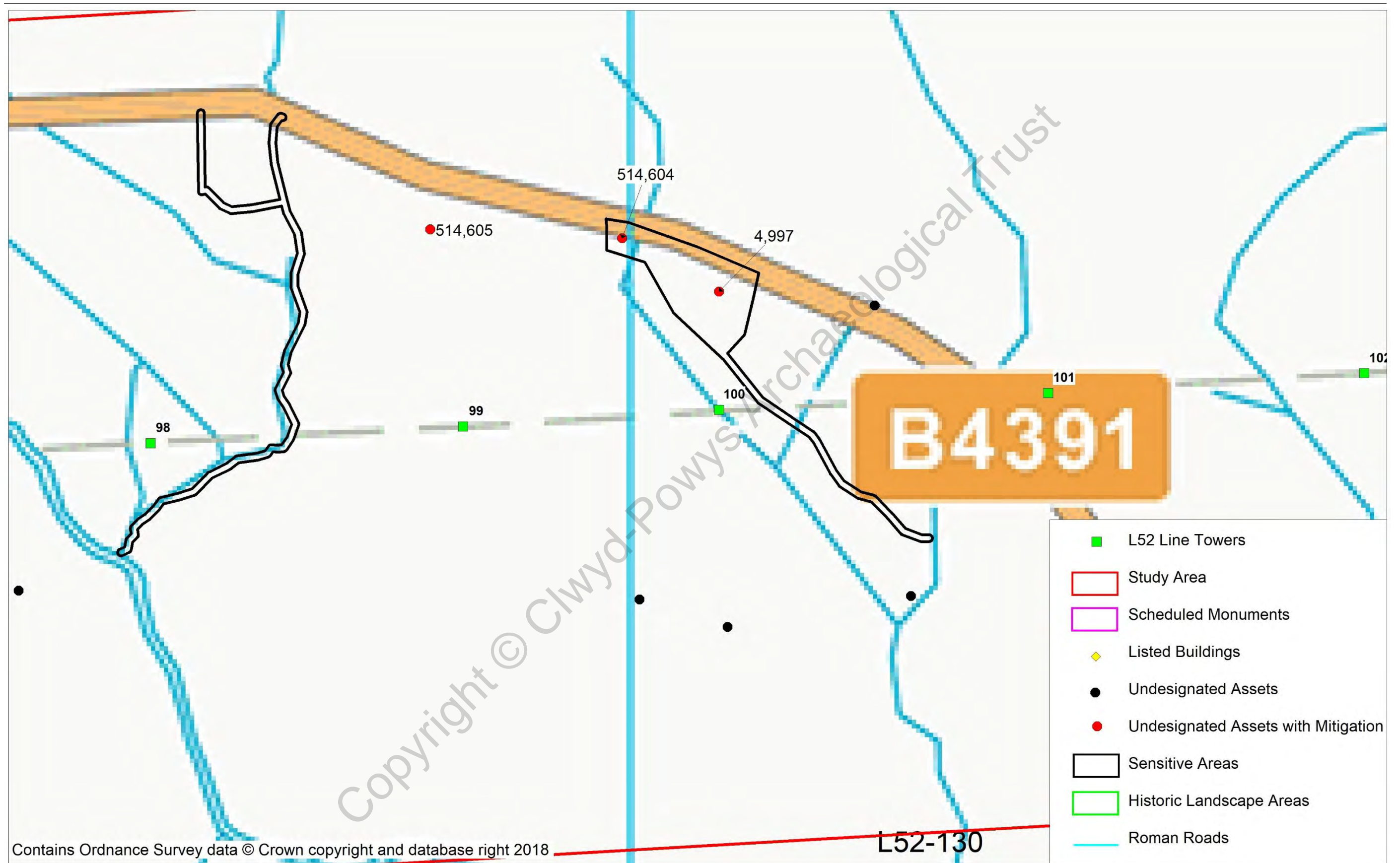


Fig. 15 Potential impacts to heritage assets between Towers 98 and 101

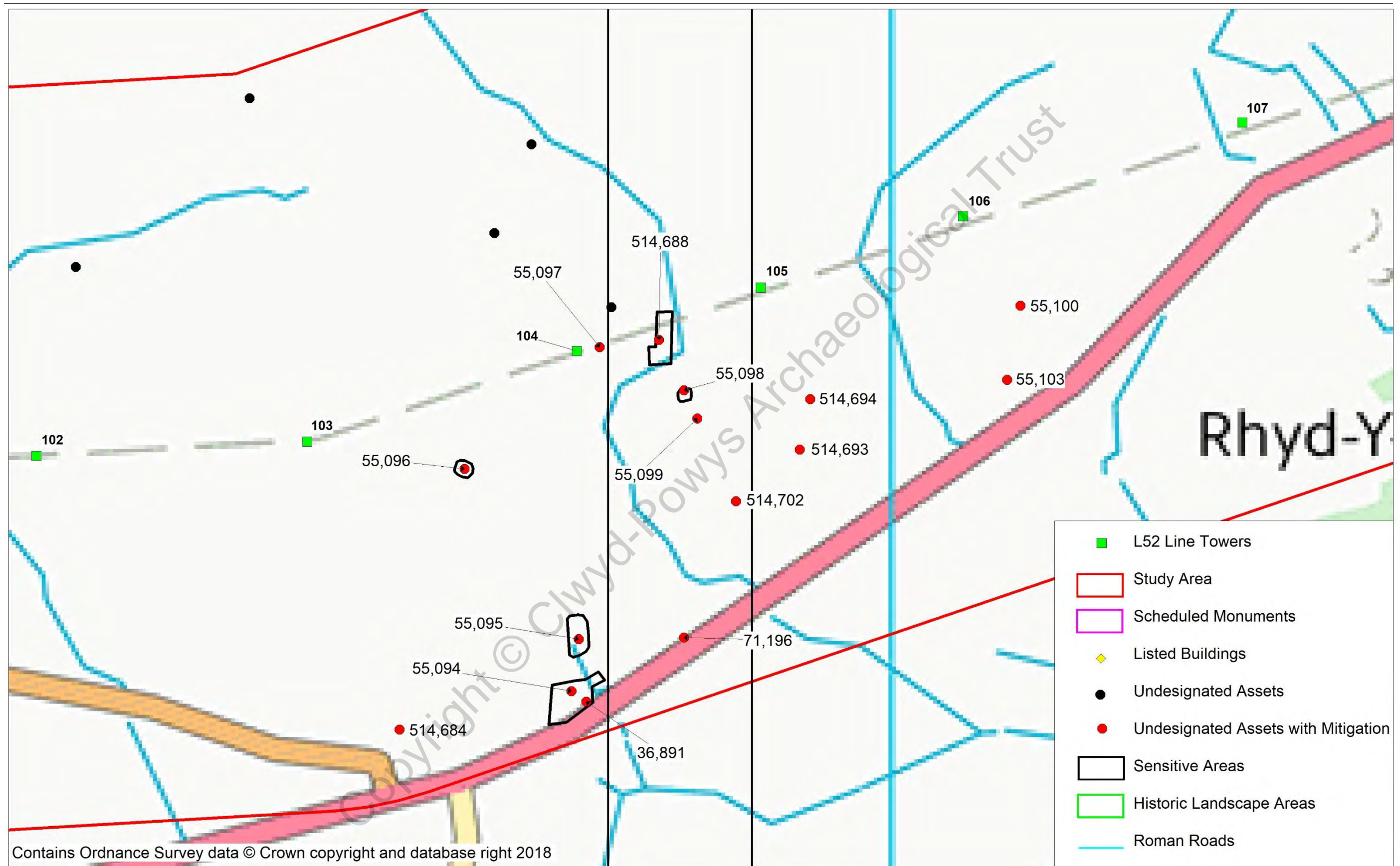
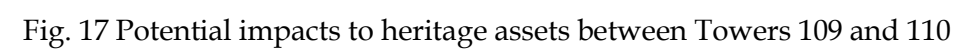


Fig. 16 Potential impacts to heritage assets between Towers 102 and 107



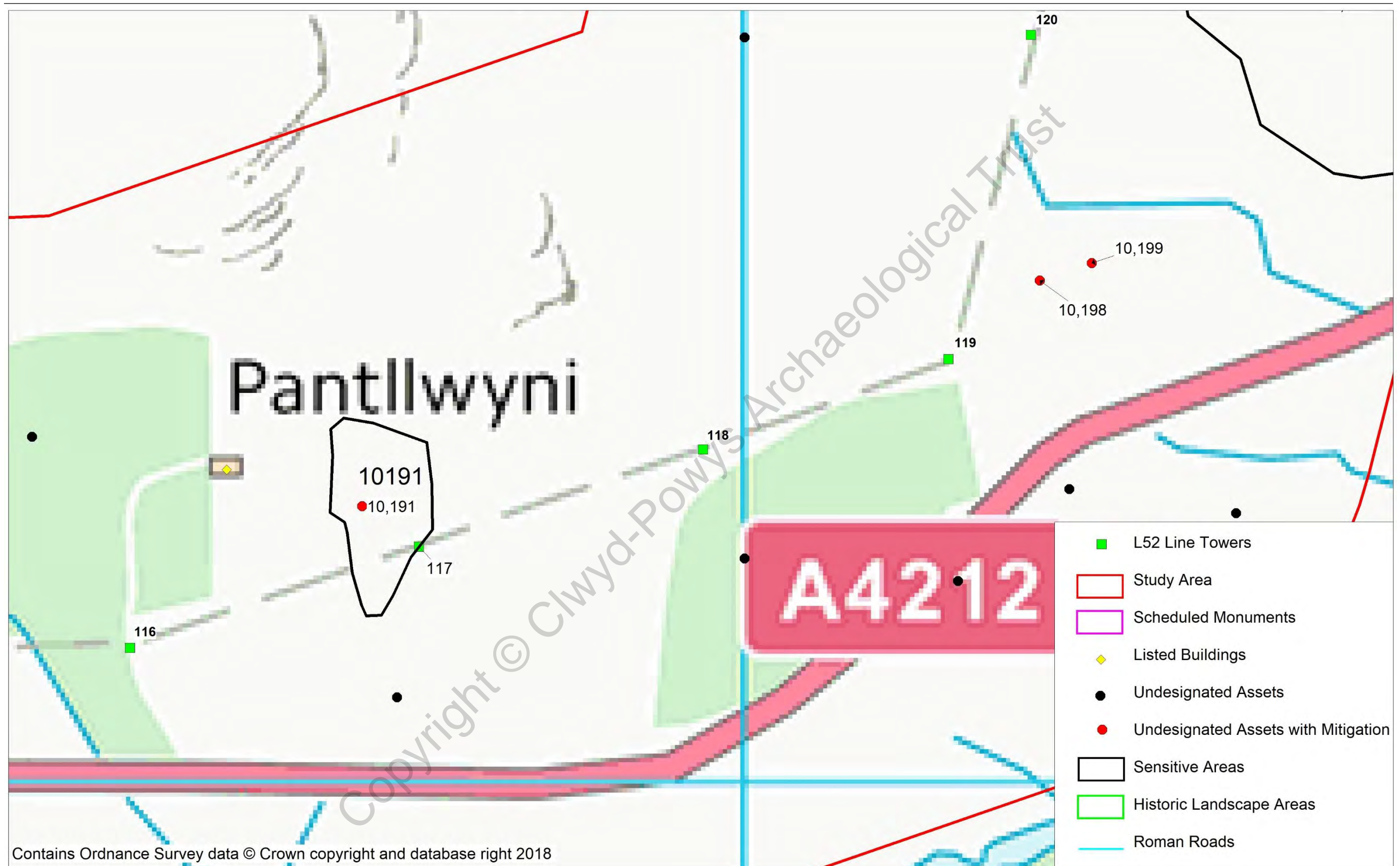


Fig. 18 Potential impacts to heritage assets between Towers 116 and 120

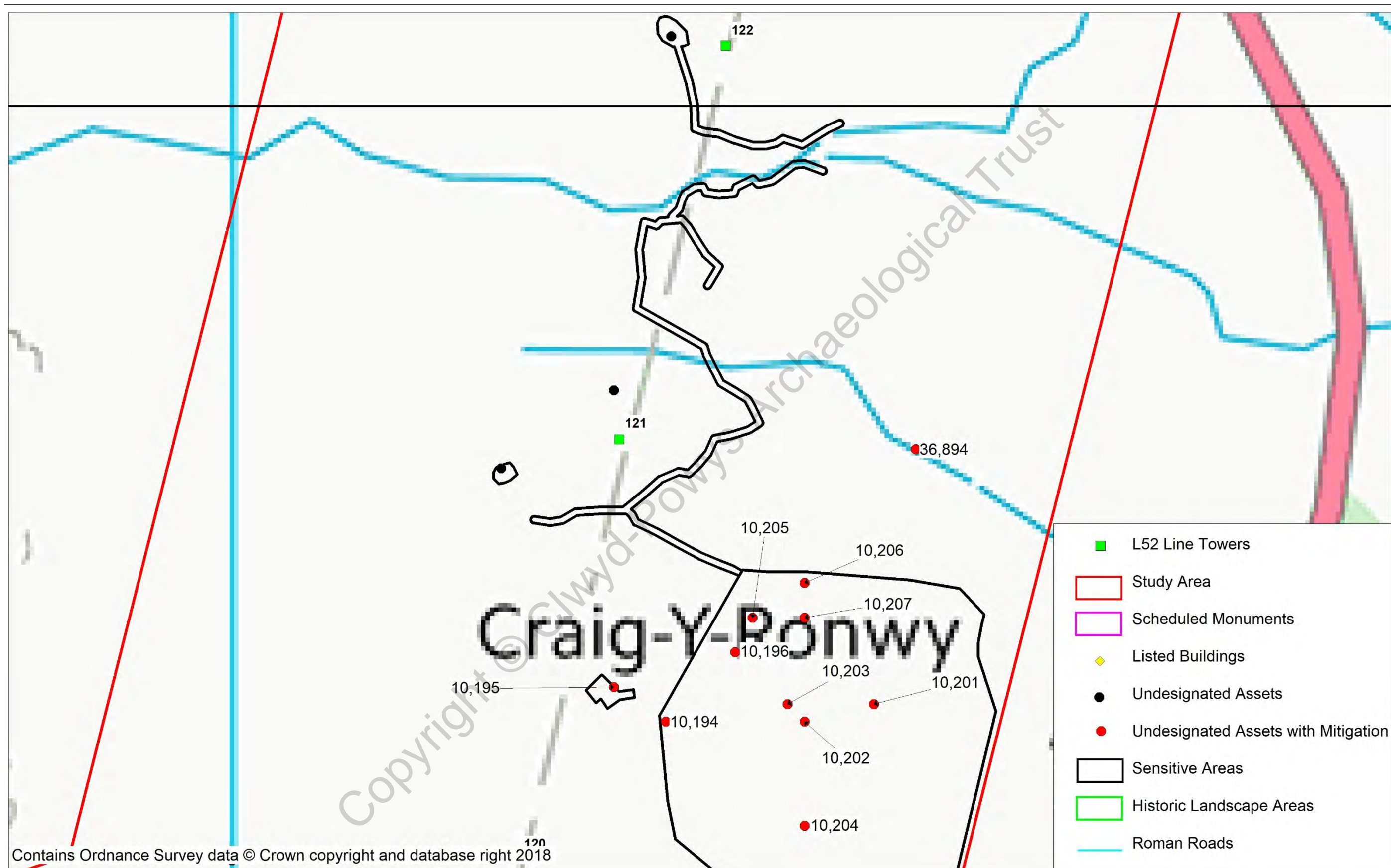


Fig. 19 Potential impacts to heritage assets between Towers 120 and 122

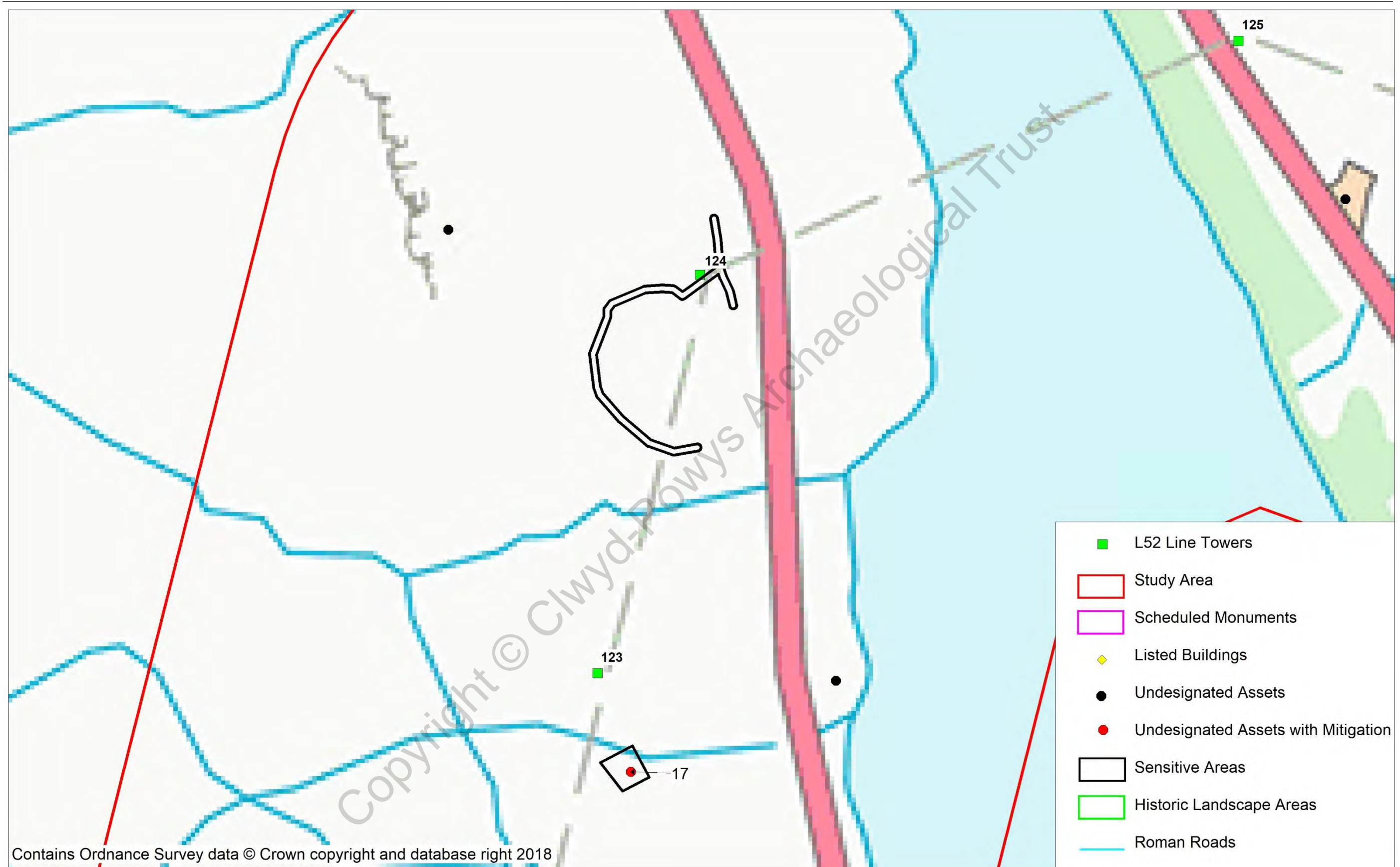


Fig. 20 Potential impacts to heritage assets between Towers 123 and 125

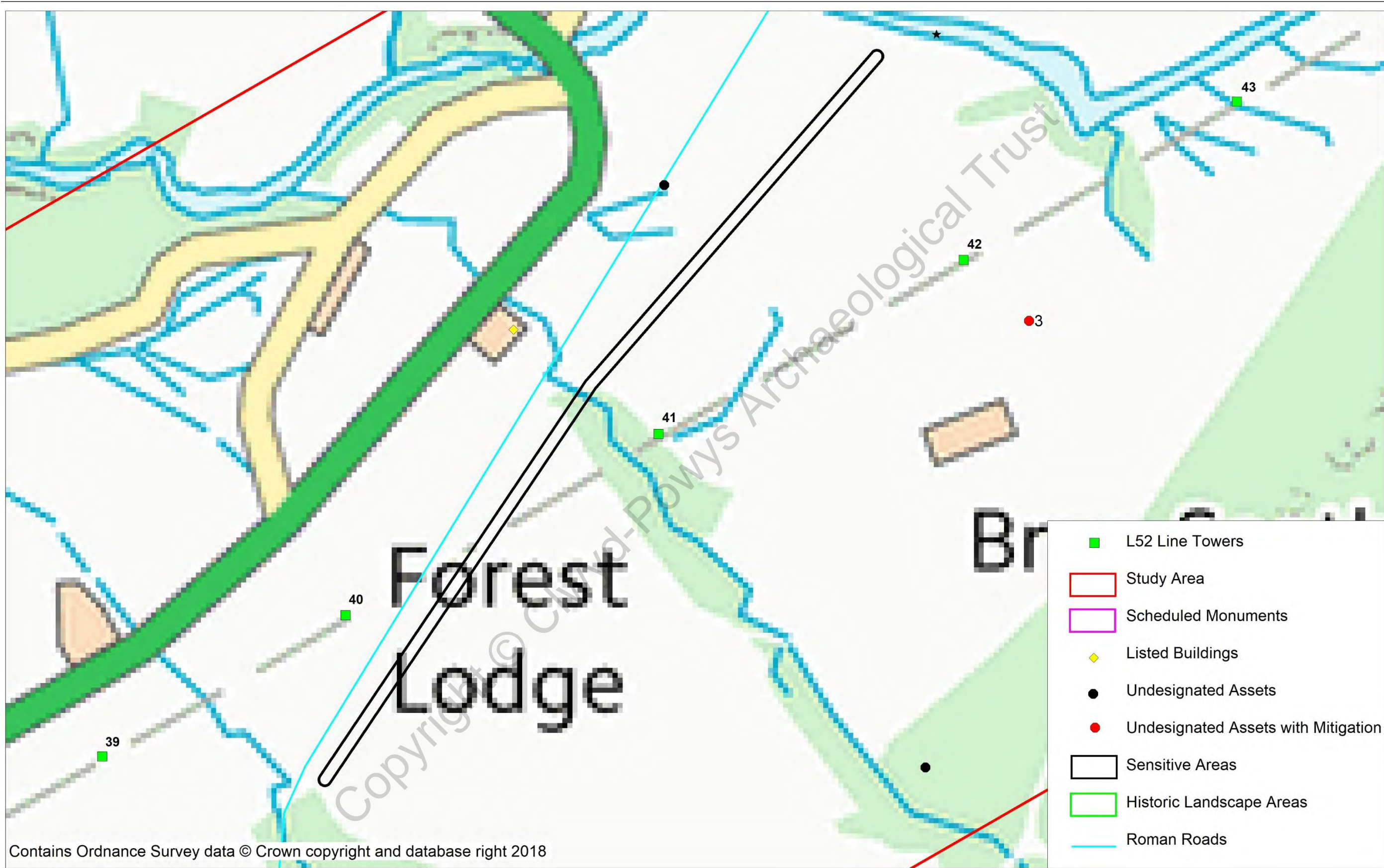


Fig. 21 Potential impacts to Roman Road (PRN17674) between Towers 39 and 43