

Appendix 8.12

Arboriculture Survey Report 2014

**ABERGELLI POWER PROJECT
BS5837 ARBORICULTURE SURVEY
REPORT**

Abergelli Power Ltd

Applicant Reference: 287521A

PINS Reference: EN010069

Regulation: EIAR & r5(2)(a)

Abergelli Power Project
BS5837 Arboriculture Survey
Report

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1 INTRODUCTION

1.1 Overview

1.1.1 Parsons Brinckerhoff has been commissioned by Abergelli Power Ltd (ALP) to undertake a BS5837: 2012 “Trees in Relation to Design Demolition and Construction – recommendations” (BS5837) arboriculture survey in relation to the proposed 299MW gas-fired ‘peaking’ plant at Abergelli Farm Felindre, near Swansea (hereafter referred to as ‘the Project’).

1.2 Context

1.2.1 The Arboriculture Survey Report is required in support of an application for Development Consent as an Appendix to the Environmental Statement (ES) for the Project.

1.3 Purpose

1.3.1 The purpose of this report is to assess all qualifying trees, groups of trees, hedges and woodland (individuals with a stem diameter of at least 75mm measured at 1.5m above ground level) within the survey areas (identified as “project site” within the Tree Constraints Plan at appendix D) and those where the Root Protection Areas (RPA) may be affected by the Project as defined in BS5837

1.3.2 Parsons Brinckerhoff Ltd carried out the BS5837 Arboriculture Survey between 17th and 19th September 2014 and on 18th November 2014.

1.4 Planning and Legislative Context

1.4.1 This report has been carried out in accordance with the most recently published (30th April 2012) BS5837 which updates the previous BS5837 of 2005 by:

- Taking account of current practice regarding planning for the management, protection and planting of trees in the vicinity of structures, and for the protection of structures near trees;
- Updating the guidance in relation to building regulations; and
- Recognising the contribution that trees make to climate change adaptation.

1.4.2 Trees are a material consideration in the UK planning system, and existing trees are an important factor on construction sites, whether on or near the working areas. BS 5837 2012 Arboriculture reports are intended to assist decision-making, by ensuring consideration is given

to existing and proposed trees in the context of design, demolition and construction.

1.4.3 The primary source of protection afforded to trees is through the application of Tree Preservation Orders (TPO) as part of the Town and Country Planning (Tree Preservation) (England) Regulations 2012 which came into effect on April 6th 2012. There are two offences under this Act:

- in contravention of tree preservation regulations: cut down, uproot or wilfully destroy a protected tree; or to damage, top or lop it wilfully in such a manner as to be likely to destroy it; or to cause and permit any such activity; and
- to carry out any other works in contravention of tree preservation regulations.

1.4.4 It has been confirmed that there are no tree preservation orders with the survey site.

1.4.5 In recent years greater weight has been added to the protection of ancient and veteran trees within our landscape. This is reflected in the recent update to Planning Policy Wales which states “Ancient and Semi Natural woodlands are irreplaceable habitats of high biodiversity value which should be protected from development that would result in significant damage” (paragraph 5.2.9).

1.4.6 The Forestry Act of 1967 requires any person wishing to fell trees to apply for a felling licence before those works are undertaken. There are many exemptions to this requirement that often reflect good forest and woodland management and other exemptions that may be reasonably expected such as dead, diseased or dangerous trees. Exemptions are also afforded to works required to facilitate planning consent

2 METHODOLOGY

2.1 Survey

- 2.1.1 The trees on the survey site qualifying for survey were inspected and classified, by a competent arboriculture consultant with regard to BS5837. The trees were classified in accordance with BS5837: 2012 tree quality assessment categories A, B, C and U, as set out in Table 1 and 2 of the British Standard. Qualifying trees are defined as individual trees with a stem diameter of at least 75 mm measured at 1.5 m above ground level.
- 2.1.2 All trees within the survey site were inspected from ground level using the Visual Tree Assessment (VTA) method. VTA assessment is a non-invasive method for ascertaining the physiological and structural condition of trees. The method requires the use of a Thor 10 nylon acoustic mallet, and a wire probe.
- 2.1.3 The VTA was undertaken on the above ground portion of the trees. No aerial inspection, sampling, or excavations for the purpose of soil or root analysis were undertaken. Binoculars were used to inspect the upper parts of the tree canopy from ground level, if required.
- 2.1.4 To allow the assessment of trees on site to be completed in a practicable way and to best reflect the tree population on site, where trees formed groups either aerodynamically, through mutual support or by forming a screen or other such feature they have been recorded as such. This is a widely used method and is supported by Section 4.4.2.3 of BS 5837: 2012.

2.2 Survey Limitations

- 2.2.1 Trees are large dynamic organisms, influenced by a variety of environmental variables, whose health and condition can change rapidly. Due to the changeable nature of trees and other site and environmental considerations which may influence the trees, this report, and any recommendations made within it are valid for a period of 12 months from the date of the site survey (November 2014).
- 2.2.2 Although comments and recommendations on the safety of particular trees may have been made, this survey is not a tree hazard assessment and should not be used as such.
- 2.2.3 Any management recommendations have been made in accordance with BS 3998: 2010 "Tree Works – Recommendations" and industry best practice. Works have been recommended in accordance with any statutory obligations owed by the land owners or occupiers.

- 2.2.4 All areas have the potential to support protected species. This survey did not include an ecological survey of the vegetation and habitat areas.

3 RESULTS

3.1 Overview

- 3.1.1 None of the trees within the survey site were found to be of such poor condition that urgent remedial work was required.
- 3.1.2 The hedge recorded as part of this survey was not made the subject of detailed assessment for their importance in relation to the Hedgerow Regulations.

3.2 Site Context

- 3.2.1 Many of the trees within the survey site were of reasonable but not outstanding quality. Due to the relatively low hedges and open field systems mature trees are locally prominent in the landscape.
- 3.2.2 The following features were recorded during the survey and recorded in the Tree Survey Schedule in Appendix A and plotted on the Tree Constraints Plan in Appendix D:
- Woodlands 1 and 2;
 - Groups 1 to 6;
 - Hedge 1; and
 - Trees 922 to 924.
- 3.2.3 Where access was not possible, trees were listed as A to C. These trees were not tagged and stem diameters were estimated using neighbouring trees as a reference.

3.3 Notable Features

- 3.3.1 Woodland 1 is designated as Ancient Woodland and a Site of Importance for Nature Conservation (SINC). It is relatively open woodland with birch as the dominant species in most areas. Many of the birch trees are in full maturity and will start to decline over the next 20 to 30 years. This is due to the fungal pathogen *Piptoporus betulinus* (birch strop fungi) which is dormant in birch trees for most of their life becoming active when the tree suffers a wound or bark lesion. The fruiting body of this fungi is clearly visible on many of the birch within this woodland. It is important to note that the decline of the birch within the woodland is not a sign of ill health or poor quality within the woodland. The decline of the birch will make way for the oak and ash within the woodland to succeed and form woodland with greater longevity.

- 3.3.2 Woodland 2 to the south of the National Grid Access Road is designated as Ancient Woodland and a SINC. However, it is of relatively low quality with the oldest individuals within the woodland being no more than 80 or 90 years old and the majority being under 50 years old. The woodland would benefit from management and creation of a more structured woodland edge.
- 3.3.3 The trees to the north of the National Grid Access Road at this location (within Group 1) are also located within Ancient Woodland and a SINC. They are of greater quality individually than those within the Woodland 2 and when considered as parts of the hedge form a linear feature providing connectivity east to west. The existing National Grid Access Road extends in places to almost 2 m under the saplings, bramble and leaf litter that has accumulated at the edge of the clear area.
- 3.3.4 Many of the individual trees on site such as those within groups 5 and 6 have grown from former hedge lines or are formed from outgrown hedge trees. Browsing by horses has caused bark damage in some areas.
- 3.3.5 Groups 3, 4 and 6 will require pruning and in some cases minor felling to allow construction traffic pass safely without causing damage to the vehicles or vegetation. Pruning should be carried out in accordance with Section 154 of the Highway Act 1980 to a height of 5.2m above the carriage way. These works are not considered to be a significant impact.

4 CONCLUSION

- 4.1.1 The presence of trees on the Project Site is not considered to be an obstruction to the Project. Careful consideration of trees at all stages of the development process will ensure that existing trees of high retention value are retained and protected throughout the Project. Suitable mitigation for any tree loss should be designed into the Project from the outset.
- 4.1.2 The Tree Constraints Plan (TCP), in Appendix D, will be used as a tool to inform the Project design, the practicalities of implementing the Project throughout construction and the final landscaping / mitigation planting.
- 4.1.3 Table 1 of BS 5837 (shown in Appendix B) defines Category C trees as “Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm”. With this point in mind, Category C trees can potentially be removed if suitable justification is given and appropriate mitigation provided.
- 4.1.4 British Standard 5837 provides a specification for protective fencing as shown in Appendix C. Although this fencing is perfectly suitable for individual significant trees it is not always practical for large areas of fencing. With this in mind it is recommended that for large areas fencing constructed of wooden post and netting with appropriate signage may be used.

APPENDIX A

TREE SURVEY SCHEDULE

APPENDIX B

BS5837 2012: TABLE 1

Table 1 Cascade chart for tree quality assessment

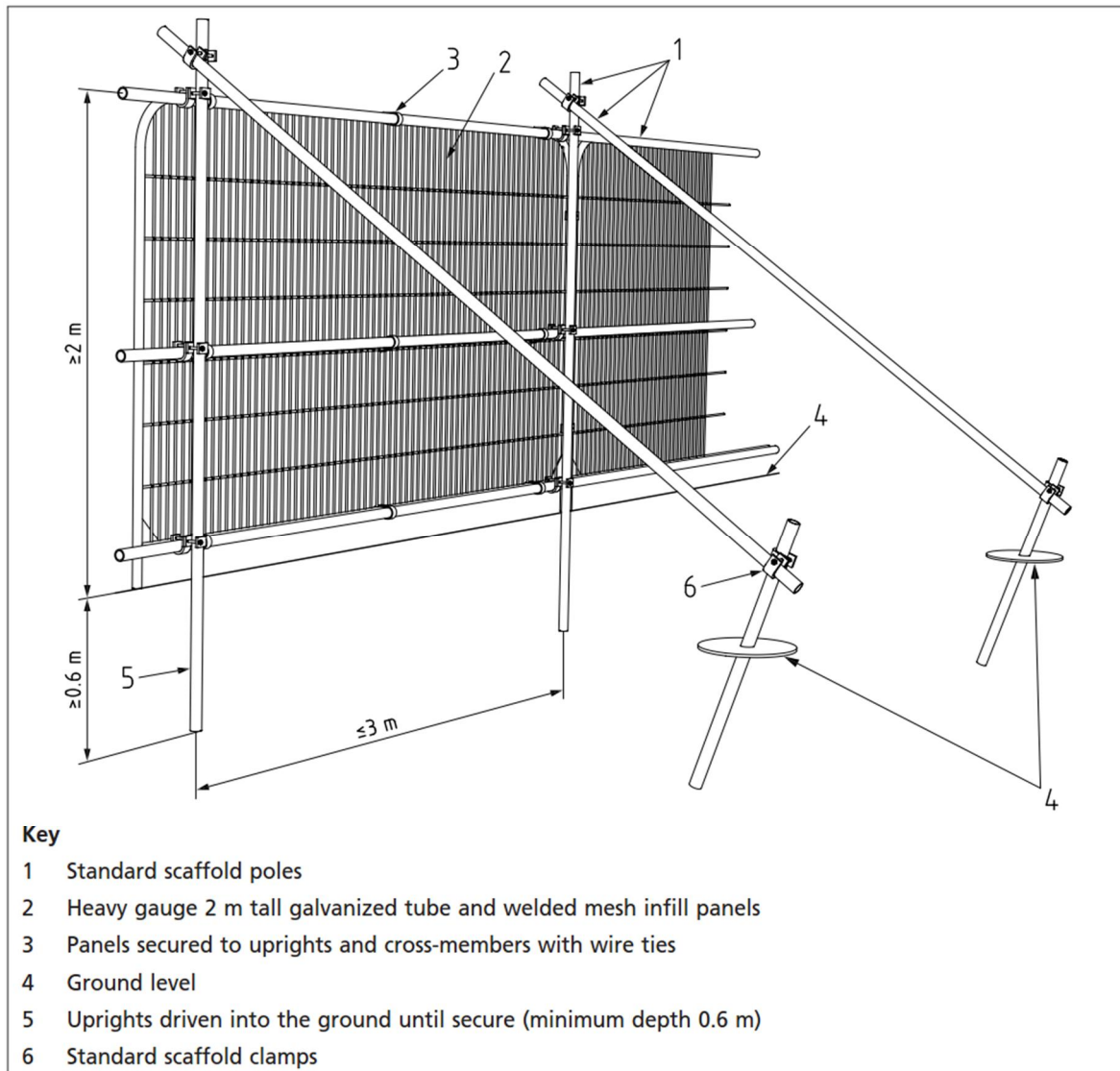
Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention (see Note)		
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>	See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities
		3 Mainly cultural values, including conservation
Trees to be considered for retention		
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	See Table 2

4.1.5

APPENDIX C

BS5837 2012: FIGURE 2

Figure 2 Default specification for protective barrier



APPENDIX D

BS5837 2012: TREE CONSTRAINTS PLAN

**APPENDIX A
TREE SURVEY SCHEDULE**

Tree	Species	Height	Diameter	RPA	N	S	E	W	1st Branch	Canopy Ht	Age	Years	Category	Observation /Recommendations
G1	Oak, Ash, Thorn, Hazel, Holly, Willow, Birch, Sycamore	15	250	3	>	>	>	>	0	0	Mature	40+	B2	Access track to sub station through group, Occasional Buddleia, reasonable quality with good clearance over road.
W1	Birch, Oak, Ash,	15	400	4.8	>	>	>	>	2	20	Mature	40+	B2	Reasonably open woodland with predominantly Birch. Most trees at 4m apart. Some evidence of burrowing animals.
G2	Oak, Willow, Ash, Thorn	10	200	2.4	>	>	>	>	0	0	Mature	40+	B2	Predominantly hedge with elements of a scrubby group to the West.
G3	Oak, Ash Sycamore, Hazel, Thorn	20	500	6	>	>	>	>	0	0	Mature	40+	C2	This group consist of various mature trees adjacent to the existing access track. The trees are of average quality individually but are more significant in their amenity value to the local setting. No obvious sign of significant defect was noted at the time of survey but there was some evidence of browsing by horses. several Ash and Oak and
G4	Oak, Thorn, Willow,	12	300	3.6	>	>	>	>	0	0	Mature	40+	B2	Group of relatively minor trees and scrub bordering the existing access track. The loss of these trees would not be considered significant.
G5	Oak, Birch, Holly, Rowan	15	300	3.6	>	>	>	>	0	3	Mature	40+	B2	Grown out hedge atop a stop bank, average quality. Gappy in places.
G6	Oak, Thorn, Ash	10	250	3	>	>	>	>	0	4	Mature	40+	B2	Roadside group either side of minor road. Trees atop earth bank adjoining arable land to the south and scrub to the north, no obvious sign of significant defect. Should not be effected by proposed Project.
T922	Oak	7	225	2.7	3	5	6	3	3	4	Mature	20+	C2	Dense ivy throughout low vigour, atop roadside bank.
T923	Oak	7	300	3.6	5	5	5	5	2	2	Mature	40+	B2	Tag on post No obvious sign of significant defect.
T924	Holly	8	200	2.4	5	6	3	3	0	0	Mature	40+	C2	Grown from former hedge planting, browsed at base, multi-stem tree.
G7	Oak, Sycamore, Ash	22	450	5.4	>	>	>	>	0	0	Mature	40+	B2	Remnant woodland edge. Non inspected in detail due to access issues at the time of survey. Provides partial screen between arable land and existing sub.
H1	Oak, Ash	15	400	4.8	>	>	>	>	0	0	Mature	40+	B2	Trees of various quality within field boundary, some browsing damage from horses. Stem diameter is average estimate only.
A	Oak	18	400	4.8	8	7	9	9	5	10	Mature	40+	B2	TREE IS 7M FROM BOUNDARY FENCE
B	PINE	20	500	6	5	7	4	3	6	15	Mature	40+	B2	TREE IS 5M FROM BOUNDARY FENCE
C	ASH	20	600	7.2	8	6	4	4	10	15	Early-Mature	40+	B2	TREE I2M FROM BOUNDARY FENCE
W2	Pine, Oak, Willow, Sycamore, Hazel, Birch	20	400	4.8	>	>	>	>	0		Early-Mature	40+	B2	Average but not outstanding, most growth roughly 50 years old with a few individuals reaching 90yrs.

APPENDIX B

BS5837 2012: TABLE 1

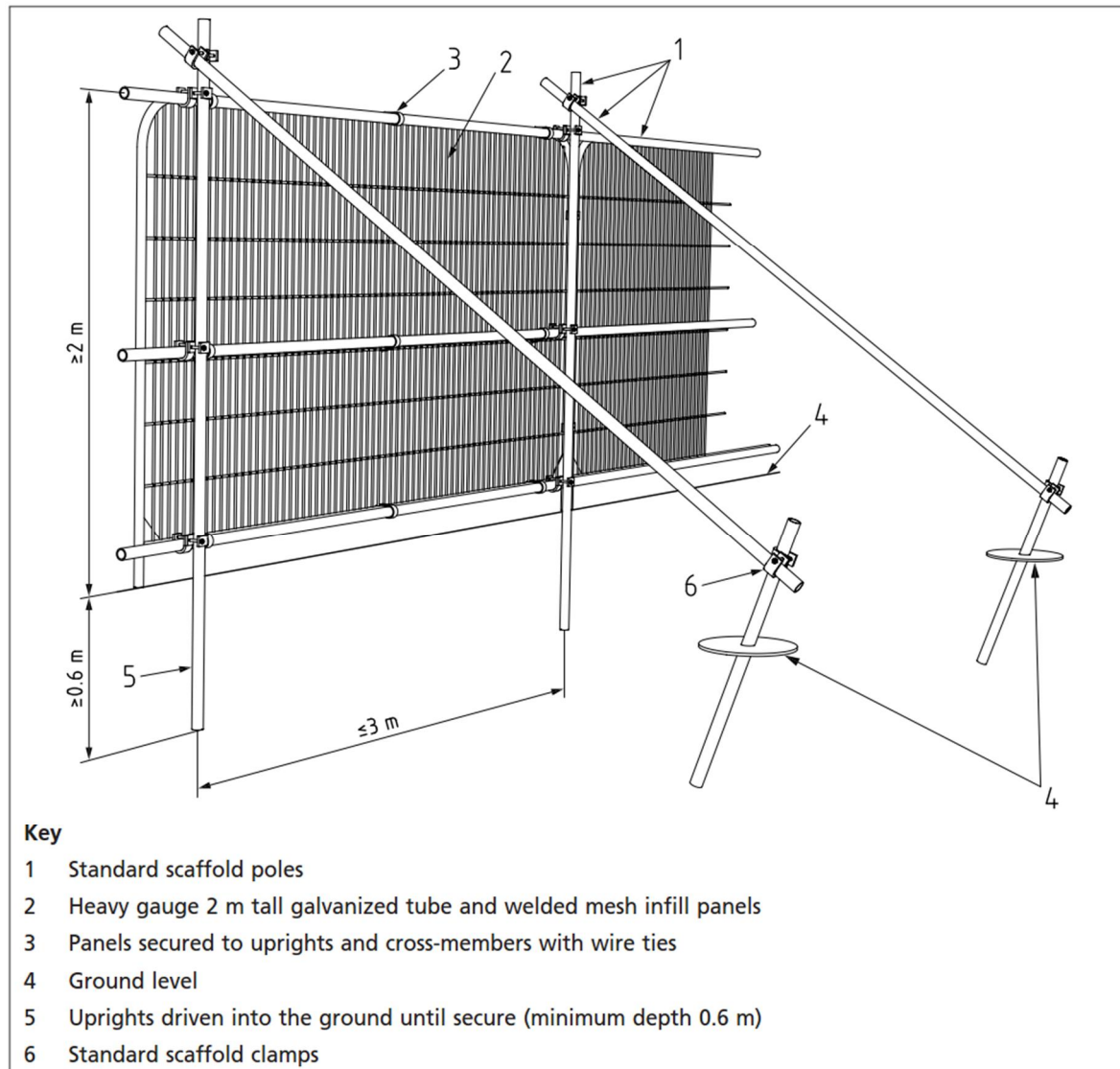
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Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

APPENDIX C

BS5837 2012: FIGURE 2

Figure 2 Default specification for protective barrier

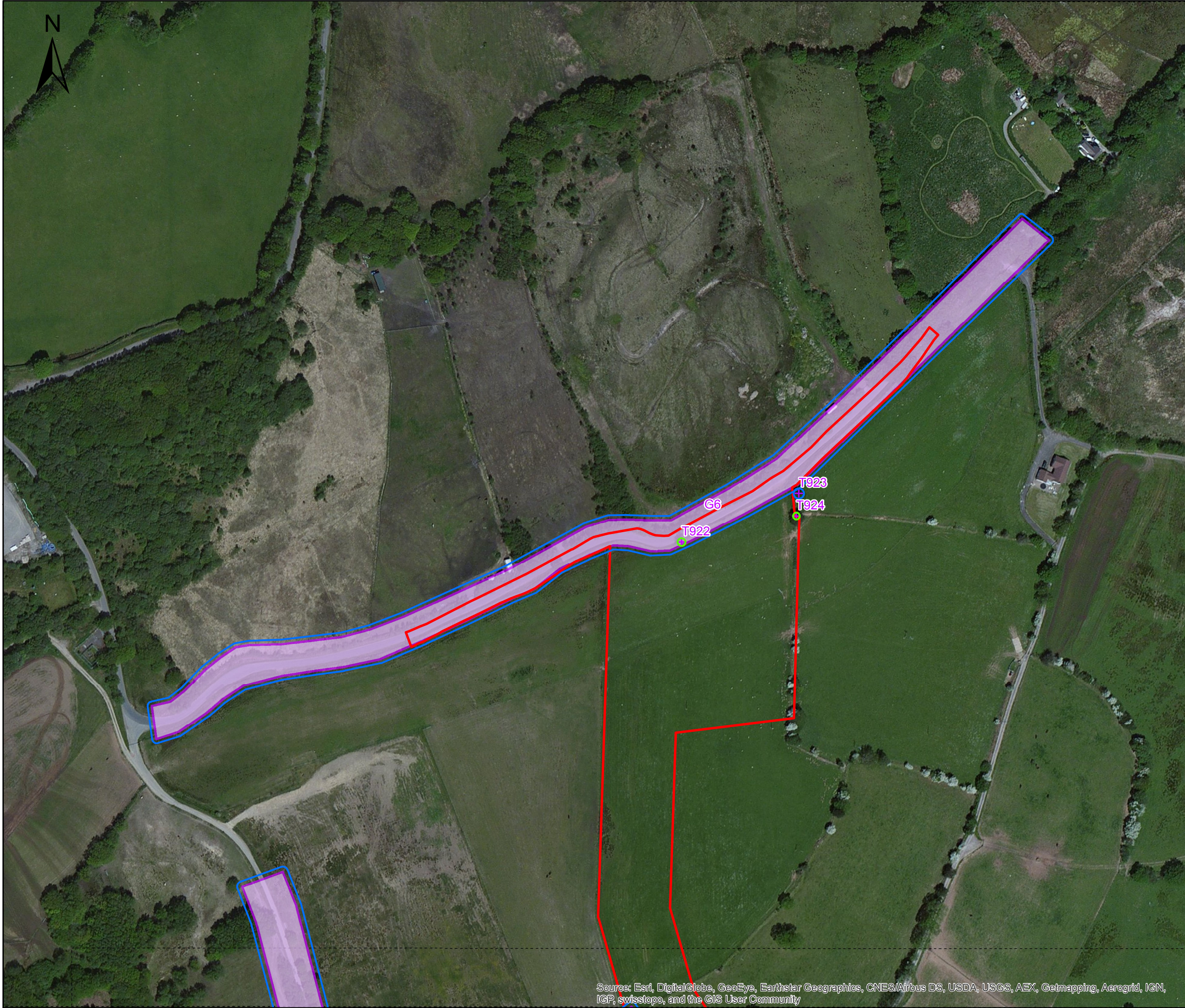


APPENDIX D

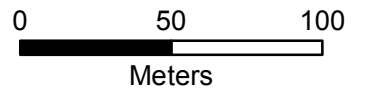
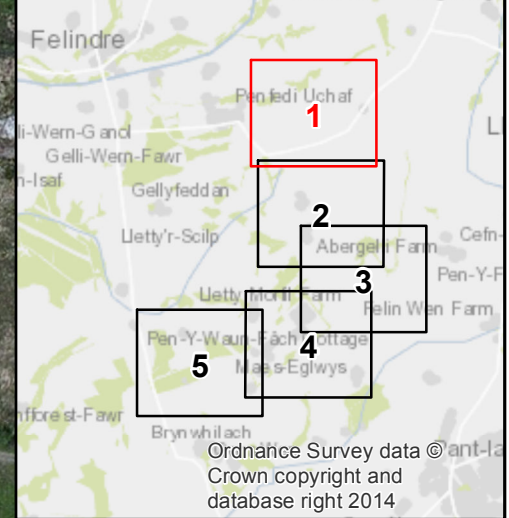
BS5837 2012: TREE CONSTRAINTS PLAN

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Plot Date: 18/03/2015



- Project Site
- Permanent Access Road Land-take
- Temporary Access Road Land-take
- Surveyed Tree
- Surveyed Hedge
- Surveyed Tree Area
- Root Protection Area Category Grading
 - B2
 - C2



Rev	Date	Description	By	Chk	App

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Client:
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Site/Project:
Abergelli Power Project

Title:
Tree Constraints Plan
Regulation 5(2)(l)
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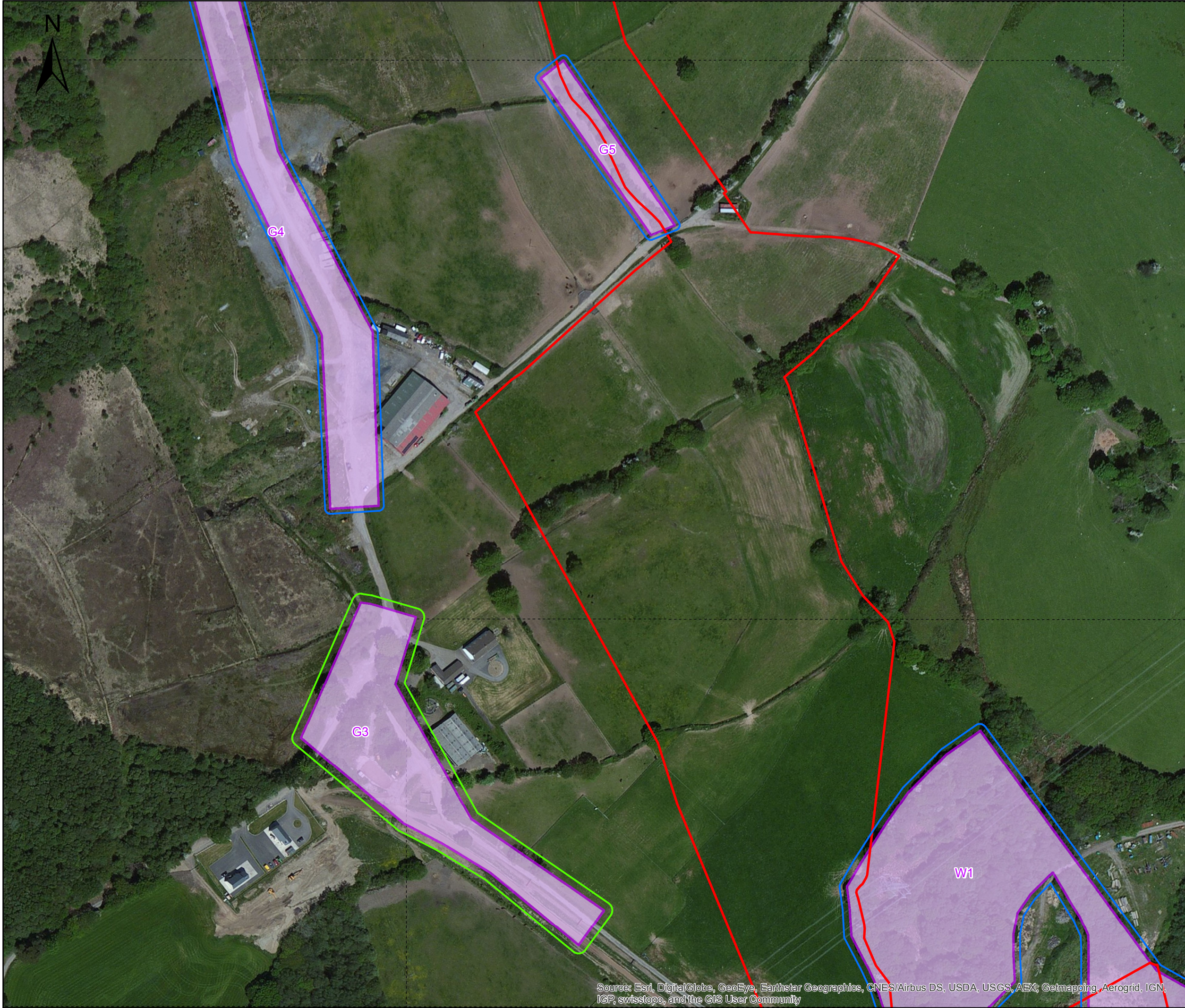
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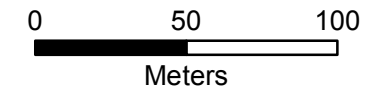
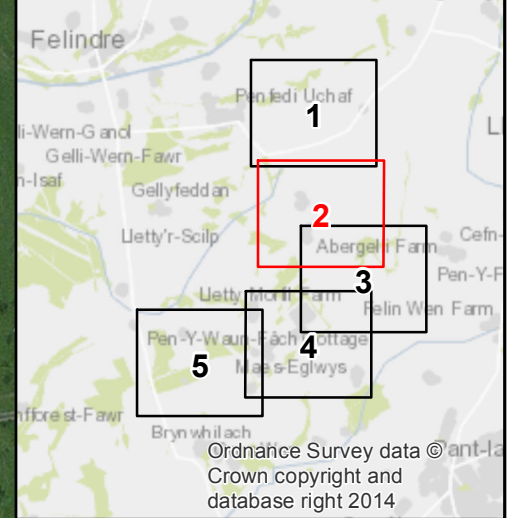
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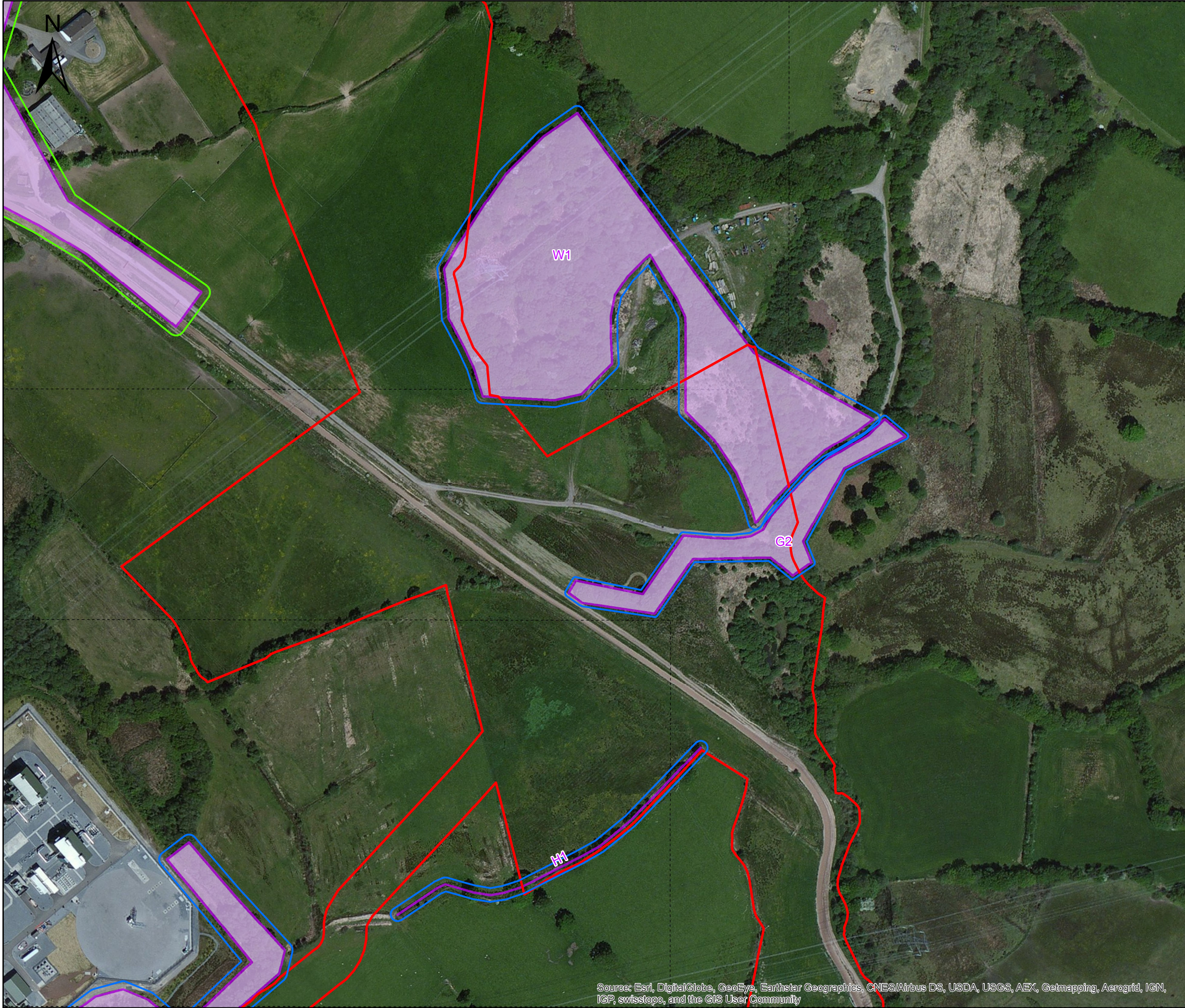
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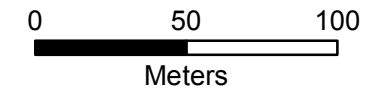
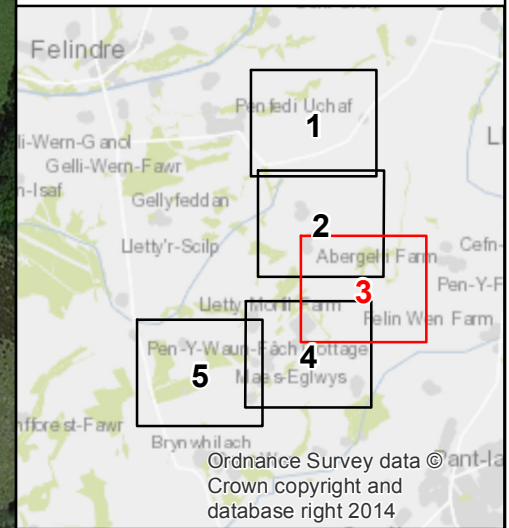
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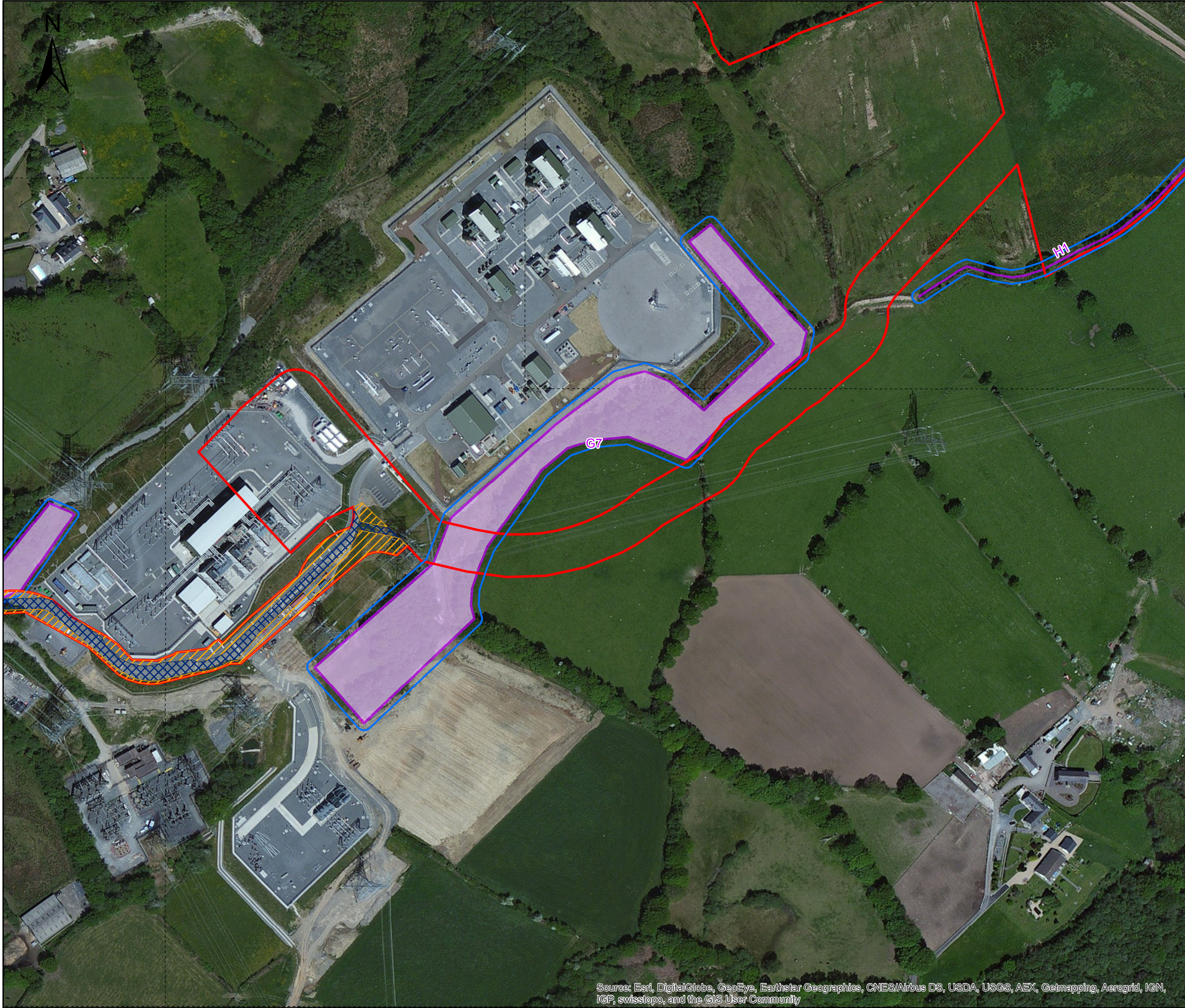
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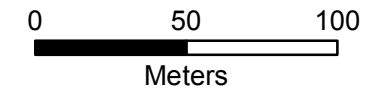
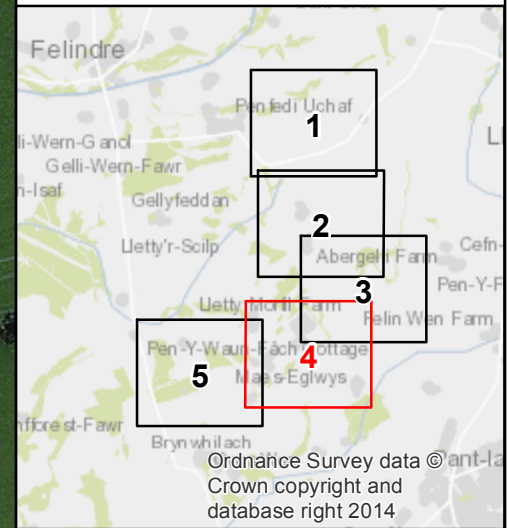
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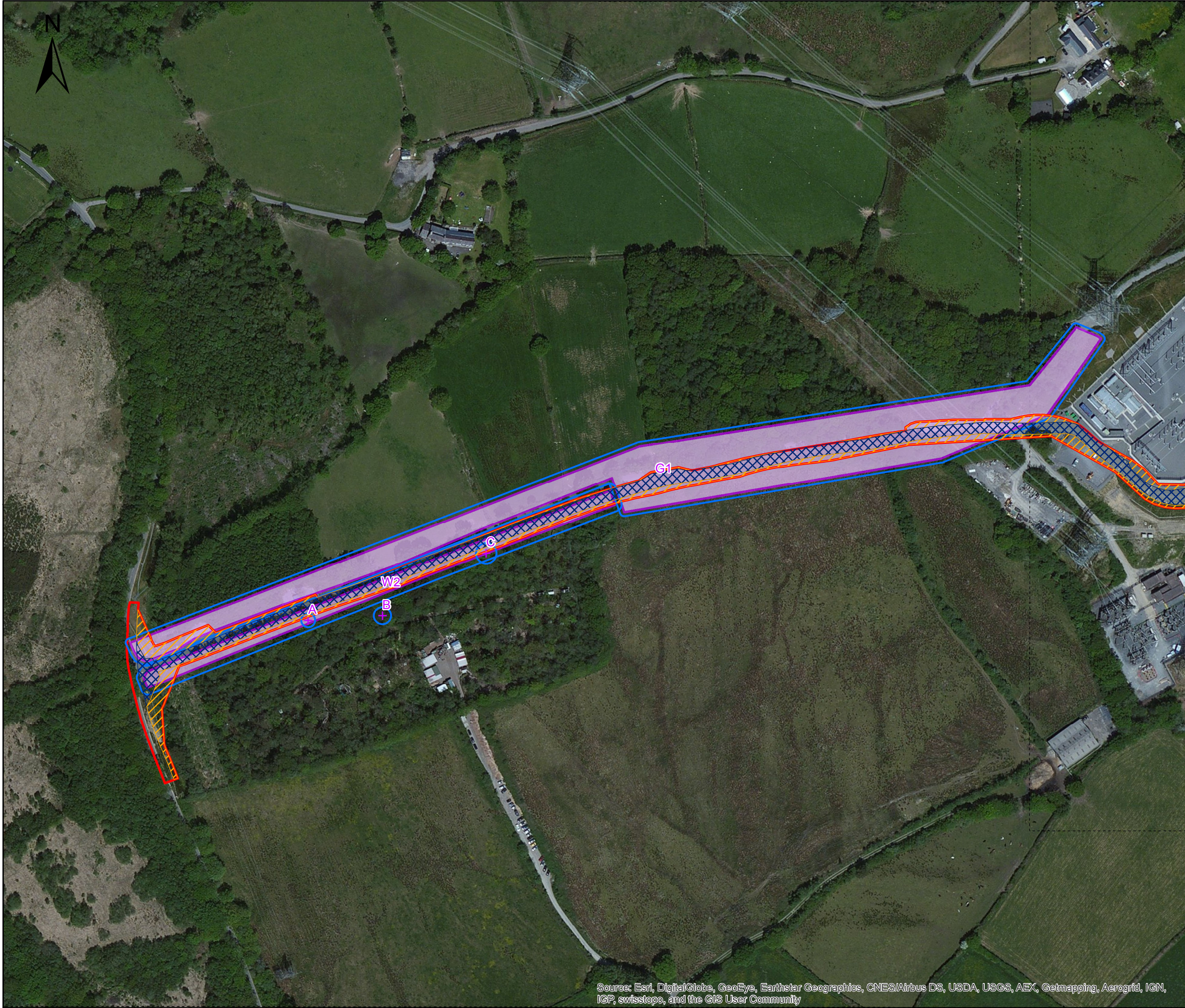
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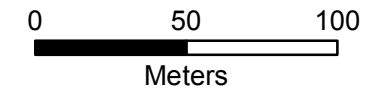
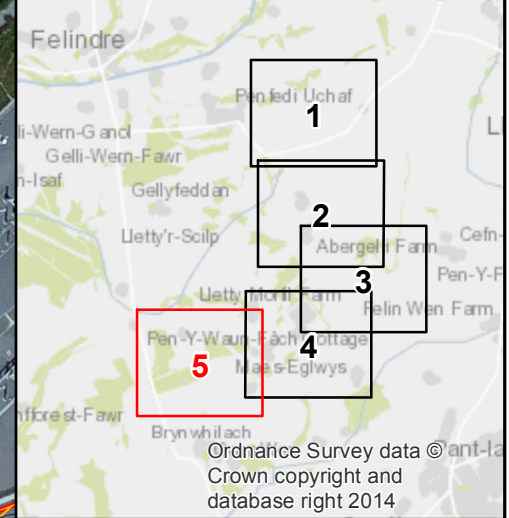
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- Surveyed Hedge
- Surveyed Tree Area
- Root Protection Area Category Grading
 - B2
 - C2



Rev	Date	Description	By	Chk	App

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Client:
Abergelli power

Site/Project:
Abergelli Power Project

Title:
Tree Constraints Plan
Regulation 5(2)(l)
Sheet 5 of 5

Drawn: CD	Checked: CV
Designed: CV	Approved: AH
Date: 12/03/2015	Scale: 1:2,500 A3 Sheet:
Project Number: 287521A	Drawing Number: Figure 8.7
	Revision: -

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community