

# Environmental Statement

## VOLUME II - Figures

for

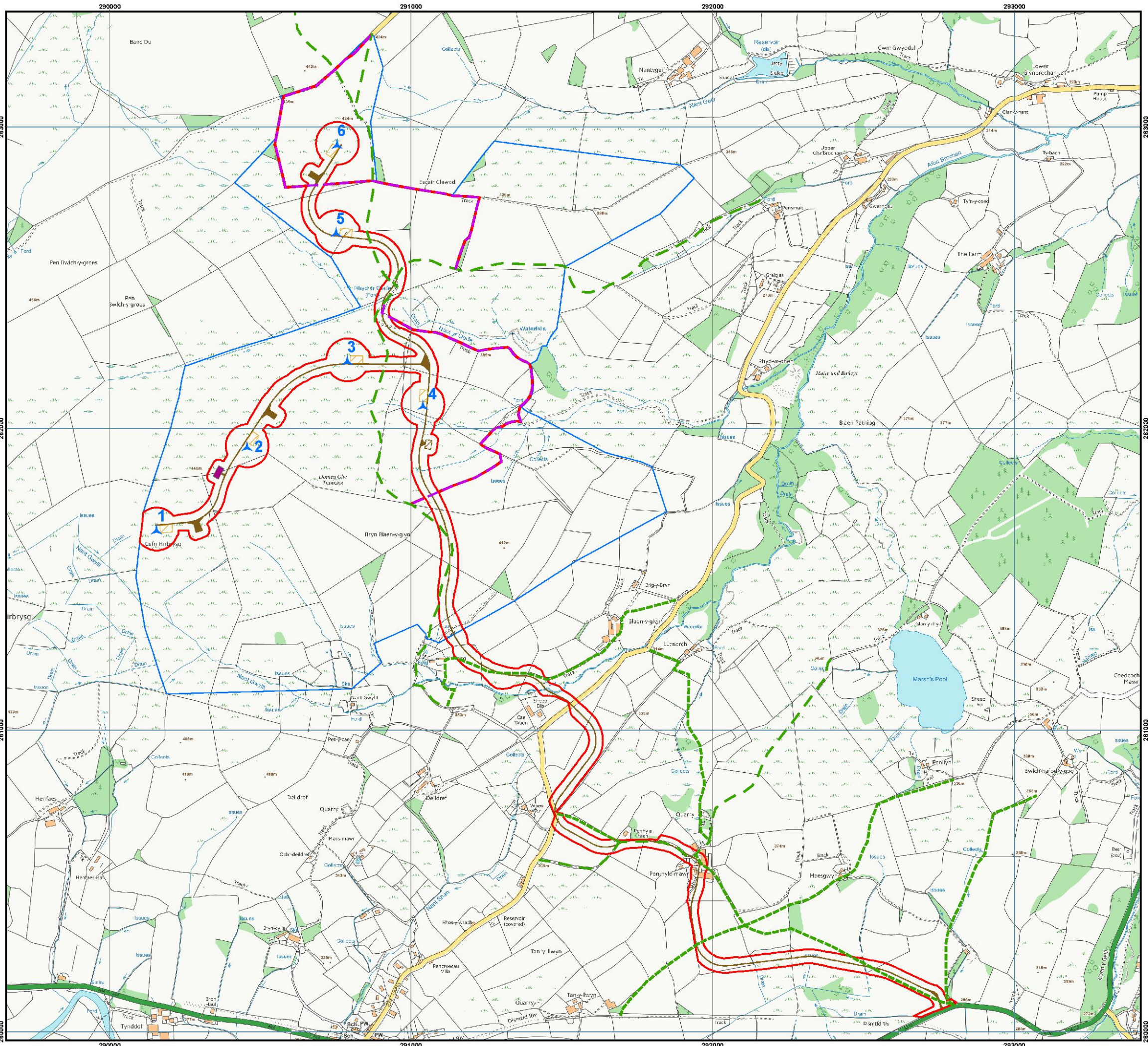
## Bryn Blaen Wind Farm

on behalf of

## Bryn Blaen Wind Farm Limited

13th October 2014

## **Figures 1.1 – 1.7 (Application Drawings)**



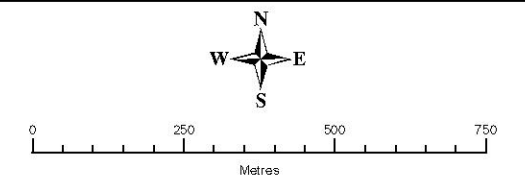
# Bryn Blaen Wind Farm Ltd.

Llangurig, Llanidloes, Powys

**Figure 1.1 Site Location Plan**

-  Ownership boundary
-  Application boundary
-  Turbine
-  Crane pad
-  Substation
-  Site compound
-  Access track
-  Recreational track
- Rublic rights of way**
-  Bridleway
-  Footpath

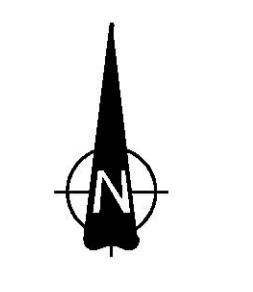
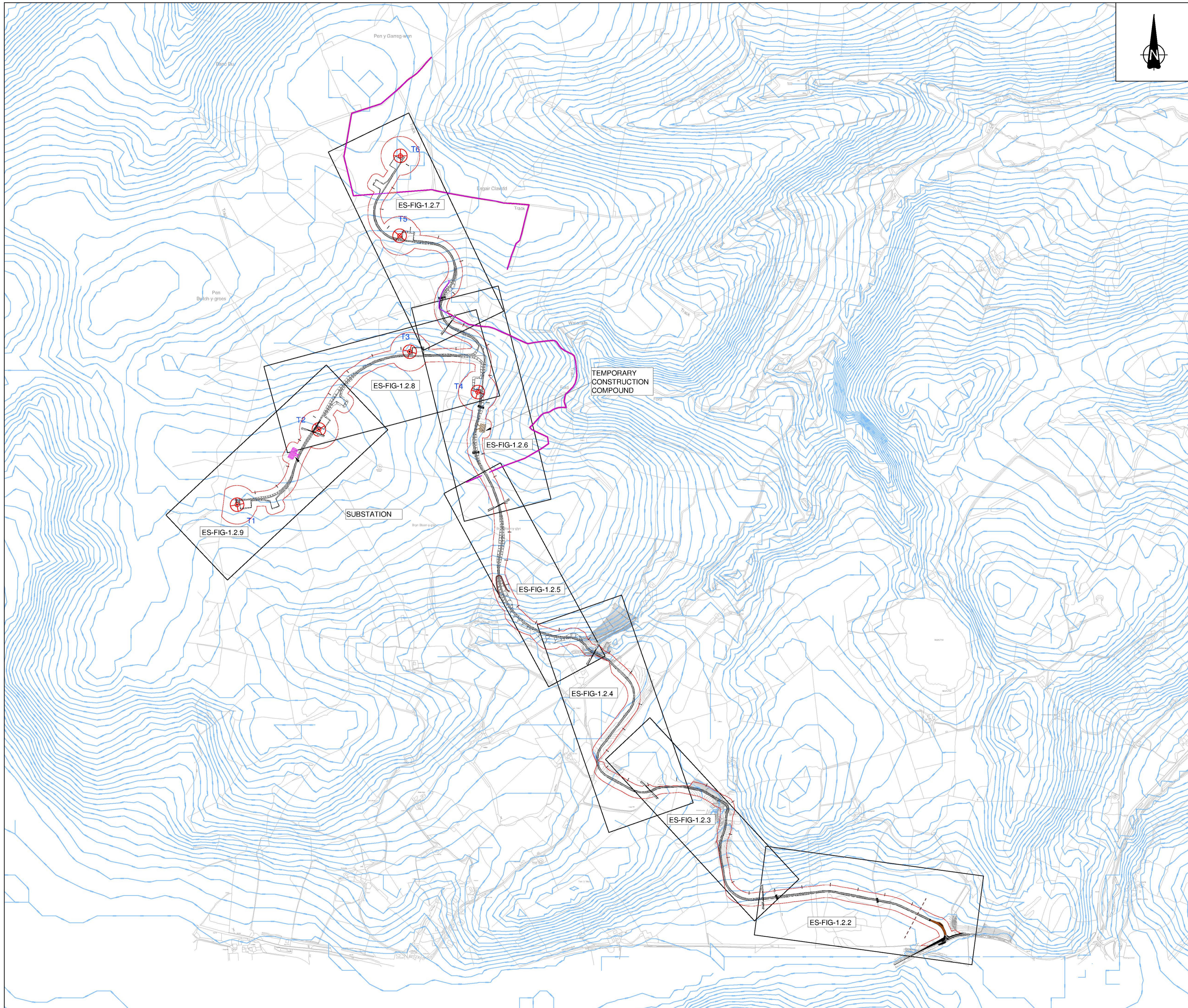
Drawn by Paul Taylor 15/09/2014, Verified by Aidan McLernon 15/09/2014



Scale 1:12,500 at A3 size  
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**LEGEND:**

- APPLICATION AREA
- T1 PROPOSED TURBINE
- PROPOSED ROUTE
- PROPOSED CULVERT
- PROPOSED RECREATIONAL TRACK
- PROPOSED COMPOUND
- PROPOSED SUBSTATION

VOLUME OF CUT: 33,351M<sup>3</sup>  
 VOLUME OF FILL: 41,985M<sup>3</sup>  
 VOLUME OF TOPSOIL: 10,475M<sup>2</sup> (150MM)

	CO ORDS		
	E	N	ELEVATION
TURBINE NO 1	290,156	281,667	438
TURBINE NO 2	290456	281,943	445
TURBINE NO 3	290,789	282,228	421
TURBINE NO 4	291,039	282,080	408
TURBINE NO 5	290,752	282,653	417
TURBINE NO 6	290,755	282,946	430

Revision	By	Checked	Approved	Date	Description
C	NG	GT	GT	18/09/14	General Revision
B	NG	GT	GT	01/09/14	General Revision
A	NG	GT	GT	21/08/14	Issued for Planning

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 NJORD ENERGY DEVELOPMENTS

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 Tel +44 (0)141 552 2000 Fax +44 (0)141 552 2525  
 www.halcrow.com

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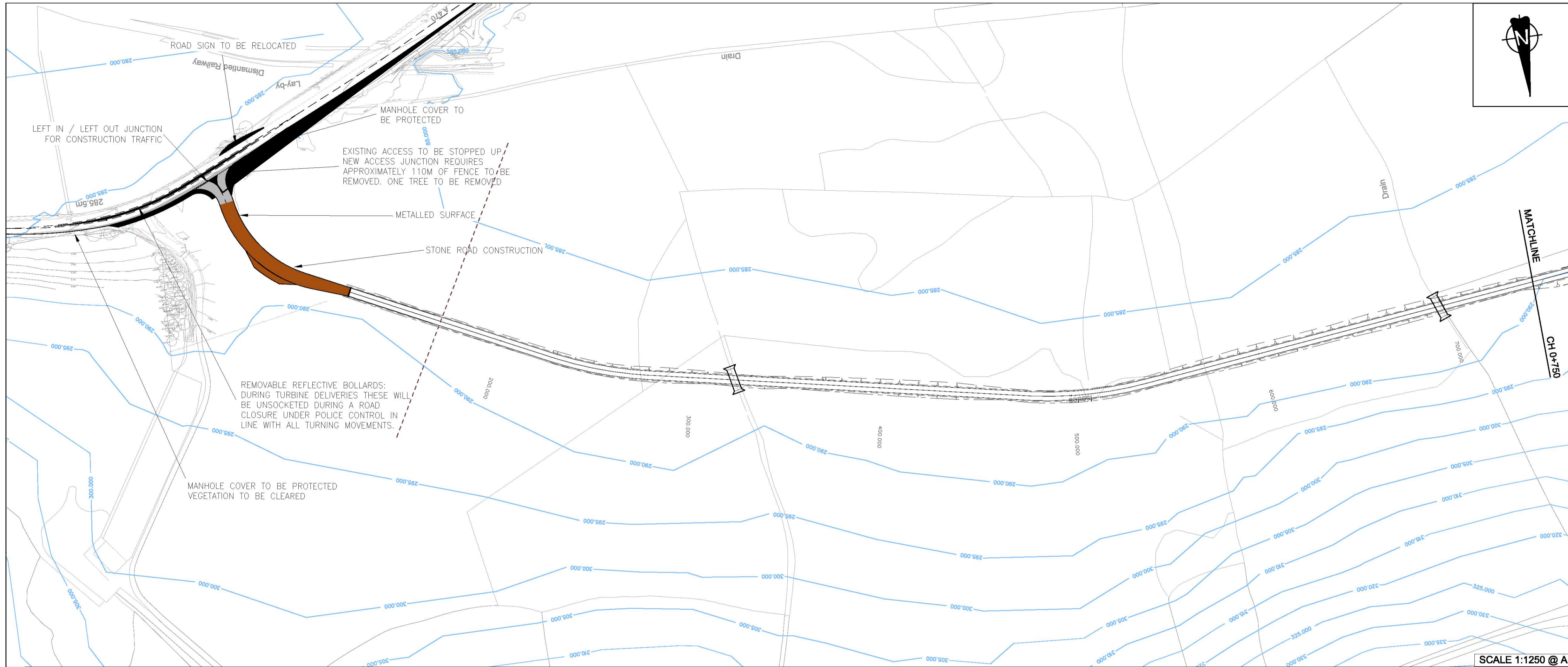
Project  
 BRYN BLAEN WINDFARM

Drawing Title  
 KEY PLAN

Drawn by NG Date: 18/09/2014  
 Checked by GT Date: 18/09/2014  
 Authorised by GT Date: 18/09/2014

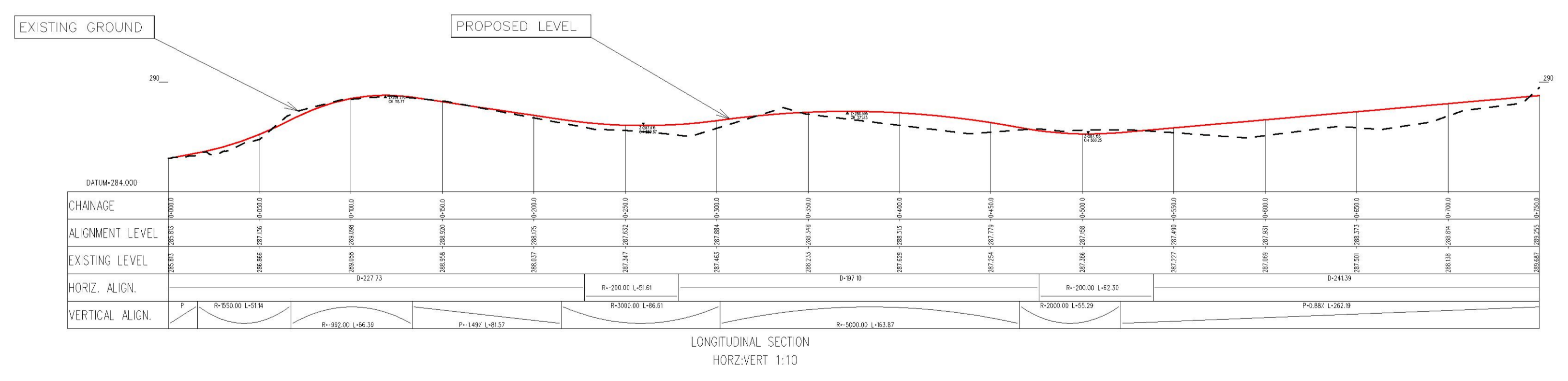
Drawing No. **ES-FIG-1.2.1** Revision **C**

Drawing Scale: 1:7500  
 CAD Filename: Q:\highway2\ Plot Scale: 1 : 1



- LEGEND:**
- T1 PROPOSED TURBINE
  - PROPOSED ROUTE
  - PROPOSED CULVERT
  - PROPOSED RECREATIONAL TRACK
  - PROPOSED COMPOUND
  - PROPOSED SUBSTATION

SCALE 1:1250 @ A1  
 HORIZONTAL SCALE 1:2000 @ A1  
 VERTICAL SCALE 1:200 @ A1



Revision	By	Checked	Approved	Date	Description
A	NG	GT	GT	21/08/14	Issued for Planning

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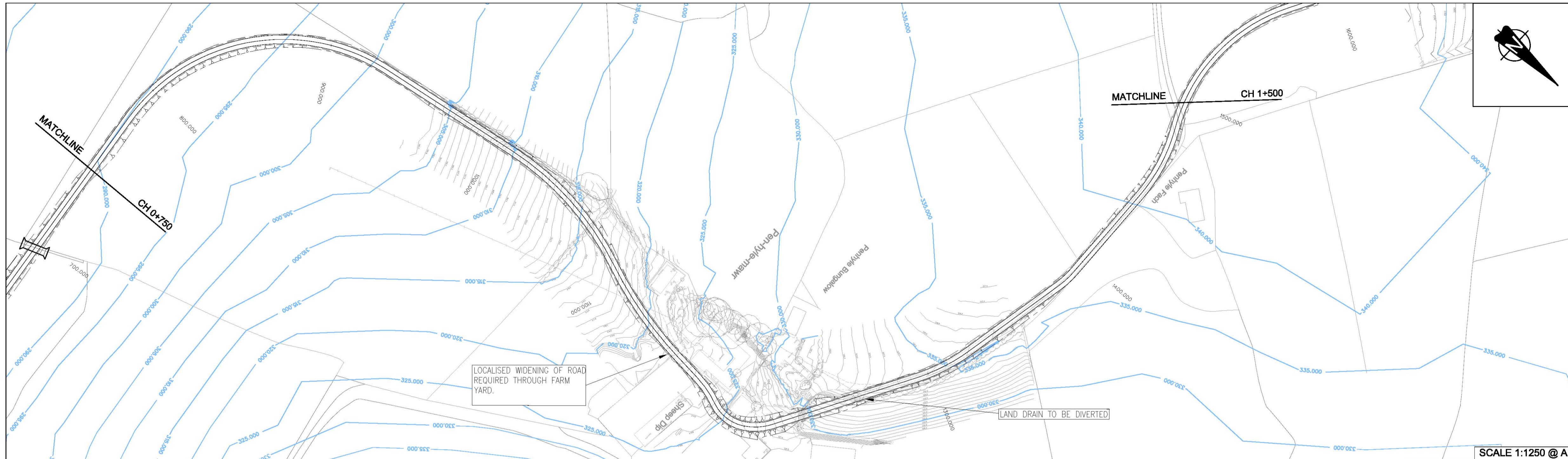
**Halcrow Group Limited**  
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 www.halcrow.com

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Project  
 BRYN BLAEN WINDFARM

Drawing Title  
 PLAN / PROFILE LAYOUT  
 SHEET 1 OF 8

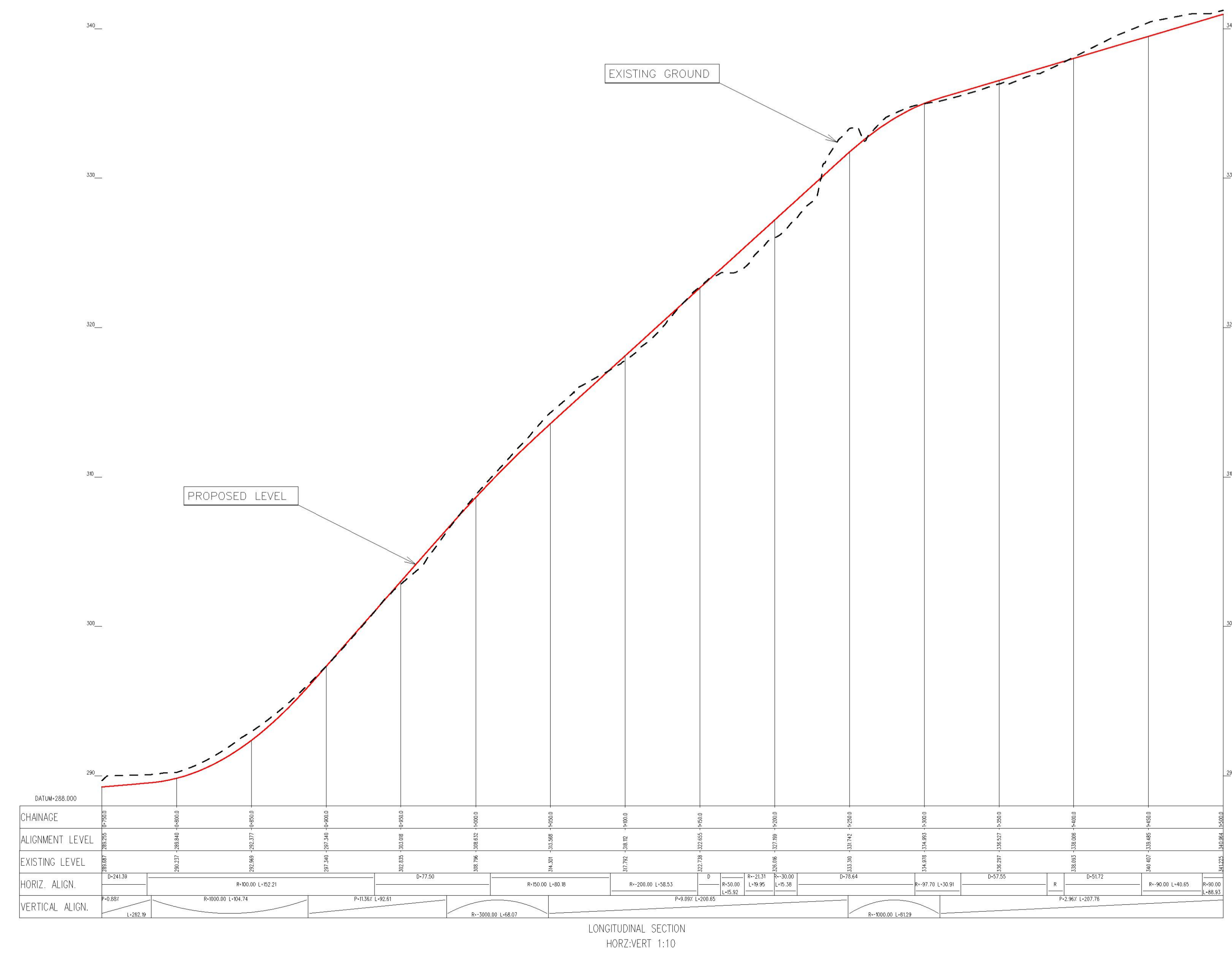
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Checked by GT	Date: 20/08/2014
Authorised by GT	Date: 20/08/2014
Drawing No.	Revision
<b>ES-FIG-1.2.2</b>	<b>A</b>
Drawing Scale:	
CAD Filename: Q:\highways\	Plot Scale: 1 : 1



- LEGEND:**
- PROPOSED TURBINE
  - PROPOSED ROUTE
  - PROPOSED CULVERT
  - PROPOSED RECREATIONAL TRACK
  - PROPOSED COMPOUND
  - PROPOSED SUBSTATION

SCALE 1:1250 @ A1

HORIZONTAL SCALE 1:2000 @ A1  
VERTICAL SCALE 1:200 @ A1



LONGITUDINAL SECTION  
HORZ:VERT 1:10

Revision	By	Checked	Approved	Date	Description
A	NG	GT	GT	21/08/14	Issued for Planning

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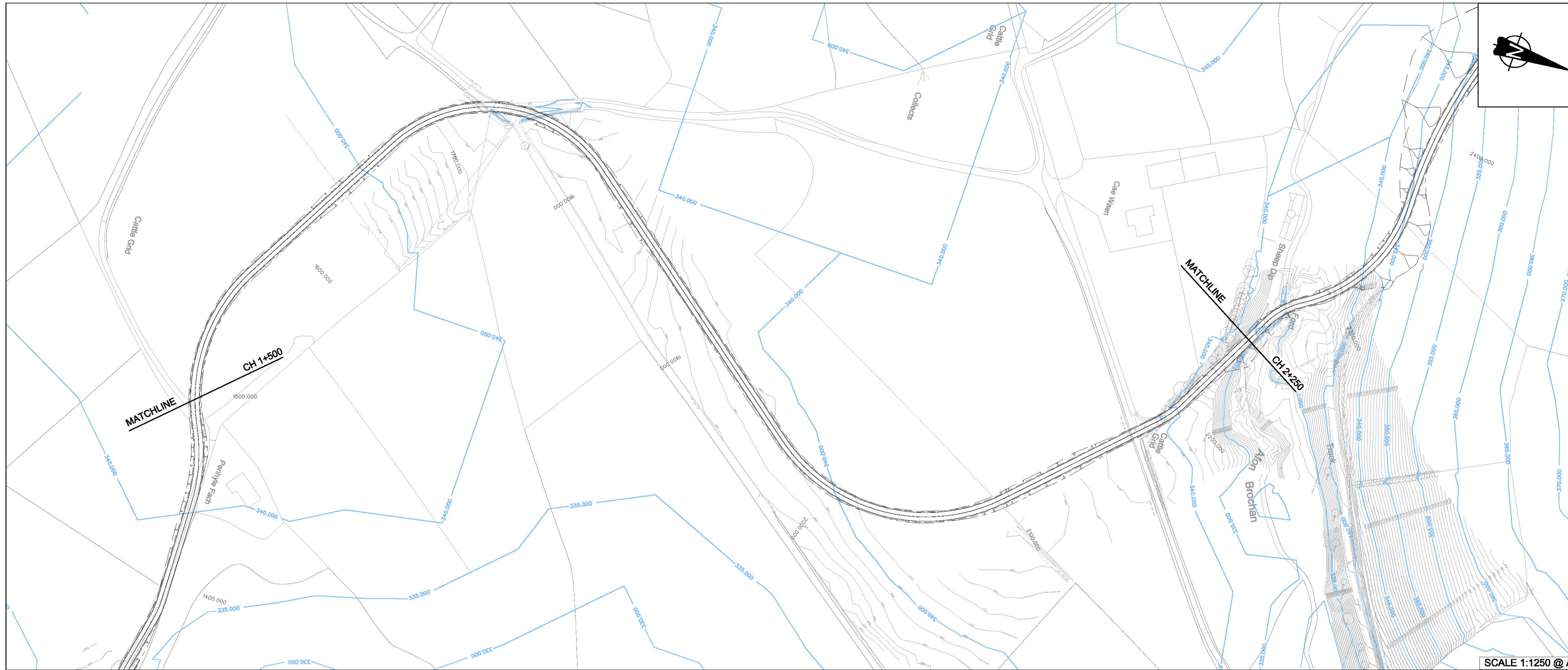
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Project  
**BRYN BLAEN WINDFARM**

Drawing Title  
**PLAN / PROFILE LAYOUT  
SHEET 2 OF 8**

Drawn by NG	Date: 20/08/2014
Checked by GT	Date: 20/08/2014
Authorised by GT	Date: 20/08/2014
Drawing No. <b>ES-FIG-1.2.3</b>	Revision <b>A</b>
Drawing Scale:	
CAD Filename: Q:\highways\	Plot Scale: 1 : 1



SCALE 1:1250 @ A1  
 HORIZONTAL SCALE 1:2000 @ A1  
 VERTICAL SCALE 1:200 @ A1

- LEGEND:**
- T1 PROPOSED TURBINE
  - PROPOSED ROUTE
  - PROPOSED CULVERT
  - PROPOSED RECREATIONAL TRACK
  - PROPOSED COMPOUND
  - PROPOSED SUBSTATION

Revision	By	Checked	Approved	Date	Description
A	NG	GT	GT	21/08/14	Issued for Planning

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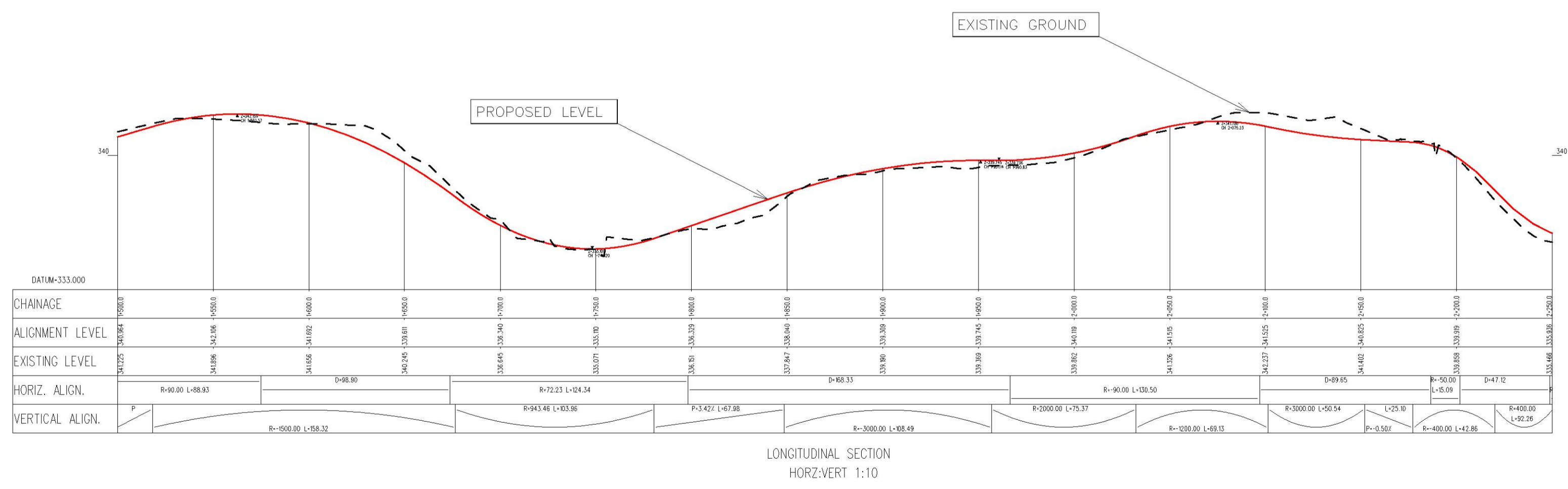
Project  
 BRYN BLAEN WINDFARM

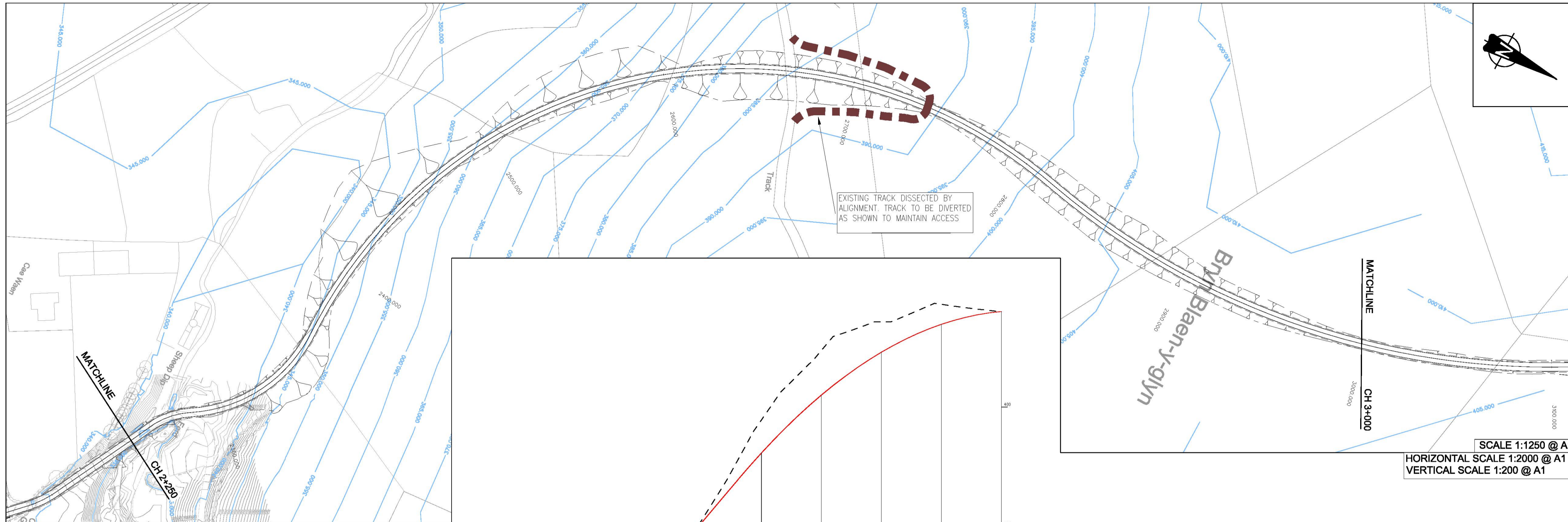
Drawing Title  
 PLAN / PROFILE LAYOUT  
 SHEET 3 OF 8

Drawn by NG Date: 20/08/2014  
 Checked by GT Date: 20/08/2014  
 Authorised by GT Date: 20/08/2014

Drawing No. **ES-FIG-1.2.4** Revision **A**

Drawing Scale:  
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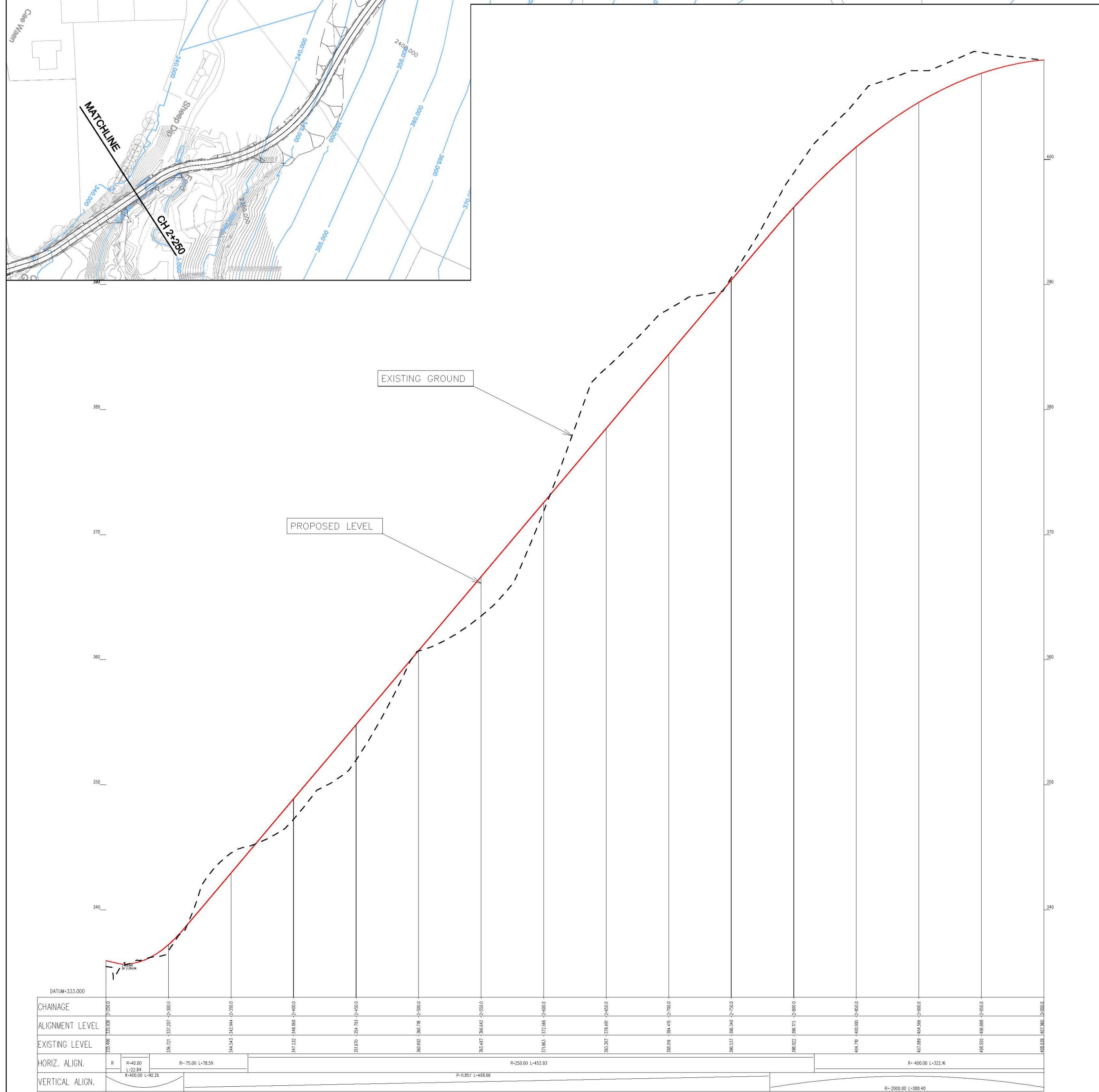




**LEGEND:**

- T1 PROPOSED TURBINE
- PROPOSED ROUTE
- PROPOSED CULVERT
- PROPOSED RECREATIONAL TRACK
- PROPOSED COMPOUND
- PROPOSED SUBSTATION
- DIVERTED ACCESS TRACK

SCALE 1:1250 @ A1  
HORIZONTAL SCALE 1:2000 @ A1  
VERTICAL SCALE 1:200 @ A1



CHAINAGE	ALIGNMENT LEVEL	EXISTING LEVEL
0+000	340.00	340.00
0+100	345.00	345.00
0+200	350.00	350.00
0+300	355.00	355.00
0+400	360.00	360.00
0+500	365.00	365.00
0+600	370.00	370.00
0+700	375.00	375.00
0+800	380.00	380.00
0+900	385.00	385.00
1+000	390.00	390.00
1+100	395.00	395.00
1+200	400.00	400.00
1+300	405.00	405.00
1+400	410.00	410.00
1+500	415.00	415.00
1+600	420.00	420.00
1+700	425.00	425.00
1+800	430.00	430.00
1+900	435.00	435.00
2+000	440.00	440.00
2+100	445.00	445.00
2+200	450.00	450.00
2+300	455.00	455.00
2+400	460.00	460.00
2+500	465.00	465.00
2+600	470.00	470.00
2+700	475.00	475.00
2+800	480.00	480.00
2+900	485.00	485.00
3+000	490.00	490.00

LONGITUDINAL SECTION  
HORZ:VERT 1:10

Revision	By	Checked	Approved	Date	Description
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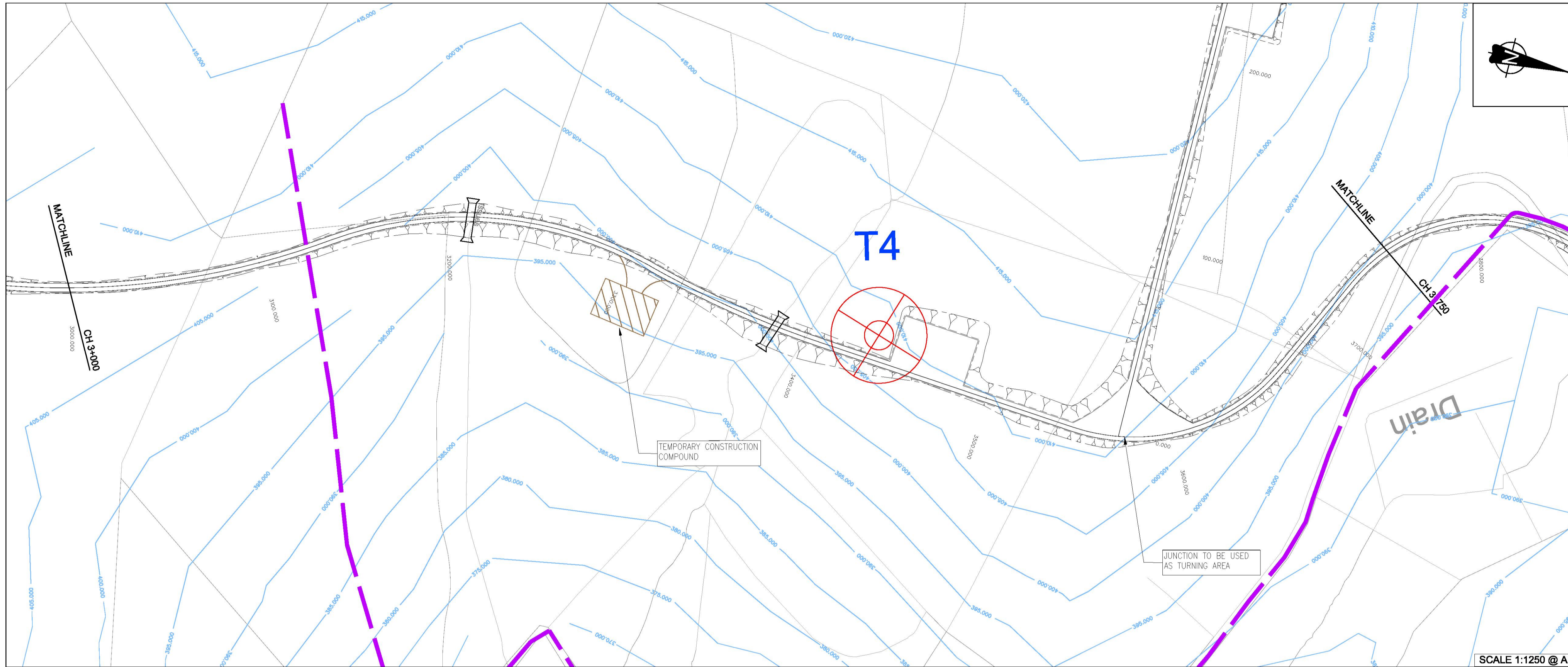


Project  
**BRYN BLAEN WINDFARM**

Drawing Title  
**PLAN / PROFILE LAYOUT  
SHEET 4 OF 8**

Drawn by NG	Date: 20/08/2014
Checked by GT	Date: 20/08/2014
Authorised by GT	Date: 20/08/2014
Drawing No.	Revision
<b>ES-FIG-1.2.5</b>	<b>A</b>
Drawing Scale:	
CAD Filename: Q:\highways\	Plot Scale: 1 : 1





- LEGEND:**
- T1 PROPOSED TURBINE
  - PROPOSED ROUTE
  - PROPOSED CULVERT
  - PROPOSED RECREATIONAL TRACK
  - PROPOSED COMPOUND
  - PROPOSED SUBSTATION

SCALE 1:1250 @ A1

HORIZONTAL SCALE 1:2000 @ A1  
VERTICAL SCALE 1:200 @ A1

Revision	By	Checked	Approved	Date	Description
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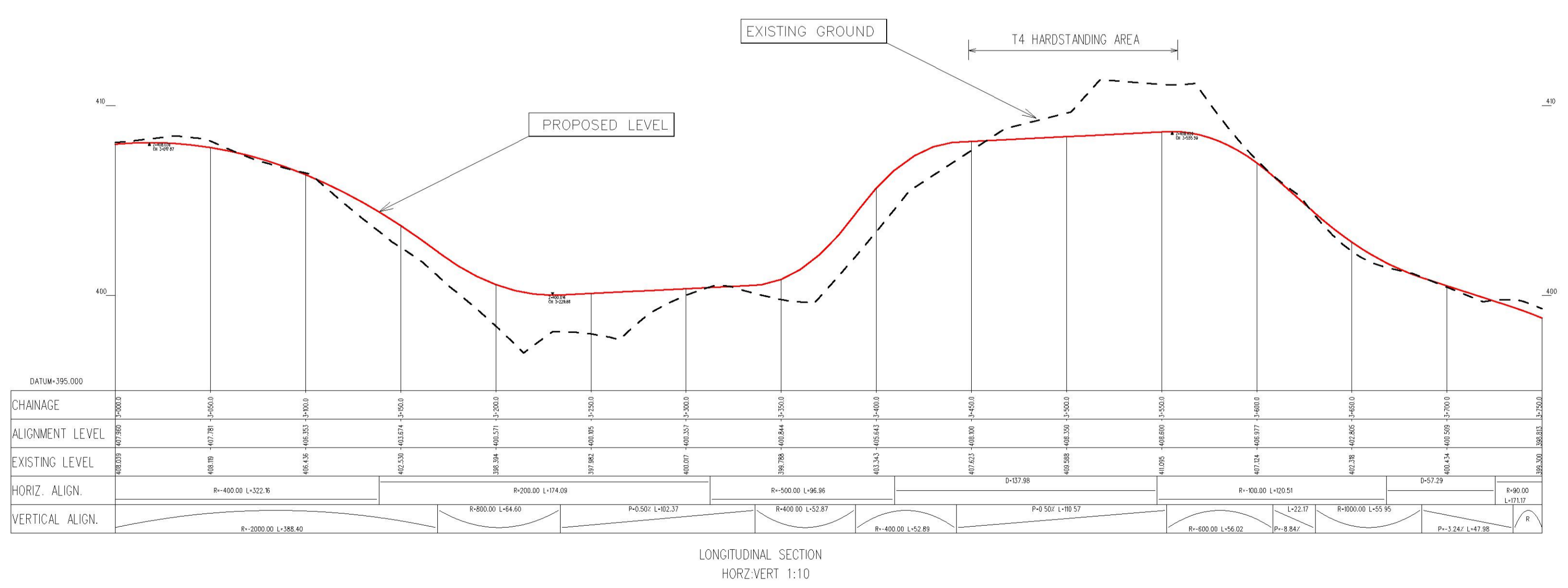
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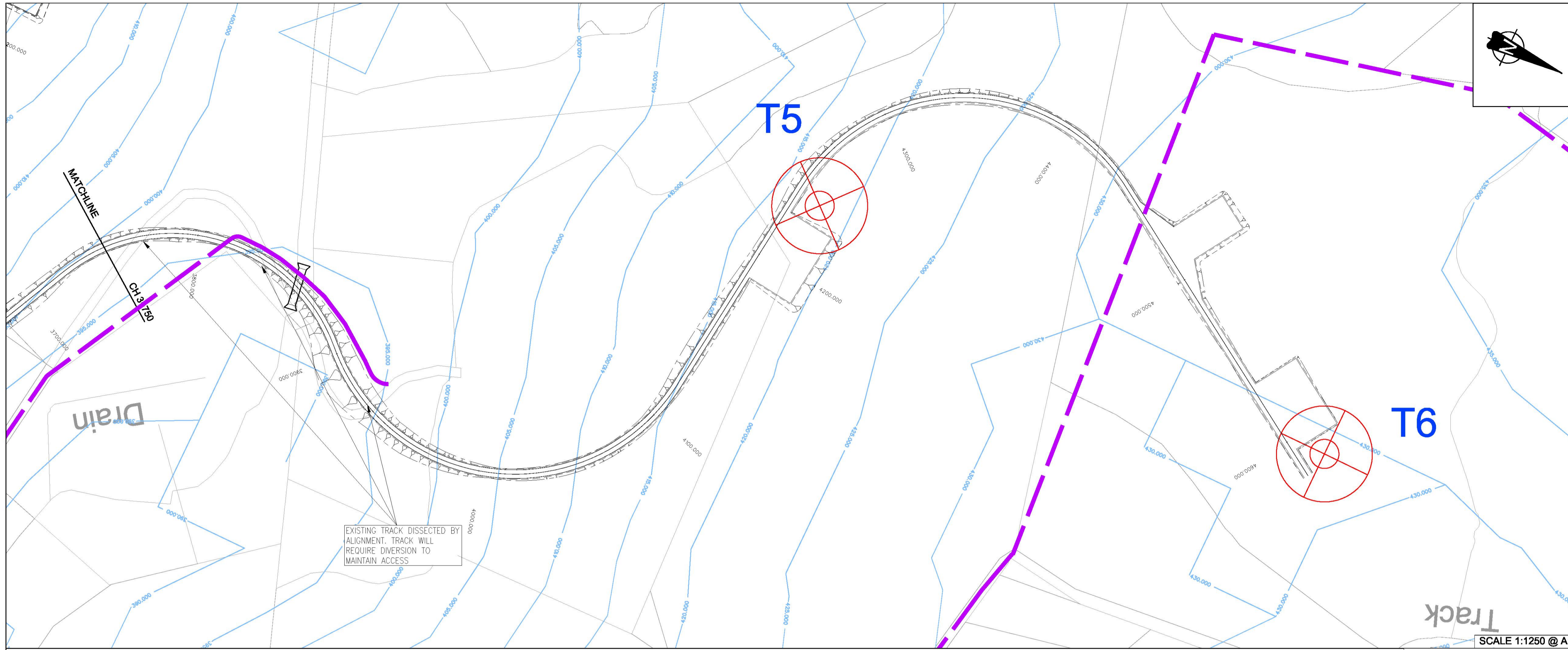
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Project  
BRYN BLAEN WINDFARM

Drawing Title  
PLAN PROFILE OPTIONS  
SHEET 5 OF 8

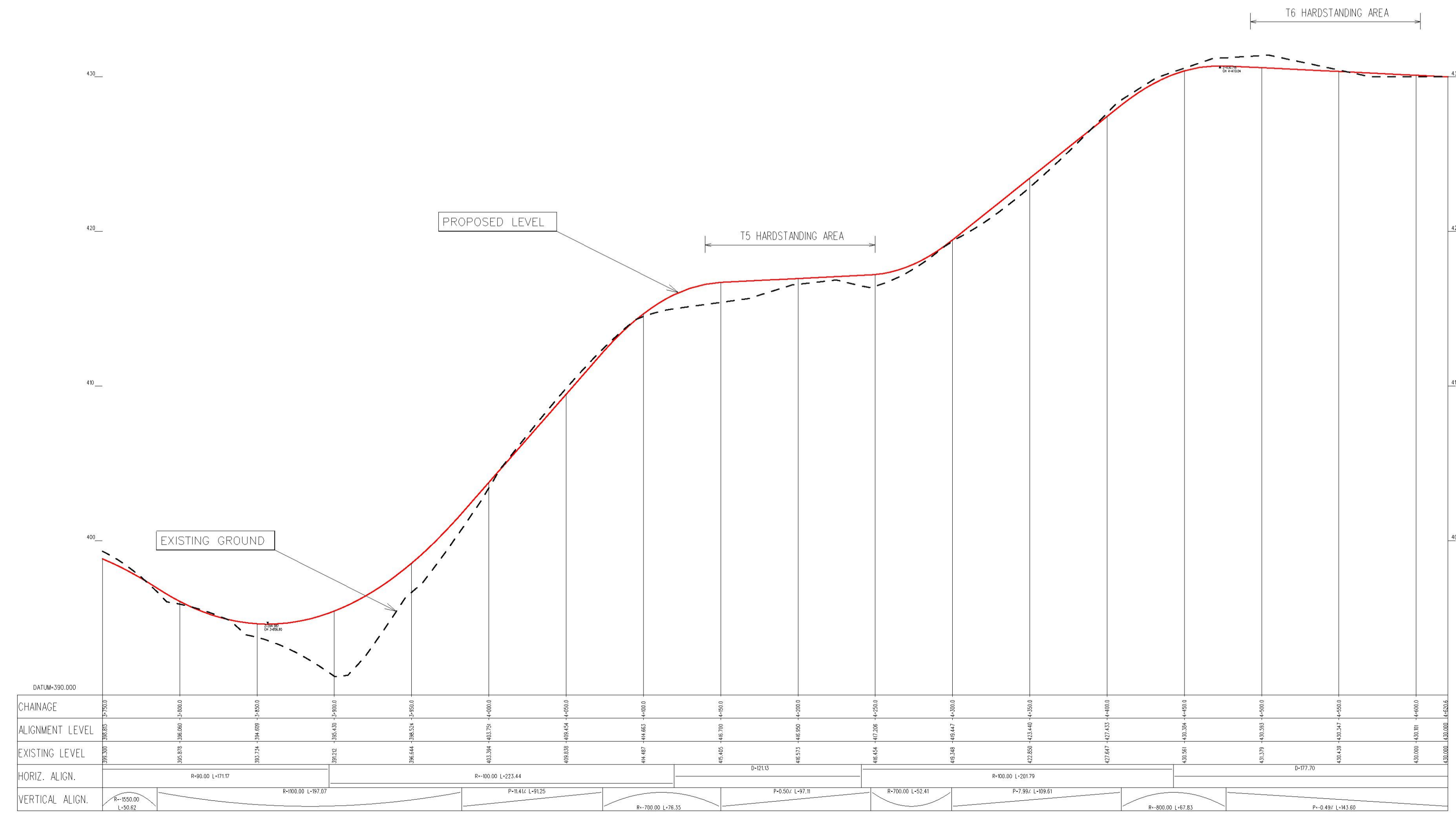
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Authorised by GT	Date: 20/08/2014
Drawing No. <b>ES-FIG-1.2.6</b>	Revision <b>A</b>
Drawing Scale:	
CAD Filename: Q:\highways\	Plot Scale: 1 : 1





- LEGEND:
- T1 PROPOSED TURBINE
  - PROPOSED ROUTE
  - PROPOSED CULVERT
  - PROPOSED RECREATIONAL TRACK
  - PROPOSED COMPOUND
  - PROPOSED SUBSTATION

SCALE 1:1250 @ A1  
 HORIZONTAL SCALE 1:2000 @ A1  
 VERTICAL SCALE 1:200 @ A1



LONGITUDINAL SECTION  
 HORZ:VERT 1:10

Revision	By	Checked	Approved	Date	Description
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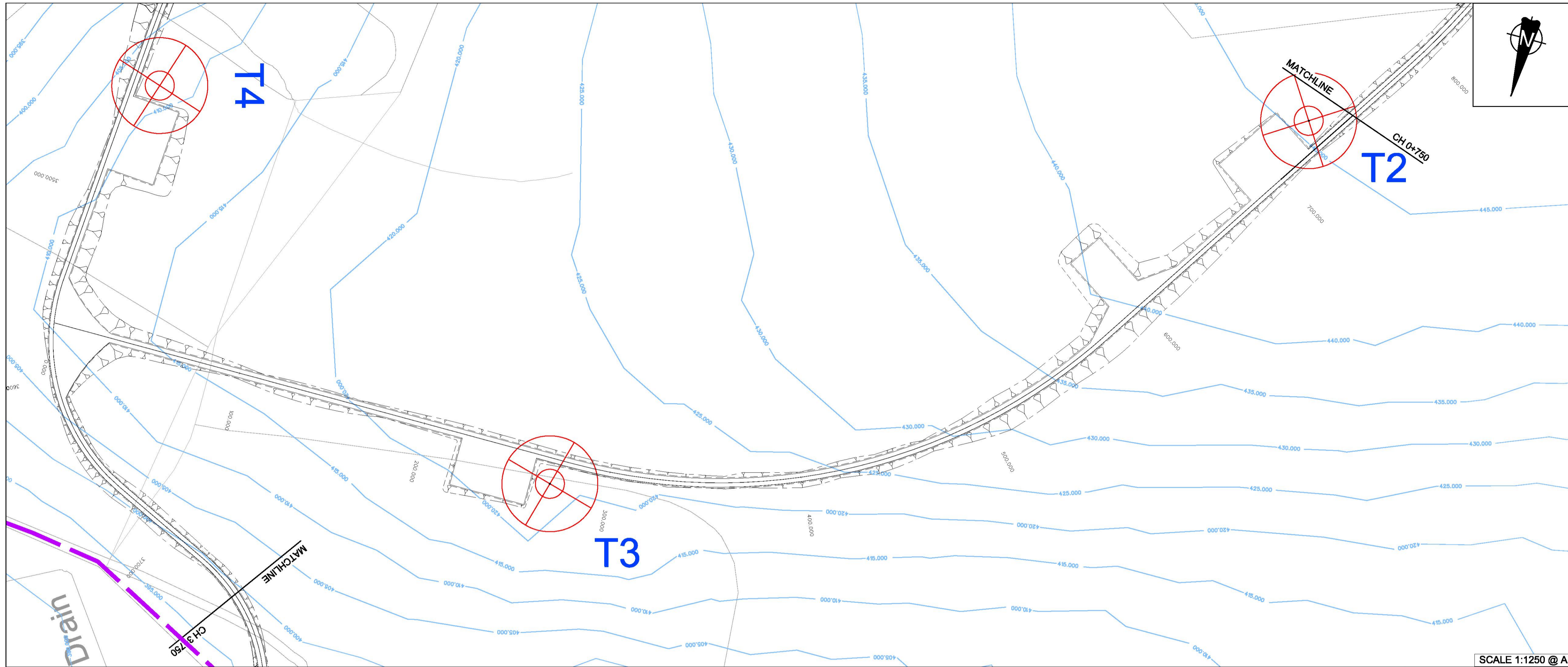
Project  
 BRYN BLAEN WINDFARM

Drawing Title  
 PLAN / PROFILE LAYOUT  
 SHEET 6 OF 8

Drawn by NG Date: 20/08/2014  
 Checked by GT Date: 20/08/2014  
 Authorised by GT Date: 20/08/2014

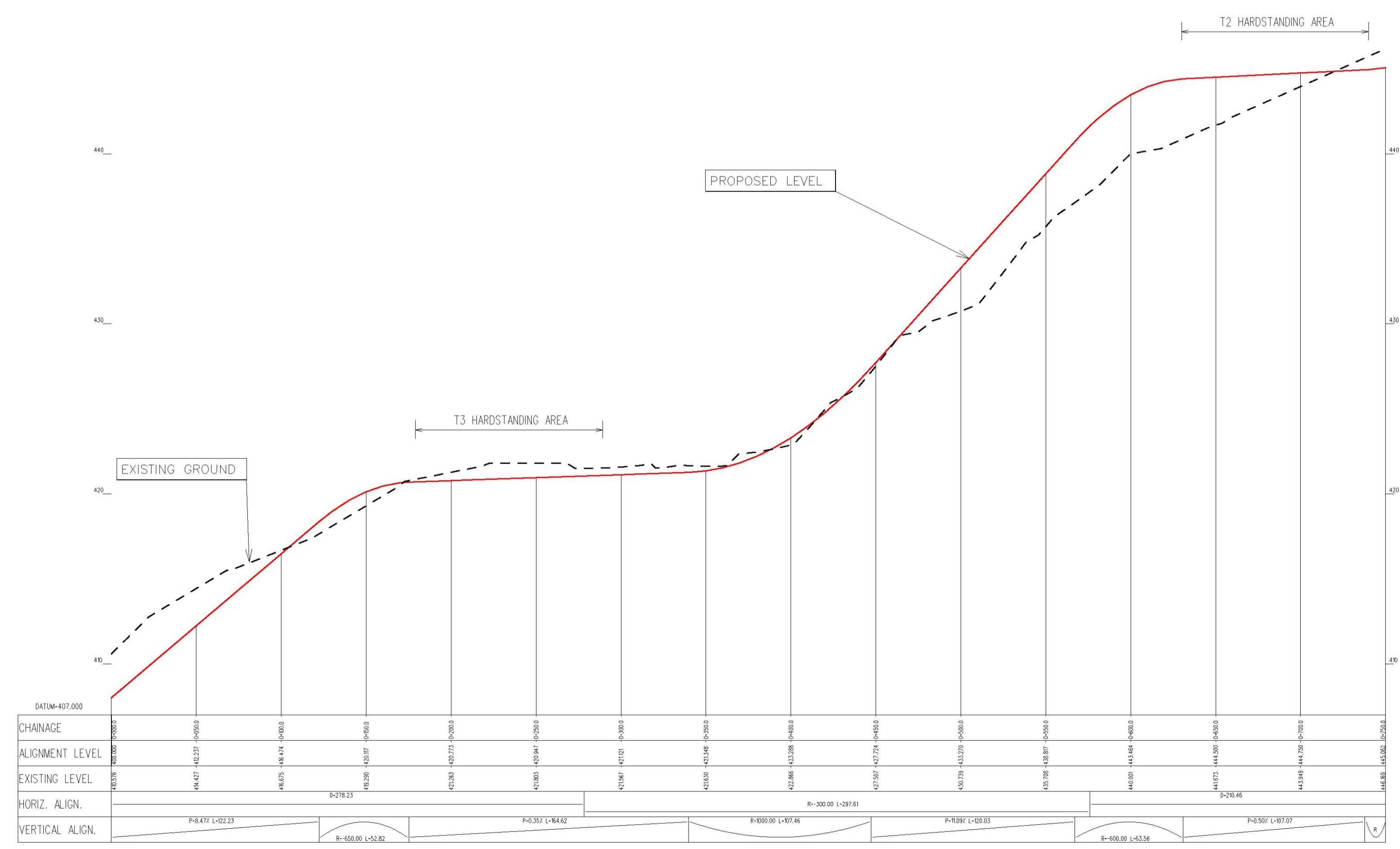
Drawing No. **ES-FIG-1.2.7** Revision **A**

Drawing Scale:  
 CAD Filename: Q:\highways\ Plot Scale: 1 : 1



- LEGEND:**
- T1 PROPOSED TURBINE
  - PROPOSED ROUTE
  - PROPOSED CULVERT
  - PROPOSED RECREATIONAL TRACK
  - PROPOSED COMPOUND
  - PROPOSED SUBSTATION

SCALE 1:1250 @ A1  
 HORIZONTAL SCALE 1:2000 @ A1  
 VERTICAL SCALE 1:200 @ A1



CHAINAGE	ALIGNMENT LEVEL	EXISTING LEVEL	HORIZ. ALIGN.	VERTICAL ALIGN.
410.00	410.00	410.00	P=8.47% L=22.33	
415.00	415.00	415.00		R=650.00 L=52.82
420.00	420.00	420.00	P=4.35% L=84.62	
425.00	425.00	425.00		R=880.00 L=97.84
430.00	430.00	430.00	P=7.59% L=59.03	
435.00	435.00	435.00		R=650.00 L=52.82
440.00	440.00	440.00	P=8.56% L=37.07	
445.00	445.00	445.00		

LONGITUDINAL SECTION  
 HORZ:VERT 1:10

Revision	By	Checked	Approved	Date	Description
A	NG	GT	GT	21/08/14	Issued for Planning

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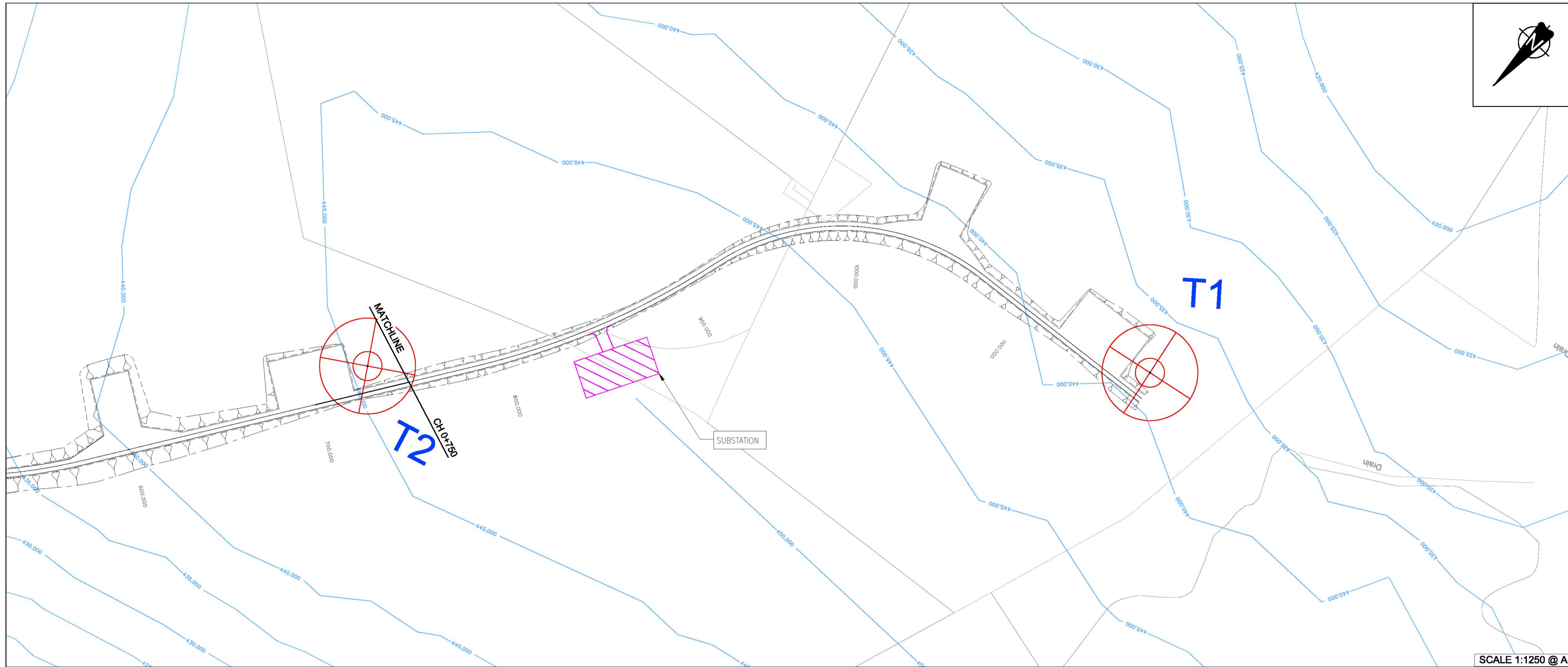
Project  
 BRYN BLAEN WINDFARM

Drawing Title  
 PLAN / PROFILE LAYOUT  
 SHEET 7 OF 8

Drawn by NG Date: 20/08/2014  
 Checked by GT Date: 20/08/2014  
 Authorised by GT Date: 20/08/2014

Drawing No. **ES-FIG-1.2.8** Revision **A**

Drawing Scale:  
 CAD Filename: Q:\highways\ Plot Scale: 1 : 1



SCALE 1:1250 @ A1  
 HORIZONTAL SCALE 1:2000 @ A1  
 VERTICAL SCALE 1:200 @ A1

- LEGEND:
- T1 PROPOSED TURBINE
  - PROPOSED ROUTE
  - PROPOSED CULVERT
  - PROPOSED RECREATIONAL TRACK
  - PROPOSED COMPOUND
  - PROPOSED SUBSTATION

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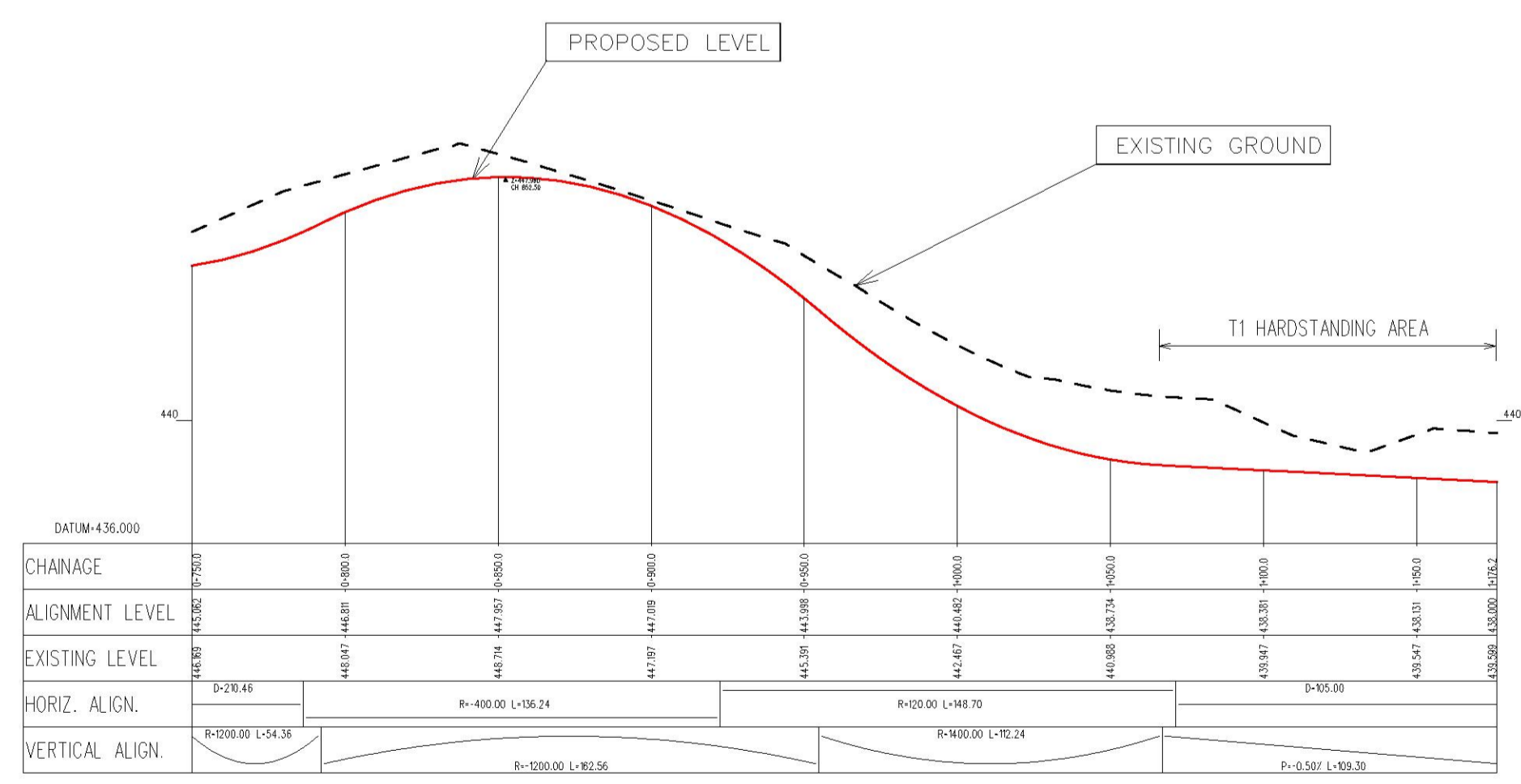
Project  
 BRYN BLAEN WINDFARM

Drawing Title  
 PLAN / PROFILE LAYOUT  
 SHEET 8 OF 8

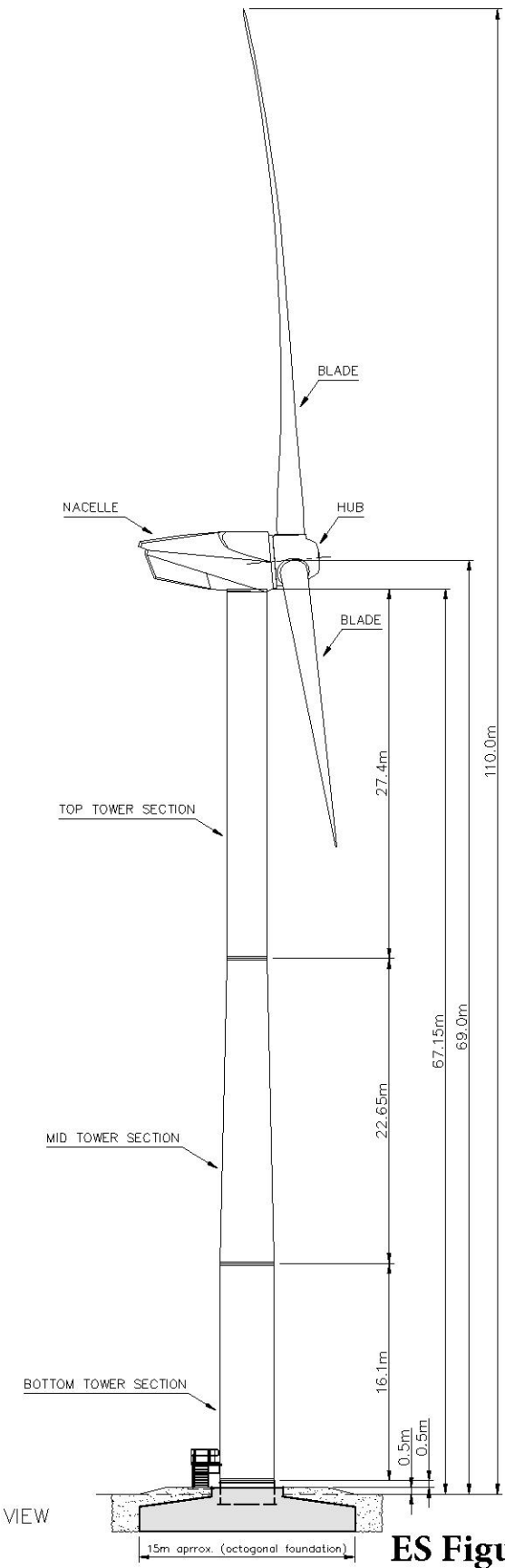
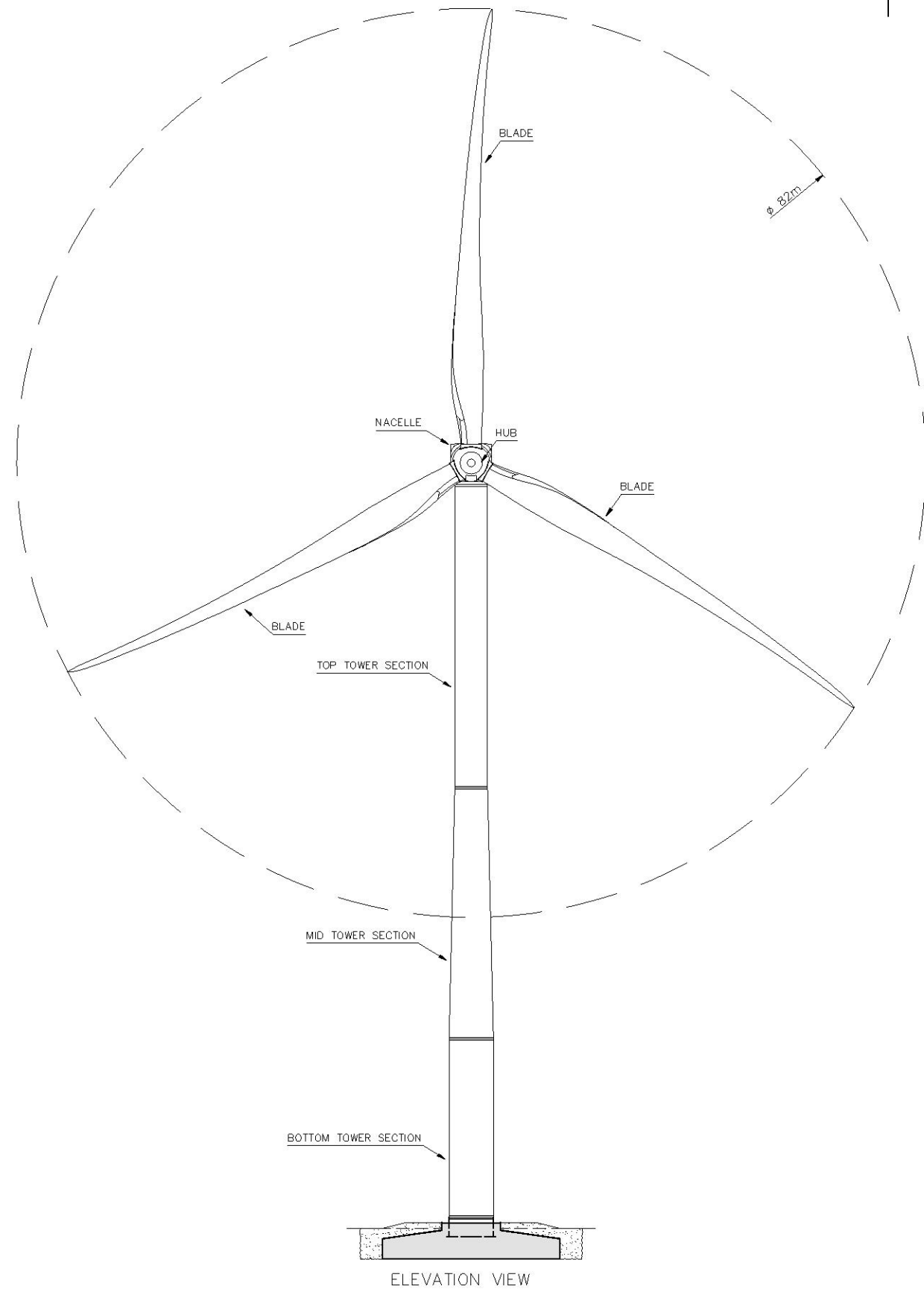
Drawn by NG Date: 20/08/2014  
 Checked by GT Date: 20/08/2014  
 Authorised by GT Date: 20/08/2014

Drawing No. **ES-FIG-1.2.9** Revision **A**

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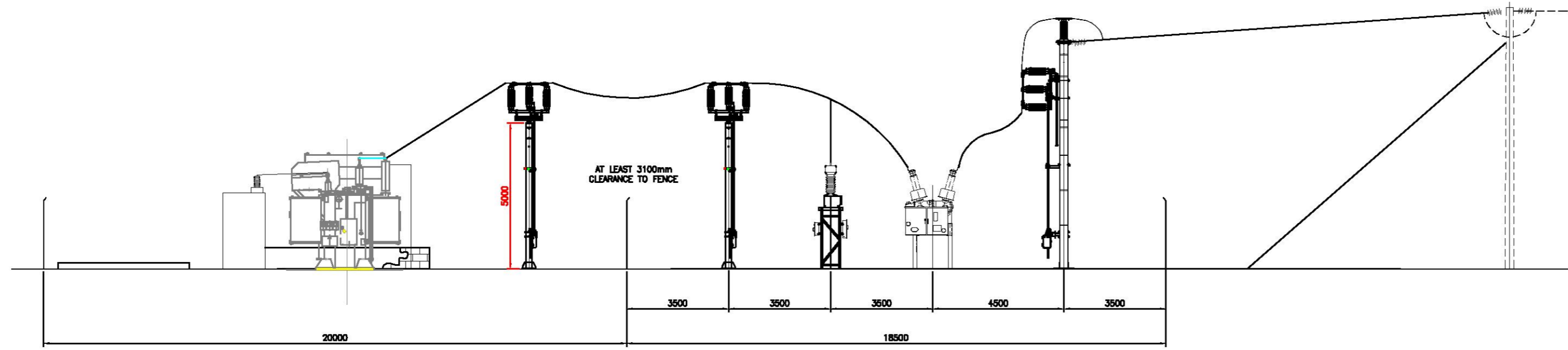
LONGITUDINAL SECTION  
 HORZ:VERT 1:10



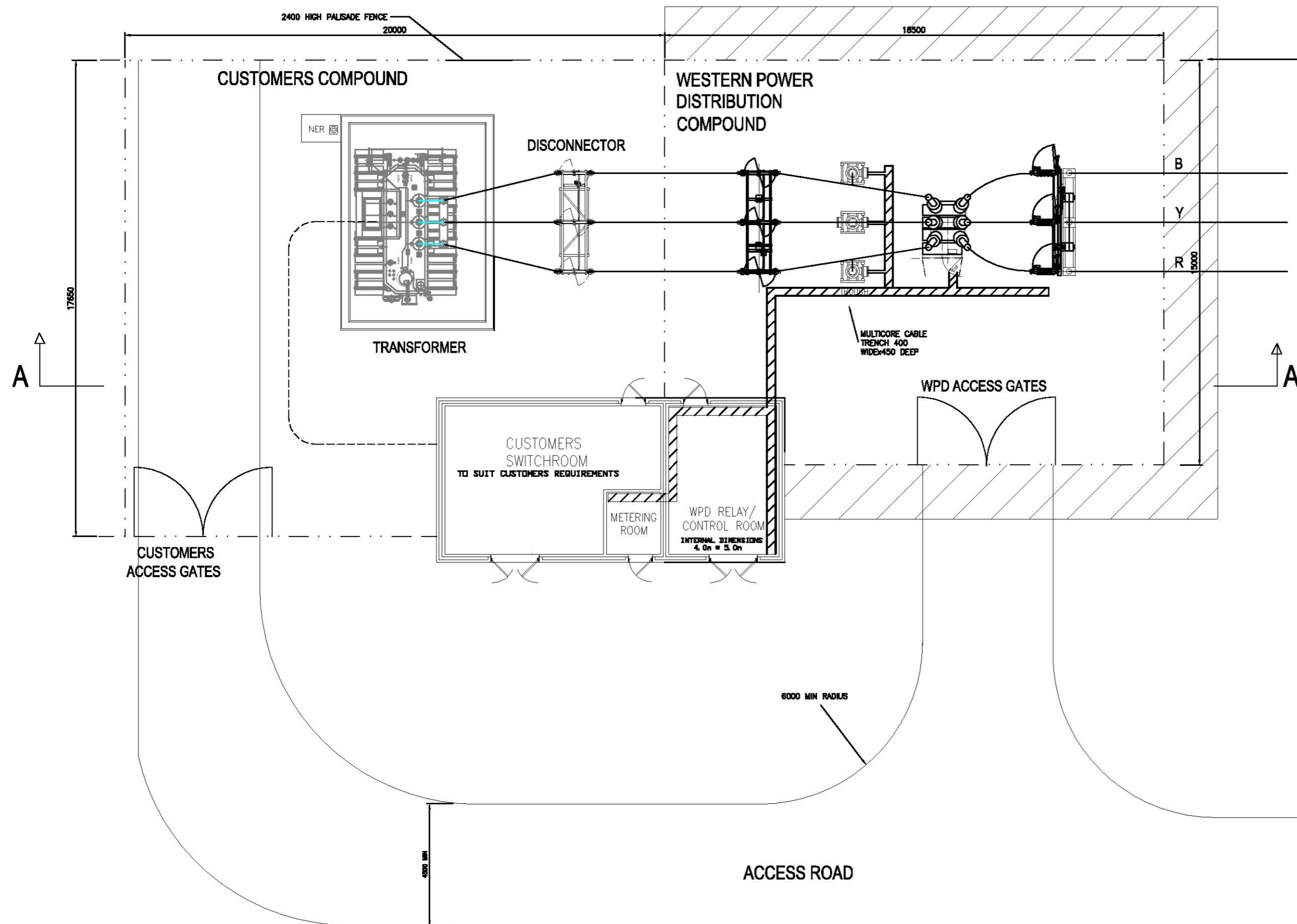
**ES Figure 1.3: Turbine Details**

Related Documents				
Ref.	Title	Document No.	Rev.	Date
[1]	TubularTower - Overview	D-2.5-GP.MA.10-A	C	14/11/2007
[2]	Embedded steel can HH69,0 m, DIBT(2004) WZIII, IEC 1A, s-class (MM82)	Z-2.5-RT.00.53-A	B	05/02/2007
[3]	Tower - NH 69m Weights and Dimensions	D-2.5-GP.MA.17-F	A	23/02/2007
[4]	Plan of Stairs Footing - PWEPII	WC7000-029	01	16/09/2008
[5]	---	---	---	---

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The reproduction, distribution and utilization of this document as well as the communication of its contents to others without explicit authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or design.		Stückzahl pro Anlage / No. of Pieces per Turbine: N/A Schutzvermerk: DIN ISO 16016 Protection Mark: DIN ISO 16016 SAP-No.: N/A Pos.-Nr.: N/A EDP NO. N/A	Angegebene Spezifikation ist zwingend zu beachten! Indicated Specification has to be strictly observed!		



SECTION A-A



2000mm WIDE ZONE AROUND WPD SUBSTATION COMPOUND WITHIN WHICH NO CLIMBING HAZARDS ARE TO BE PRESENTED

NOTES: -

- 1) THIS DRAWING DETAILS A TYPICAL SINGLE CIRCUIT 66KV GENERATOR CONNECTION AND IS INTENDED TO OUTLINE WPD SUBSTATION COMPOUND AND CONTROL ROOM REQUIREMENTS.
- 2) THIS DRAWING IS INDICATIVE ONLY AND SHOULD NOT BE USED BY THIRD PARTIES FOR DETAILED DESIGN / CONSTRUCTION PURPOSES.
- 3) THIS DRAWING INDICATES ONE POTENTIAL SUBSTATION CONFIGURATION USING AN ASSUMED LINE ENTRY ROUTE AND ROAD ACCESS CONFIGURATION. WHILST A GOOD GENERAL GUIDE TO WPD REQUIREMENTS, PROJECT SPECIFIC CRITERIA MAY NECESSITATE A REVISED SUBSTATION CONFIGURATION.
- 4) ALL ELECTRICAL PLANT IS THAT IN CURRENT USE BY WPD. THE ACTUAL CONFIGURATION / APPEARANCE OF ELECTRICAL PLANT FOR ANY PARTICULAR SCHEME MAY DIFFER FROM THAT SHOWN.
- 5) THE SUBSTATION COMPOUND/S SHOULD BE CONFIGURED IN SUCH A WAY THAT THE GROUND SURFACE IS AT NO MORE THAN 1 DEGREE FROM HORIZONTAL (< 1:60 MAXIMUM FALL ACROSS THE SITE IN ANY DIRECTION).
- 6) THE ACCESS ROAD FROM THE NEAREST PUBLIC HIGHWAY TO THE SITE IS TO BE DESIGNED TO THE FOLLOWING CRITERIA:
  - HARD SURFACE DESIGNED TO WITHSTAND AXLE LOAD OF 11.0 TONNES
  - MINIMUM ROAD WIDTH OF 4.5M
  - MINIMUM INTERNAL BEND RADIUS 6.0M
- 7) APPEARANCE / CONSTRUCTION OF COMBINED CUSTOMER SWITCHROOM / METERING ROOM / WPD CONTROL ROOM BUILDING TO BE AGREED WITH WPD. AS A MINIMUM, THE BUILDING SHOULD BE DESIGNED TO COMPLY WITH WPD SPECIFICATION DOCUMENT 'PERFORMANCE SPECIFICATION FOR WPD CONTROL ROOM'.
- 8) SITE TO BE POSITIONED IN ORDER THAT A CLEAR ZONE (<2M WIDE ON PLAN) CAN BE MAINTAINED AROUND THE WPD COMPOUND FENCE. WHERE NECESSARY AN INDEPENDENT STOCK FENCE WILL BE ERECTED TO MAINTAIN THIS CLEARANCE.
- 9) A SITE-SPECIFIC EARTHING STUDY AND DESIGN WILL BE REQUIRED TO ENABLE AN EFFECTIVE EARTHING SOLUTION TO BE DEVELOPED BY WPD.
- 10) CUSTOMERS H. V. ISOLATOR MUST BE INTERLOCKED WITH WESTERN POWERS FEEDER CIRCUIT BREAKER AS WELL AS TO THEIR OWN L. V CIRCUIT BREAKER.

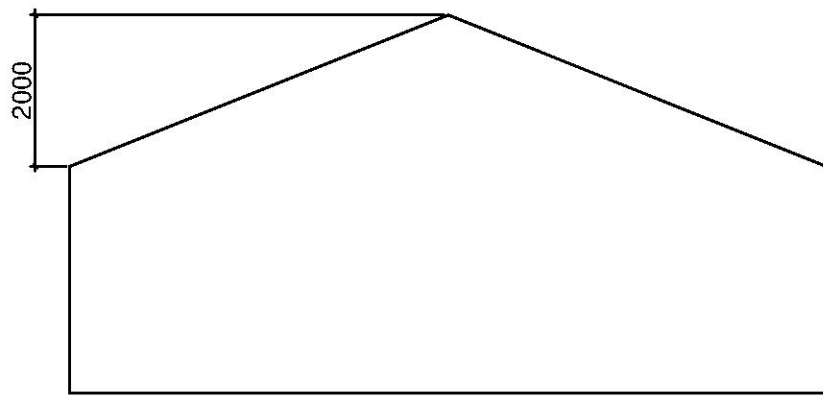
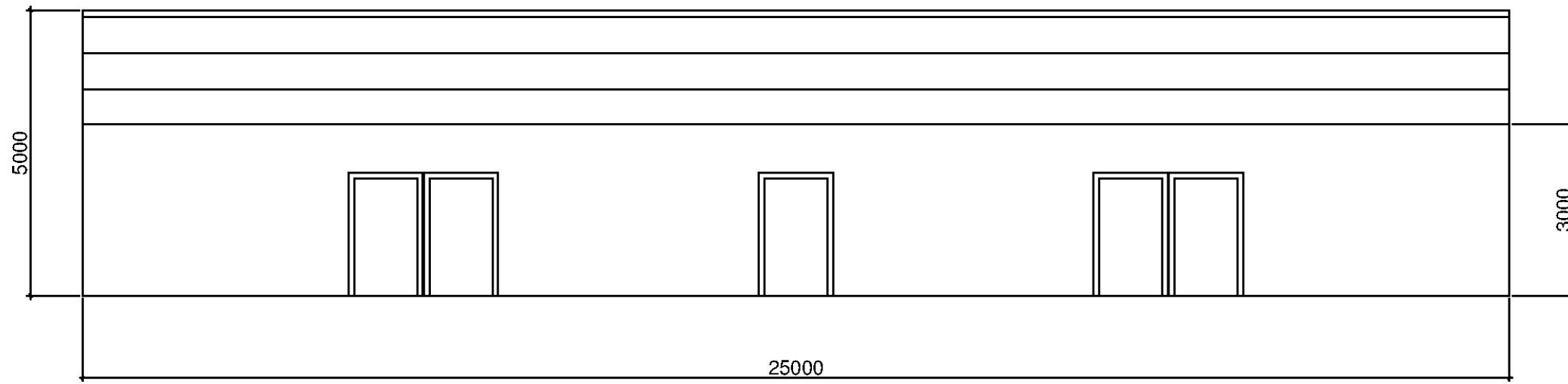
ES Figure 1.4: Substation Details

Revisions:	Drawn:	Date:	Revisions:	Drawn:	Date:	Revisions:	Drawn:	Date:	Revisions:	Drawn:	Date:	Revisions:	Drawn:	Date:	Revisions:	Drawn:	Date:	Revisions:	Drawn:	Date:						
Work Done			Work Done			Work Done			Work Done			Work Done			Work Done			Work Done			Work Done			Work Done		
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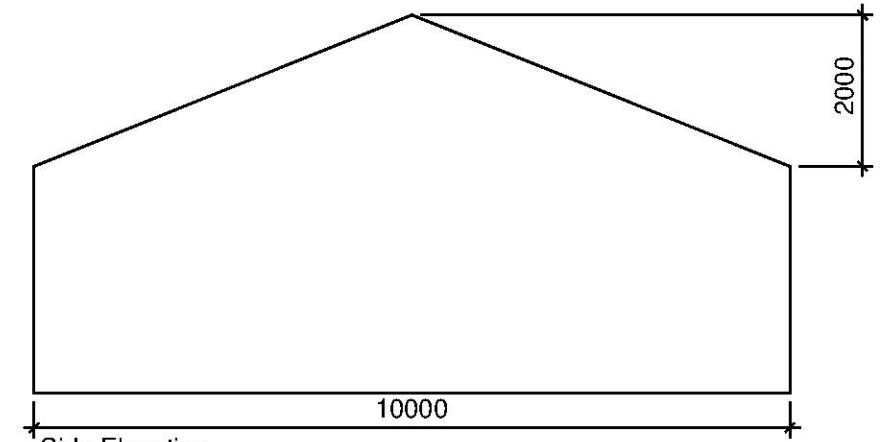
  

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Approvals for Construction		Western Power Distribution Engineering Design Department Lambly Way Rumney Cardiff CF3 2EQ		Drawn: DMH Checked: Date 30/06/11 Scale of original	DRAWING NUMBER Revision GCS0012 B

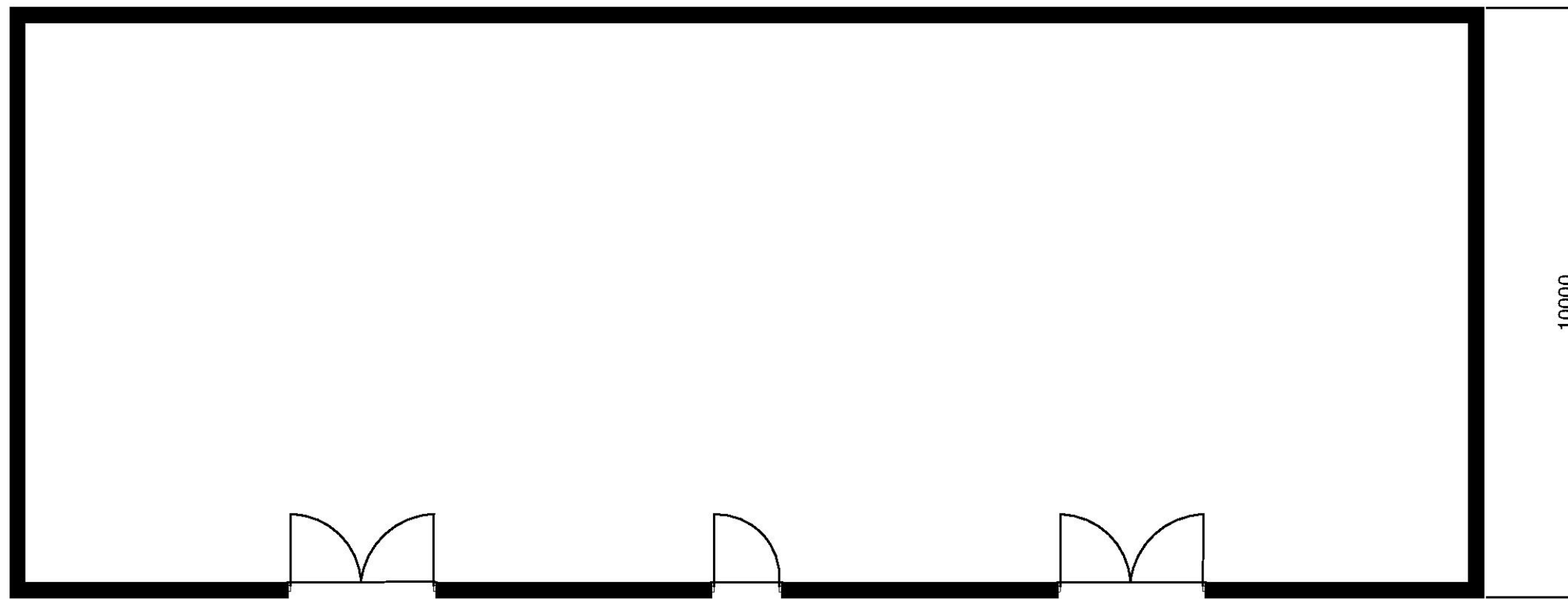
Front Elevation



Side Elevation



Side Elevation



Plan

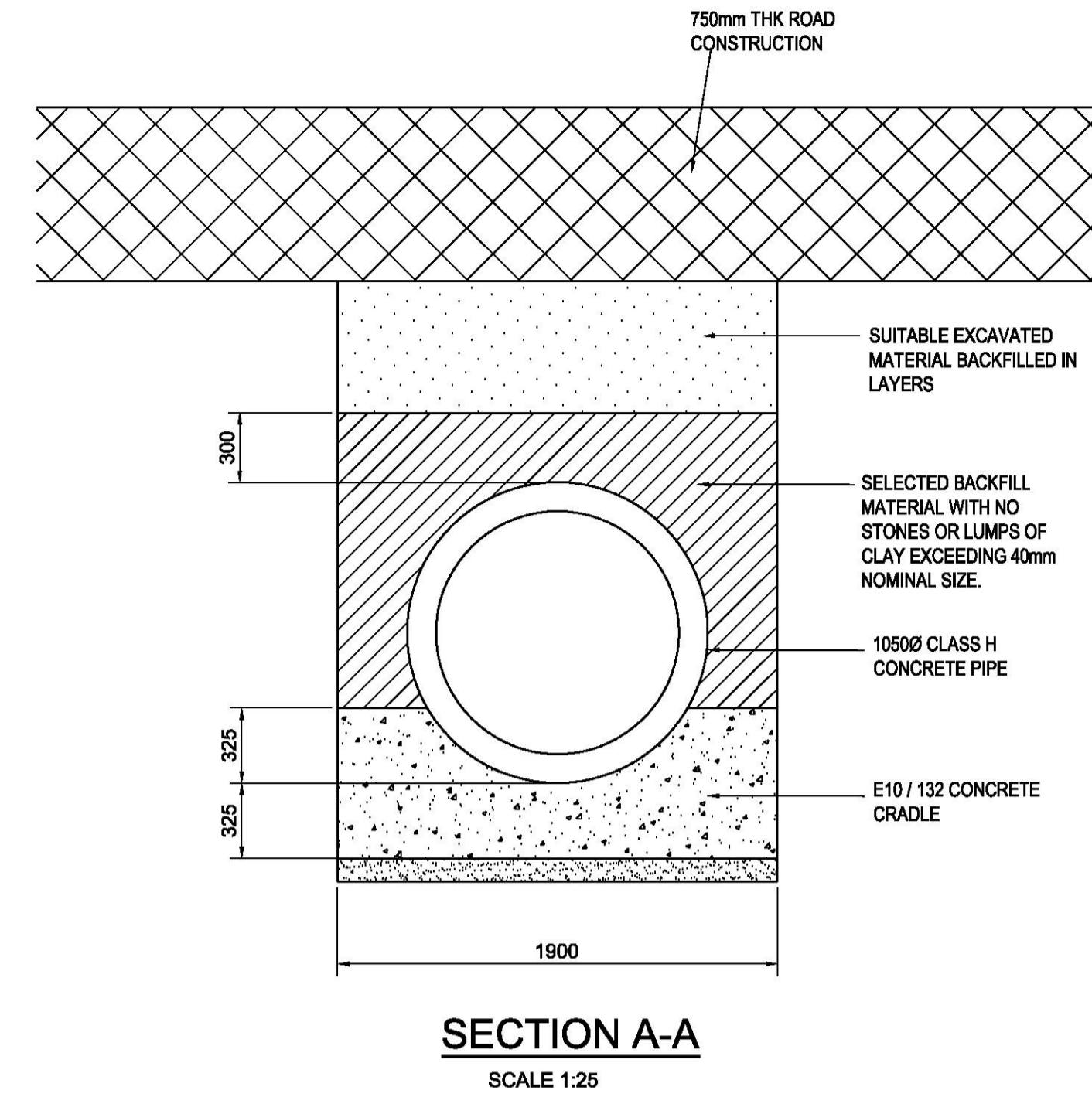
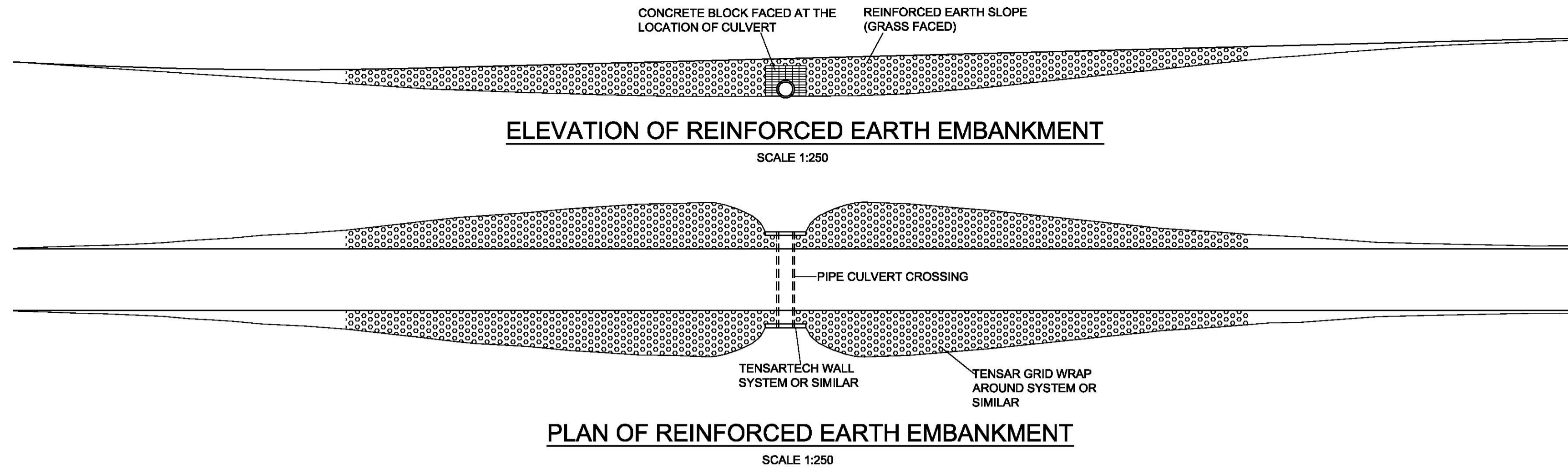
REV	DATE	AMENDMENT

**CUNNANE TOWN PLANNING**

Cunnane Town Planning  
 67 Strathmore Road  
 Teddington  
 London  
 TW11 8UH

PROJECT: <b>HENDY WINDFARM</b>	DATE: May 2014
DRAWING: <b>CONTROL BUILDING DETAIL</b>	SCALE: 1:100 @ A3
	DRAWN: DM
	CHECKED: AML
	DRAWING/ES FIGURE NO: <b>1.5</b>

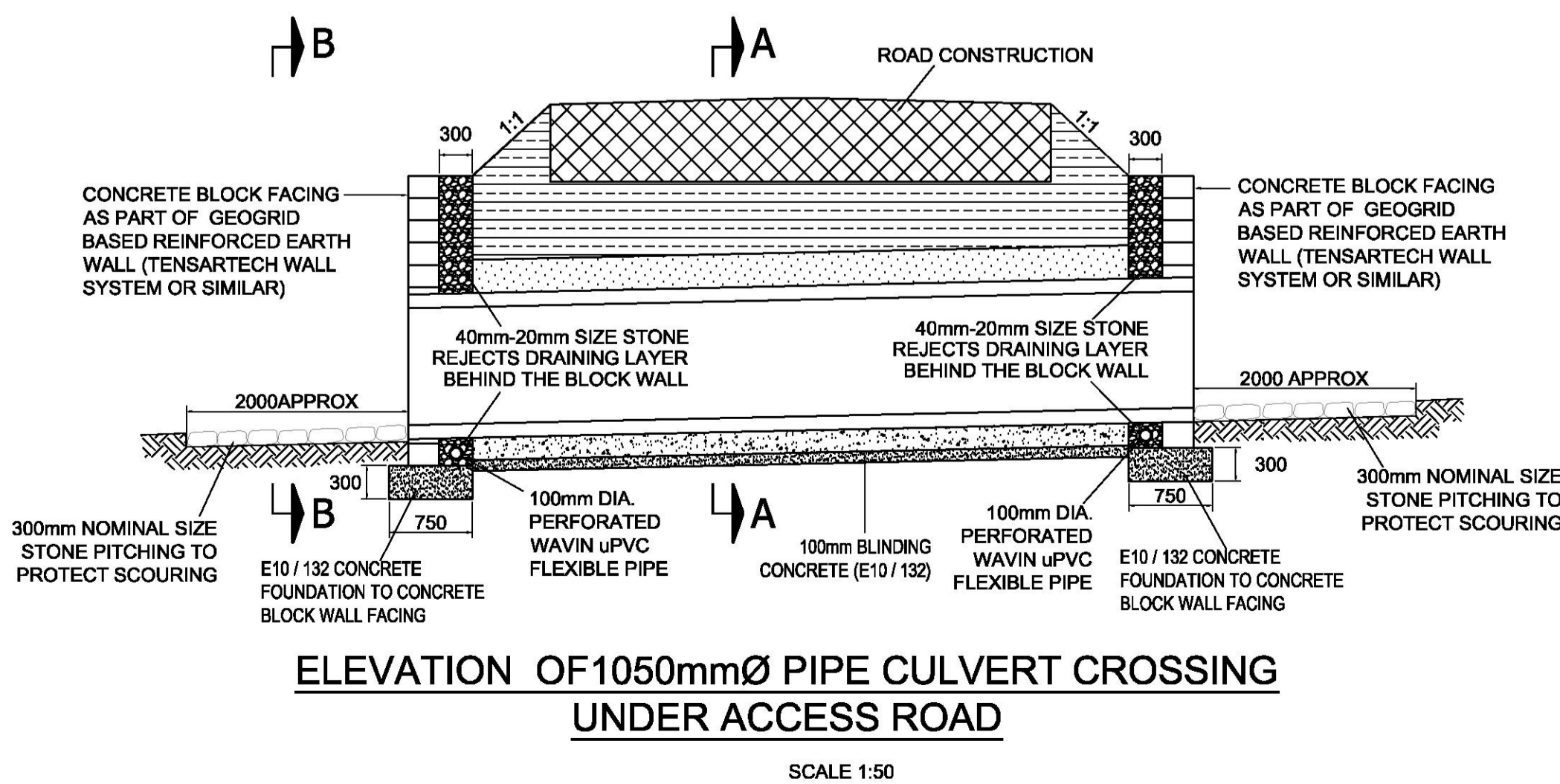
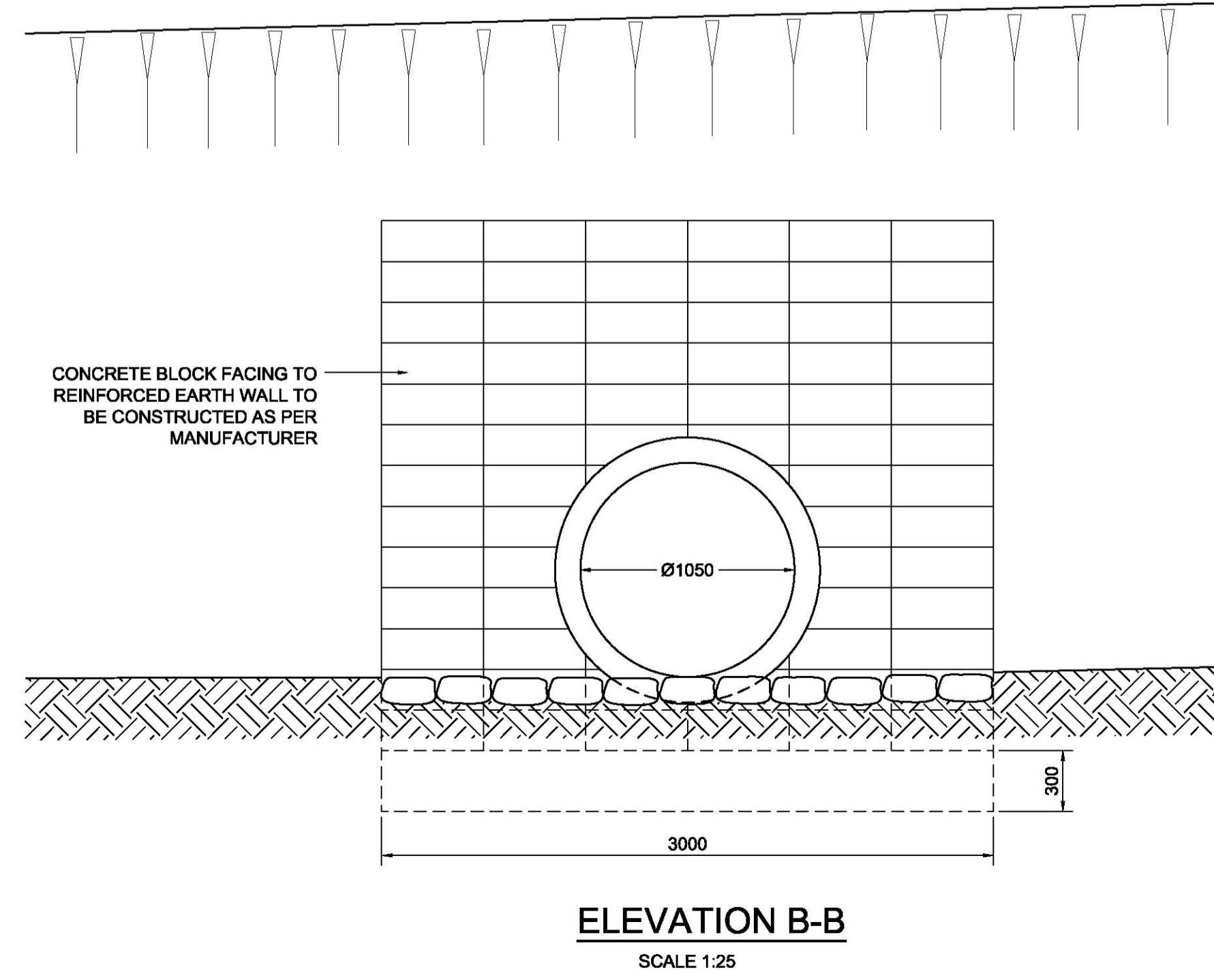
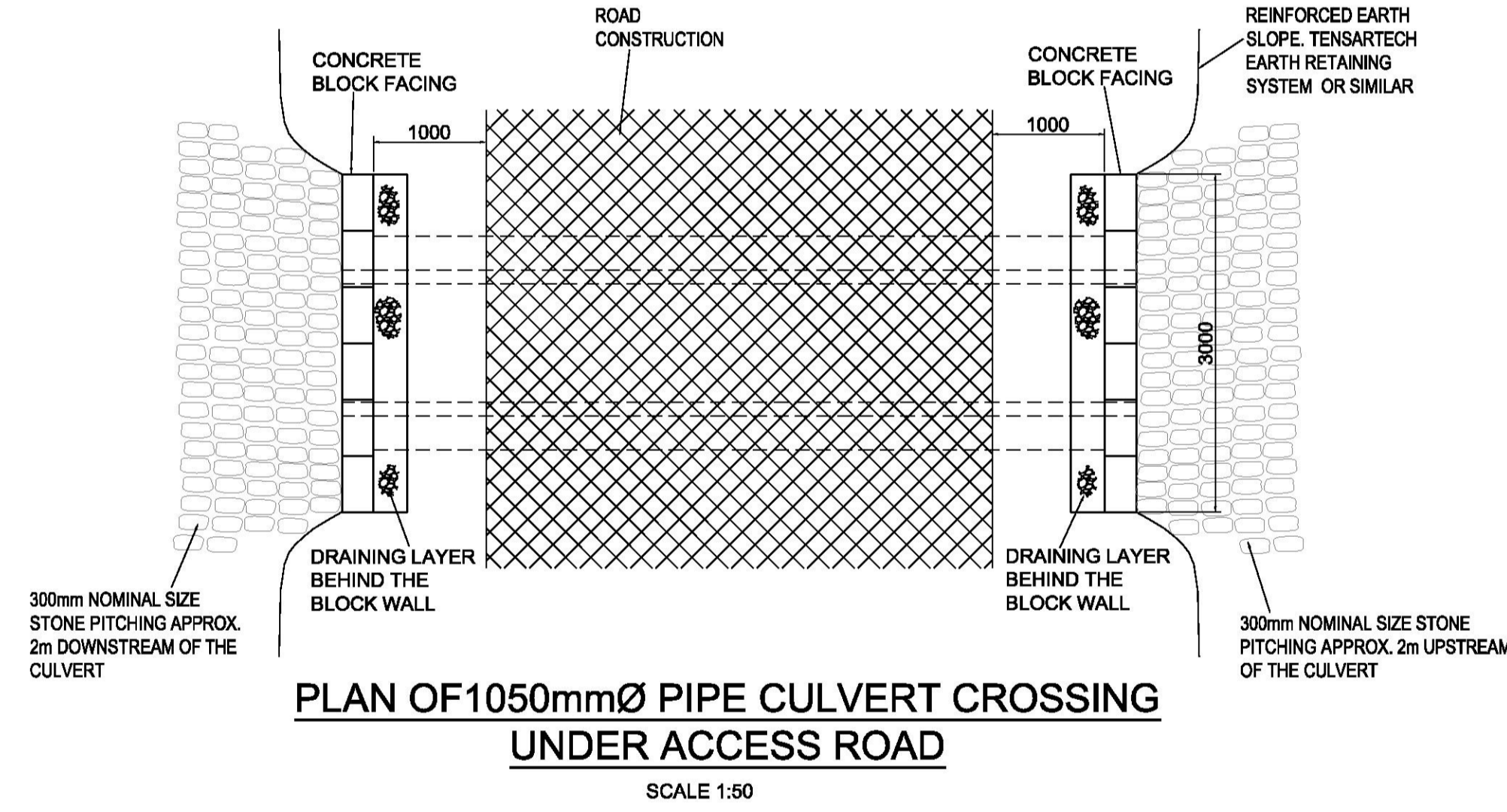
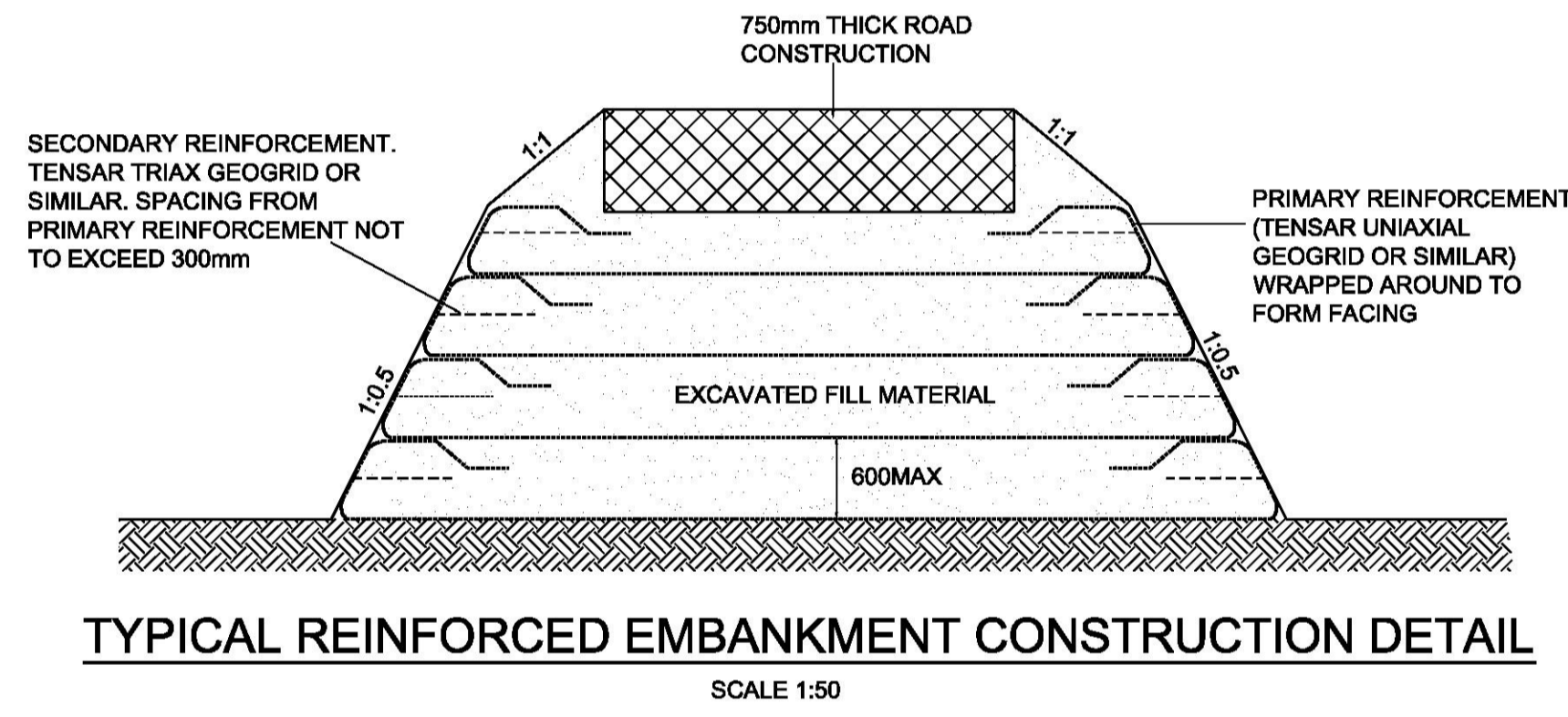
**FIGURE 1.6: CULVERT DESIGN DETAILS**



- GENERAL NOTES**
1. **DO NOT SCALE.** ALL DIMENSIONS ARE IN MILLIMETRES
  2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT CONTRACT DRAWINGS
  3. THE CONTRACTOR SHOULD SITE CHECK ALL EXISTING DIMENSIONS SHOWN. ANY DISCREPANCIES ON THIS DRAWING IDENTIFIED BY THE CONTRACTOR SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER **PRIOR** TO CONSTRUCTION ON SITE
  4. THE CONTRACTOR SHALL CONFORM TO ALL STATUTORY AUTHORITY REQUIREMENTS. CHECKING WITH THE EMPLOYER/CLIENT TO IDENTIFY BOTH BELOW GROUND AND OVERHEAD SERVICES. CONTRACTOR TO FULLY COMPLY WITH ALL CDM, H&S AND PARTY WALL ACTS THAT ARE CURRENT. ALL BS REFERENCES ARE TO CURRENT EDITIONS.
  5. ALL TEMPORARY WORKS FOR FORMWORK, EXCAVATIONS ETC., TO BE THE DESIGN RESPONSIBILITY OF THE CONTRACTOR.
  6. ALL LEVELS ARE IN METRES (A.O.D.)
  7. SIZE OF CULVERT, EXTENT OF STONE PITCHING, EXTENT OF REINFORCED EARTHWORK AND HEIGHT OF CROSSING ARE TO BE DETERMINED FOLLOWING DETAILED DESIGN AND RECEIPT OF DETAILED SITE LEVELS AND WATERCOURSE FLOW ANALYSIS.
  8. APPLICATION OF TENSARTECH WALL SYSTEM AND TENSARTECH EARTH RETAINING SYSTEM OR SIMILAR SPECIALIST PRODUCT REQUIRES SPECIFICATION FROM THE SUPPLIER FOR PRODUCT REQUIRED AND INSTALLATION TECHNIQUES.

- SURVEY NOTES**
1. THE SURVEY INFORMATION USED IN THE PREPARATION OF THIS DRAWING IS NOT WARRANTED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THIS SURVEY INFORMATION PROVIDED PRIOR TO CONSTRUCTION.
  2. ALL SITE INVESTIGATION DATA IS PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY PRIOR TO COMMENCEMENT OF THE WORKS.

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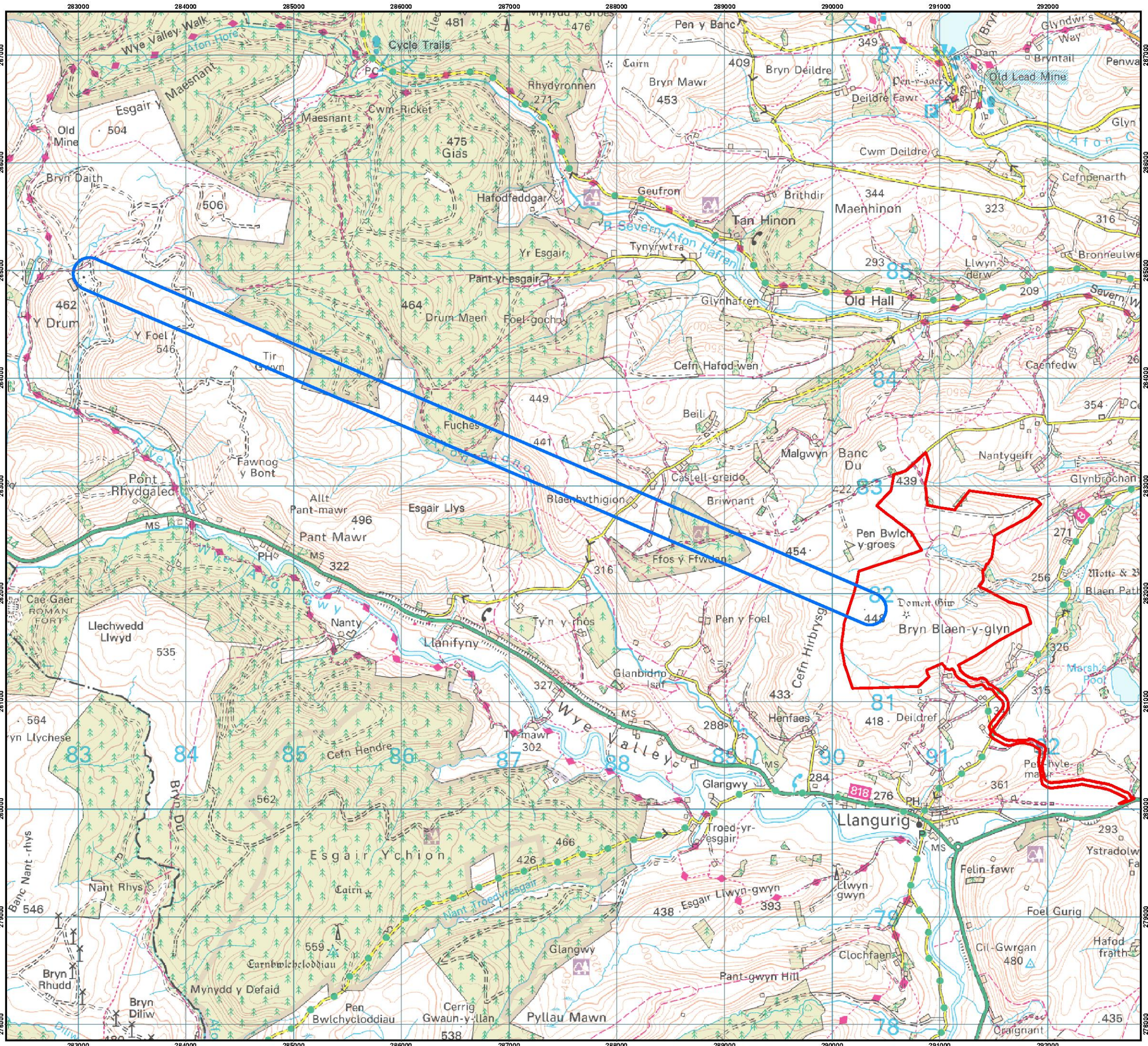


Project:  
**RHOSCROWTHER WINDFARM**

Drawing Title:  
**WATERCOURSE CROSSING DETAILS**

Scale @	A1	Drawn	Date	Checked	Date	Approved	Date
AS SHOWN	BS	08.01.14	PS	08.01.14	PS	08.01.14	
Project No.	Office	Type	Drawing No.	Revision			
A078181	51	C	003				





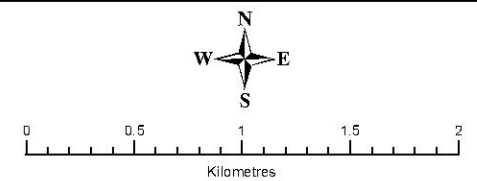
# Bryn Blaen Wind Farm Ltd

Nr Llangurig, Llanidloes, Powys

**Fig. 1.7: Grid Corridor**

- Core study area
- Grid corridor

Drawn by Andy Frost 05/09/2014, Verified by Steven Radford 05/09/2014



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## **Figures 7.1 – 7.11 (Ecology)**

# Bryn Blaen Wind Farm Ltd

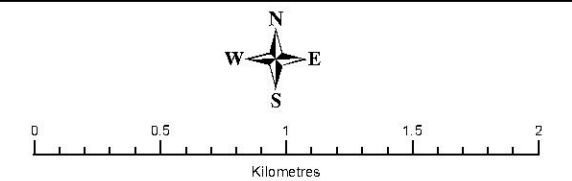
Nr Llangurig, Llanidloes, Powys

**Figure 7.1**  
**Designated Sites within 3km**

-  Core study area
-  Site Boundary 3km Radius
-  Turbine
-  Access Track
-  Site of Specific Scientific Interest
-  Special Area of Conservation
-  Regionally Important Geodiversity Site
-  Wildlife Site



Drawn by Andy Frost 29/08/2014, Verified by Chris Forster-Brown 29/08/2014



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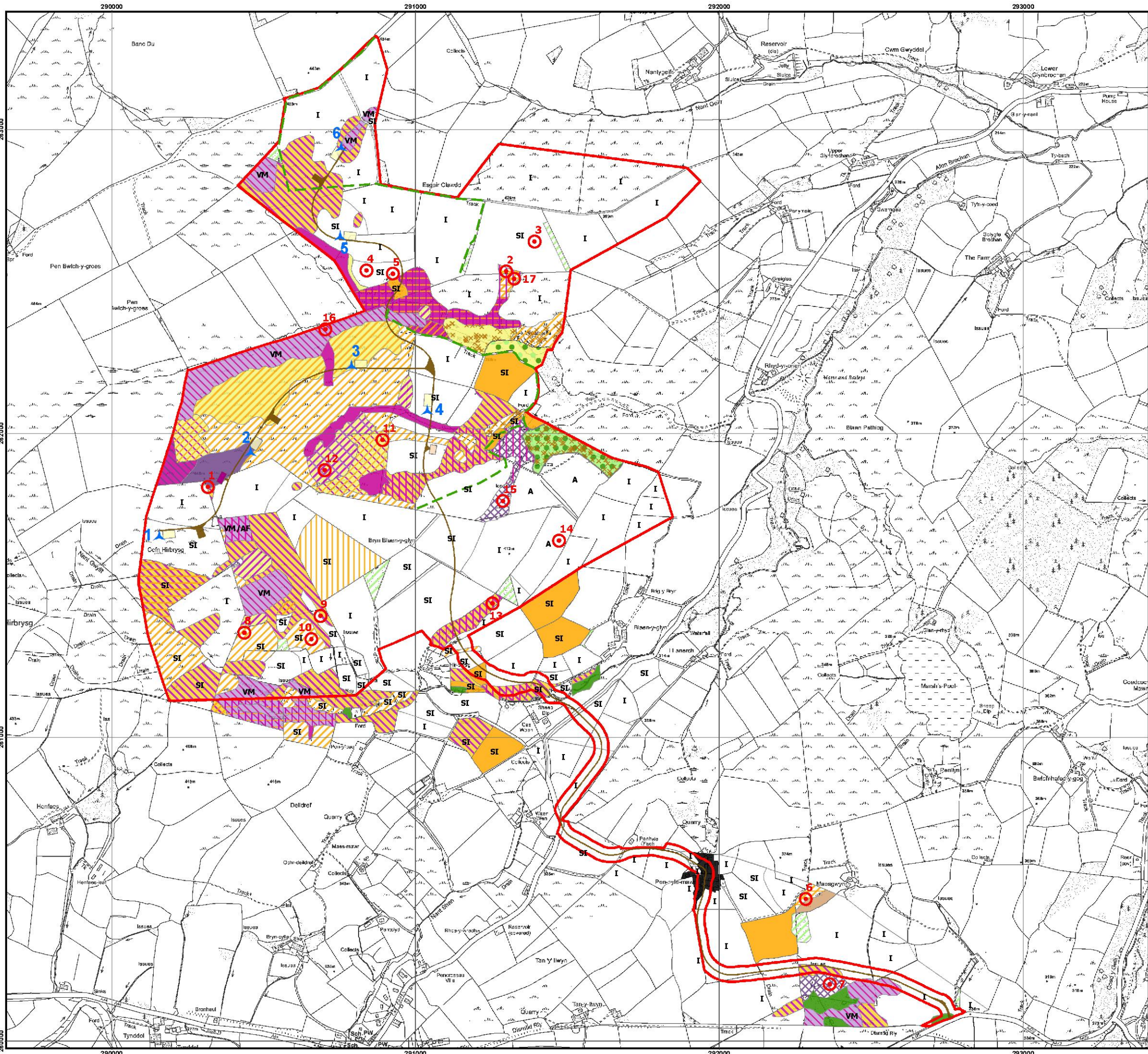
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Nr Llangurig, Llanidloes, Powys

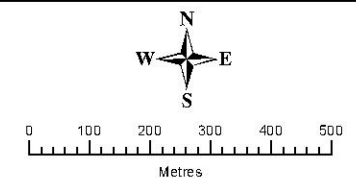
**Figure 7.2  
Phase 1 Habitat Survey**



- Core study area
- Site compound
- ▲ Turbine
- Access Track
- Crane pad
- Recreational track
- Substation

- | Habitat type   | Habitat overlay  |
|--|--|
| <span style="background-color: green; width: 15px; height: 10px; margin-right: 5px;"></span> Broadleaved woodland              | <span style="background-color: #c8e6c9; width: 15px; height: 10px; margin-right: 5px;"></span> Mixed woodland                  |
| <span style="background-color: #c8e6c9; width: 15px; height: 10px; margin-right: 5px;"></span> Coniferous plantation           | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Unimproved acid grassland       |
| <span style="background-color: #c8e6c9; width: 15px; height: 10px; margin-right: 5px;"></span> Mixed woodland                  | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Semi-improved acid grassland    |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Unimproved acid grassland       | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Unimproved neutral grassland    |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Semi-improved acid grassland    | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Semi-improved neutral grassland |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Semi-improved neutral grassland | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Marsh/marshy grassland          |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Improved grassland              | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Poor semi-improved grassland    |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Marsh/marshy grassland          | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Scattered bracken               |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Poor semi-improved grassland    | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Blanket bog                     |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Continuous bracken              | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Dry modified bog                |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Acid dry dwarf shrub heath      | <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Acid/neutral flush/spring       |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Wet dwarf shrub heath           |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Dry heath/acid grassland mosaic |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Wet heath/acid grassland mosaic |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Blanket bog                     |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Wet modified bog                |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Dry modified bog                |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Acid/neutral flush/spring       |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Valley mire                     |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Arable                          |  |
| <span style="background-color: #fff9c4; width: 15px; height: 10px; margin-right: 5px;"></span> Buildings                       |  |
| <span style="color: red; font-size: 1.2em;">①</span> Target note   |  |

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# Bryn Blaen Windfarm Ltd

Nr Llangurig, Llanidloes, Powys

**Figure 7.3**  
**National Vegetation Classification Survey**



**Main National Vegetation Classifications**

- H8 *Calluna vulgaris-Ulex gallii* heath
- H12 *Calluna vulgaris-Vaccinium myrtillus* heath
- H21 *Calluna vulgaris-Vaccinium myrtillus-Sphagnum capillifolium* heath
- M2 *Sphagnum cuspidatum/recurvum* bog pool community
- M3 *Eriophorum angustifolium* bog pool community
- M6 *Carex echinata-Sphagnum recurvum/auriculatum* mire
- M9 *Carex rostrata-Calliergon cuspidatum/giganteum* mire
- M10 *Carex dioica-Pinguicula vulgaris* mire
- M15 *Scirpus cespitosus-Erica tetralix* wet heath
- M17 *Scirpus cespitosus-Eriophorum vaginatum* blanket mire
- M19 *Calluna vulgaris-Eriophorum vaginatum* blanket mire
- M20 *Eriophorum vaginatum* blanket and raised mire
- M23 *Juncus effusus/lacustris-Galium palustre* rush-pasture
- M25 *Molinia caerulea-Potentilla erecta* mire
- M28 *Iris pseudacorus-Filipendula ulmaria* mire
- M29 *Hypericum elodes-Potamogeton polygonifolius* soakway
- M35 *Ranunculus omiphylus-Montia fontana* silt
- MG6 *Lolium perenne-Cynosurus cristatus* grassland
- MG7 *Lolium perenne* leys and related grasslands
- MG10 *Holcus lanatus-Juncus effusus* rush-pasture
- N19 *Vaccinium oxycoccus-Sphagnum recurvum* nodum
- U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland
- U5 *Nardus stricta-Galium saxatile* grassland
- U6 *Juncus squarrosus-Festuca ovina* grassland
- U20 *Pteridium aquilinum-Galium saxatile* community
- W1 *Salix cinerea-Galium palustre* woodland

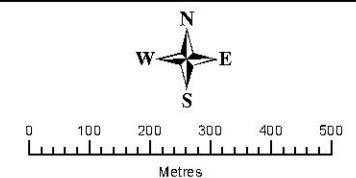
**Locally Dominant Species**

- Je *Juncus effusus*
- Ev *Eriophorum vaginatum*
- Sf *Sphagnum fallax*
- Ug *Ulex gallii*

**Other codes**

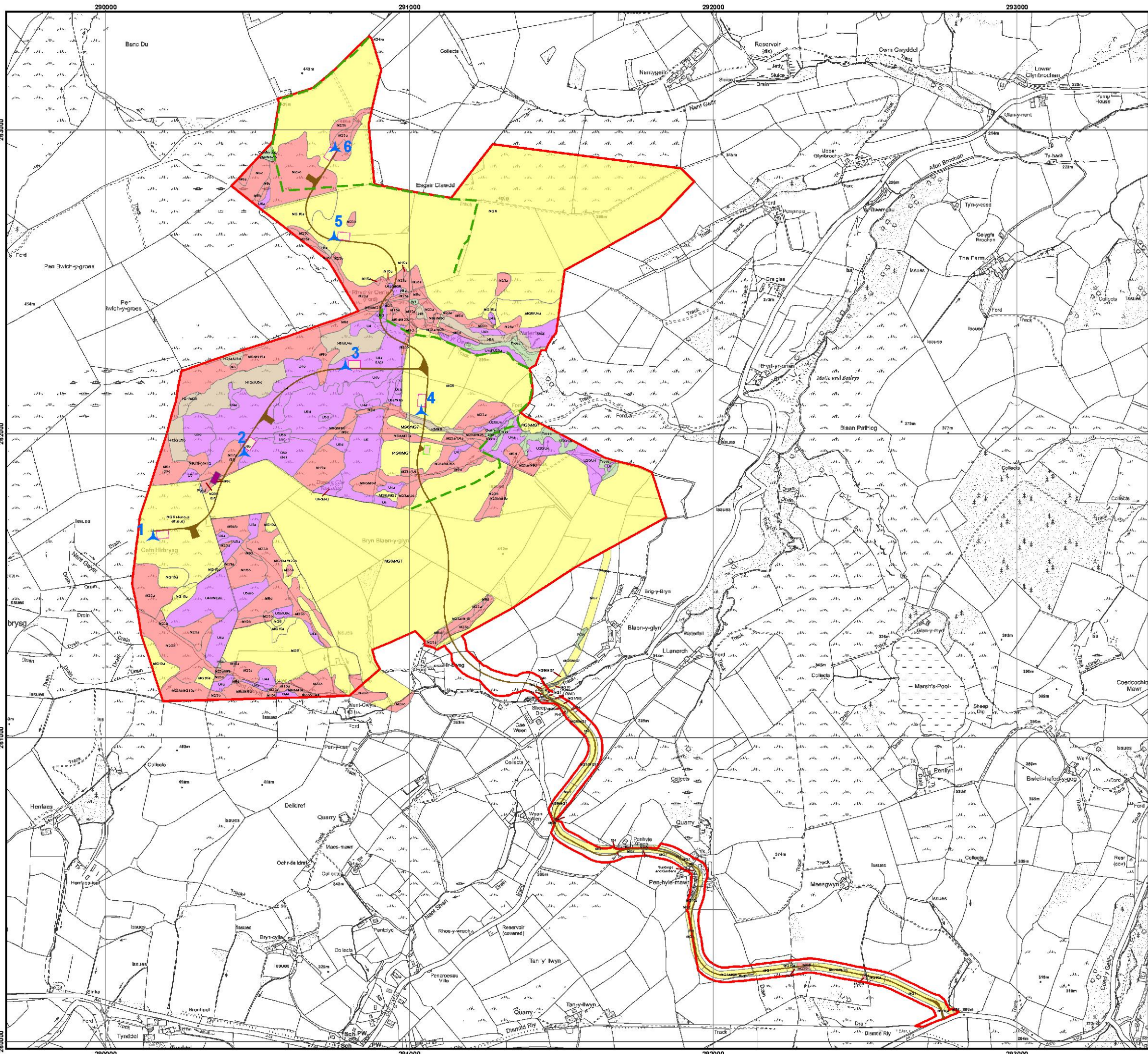
- BG Bare ground
- RWO Running water - Oligotrophic
- RHT Species-rich hedge with trees
- PHT Species-poor hedge with trees
- PH Species poor hedge
- SBW Scattered broadleaved woodland
- PCW Coniferous woodland

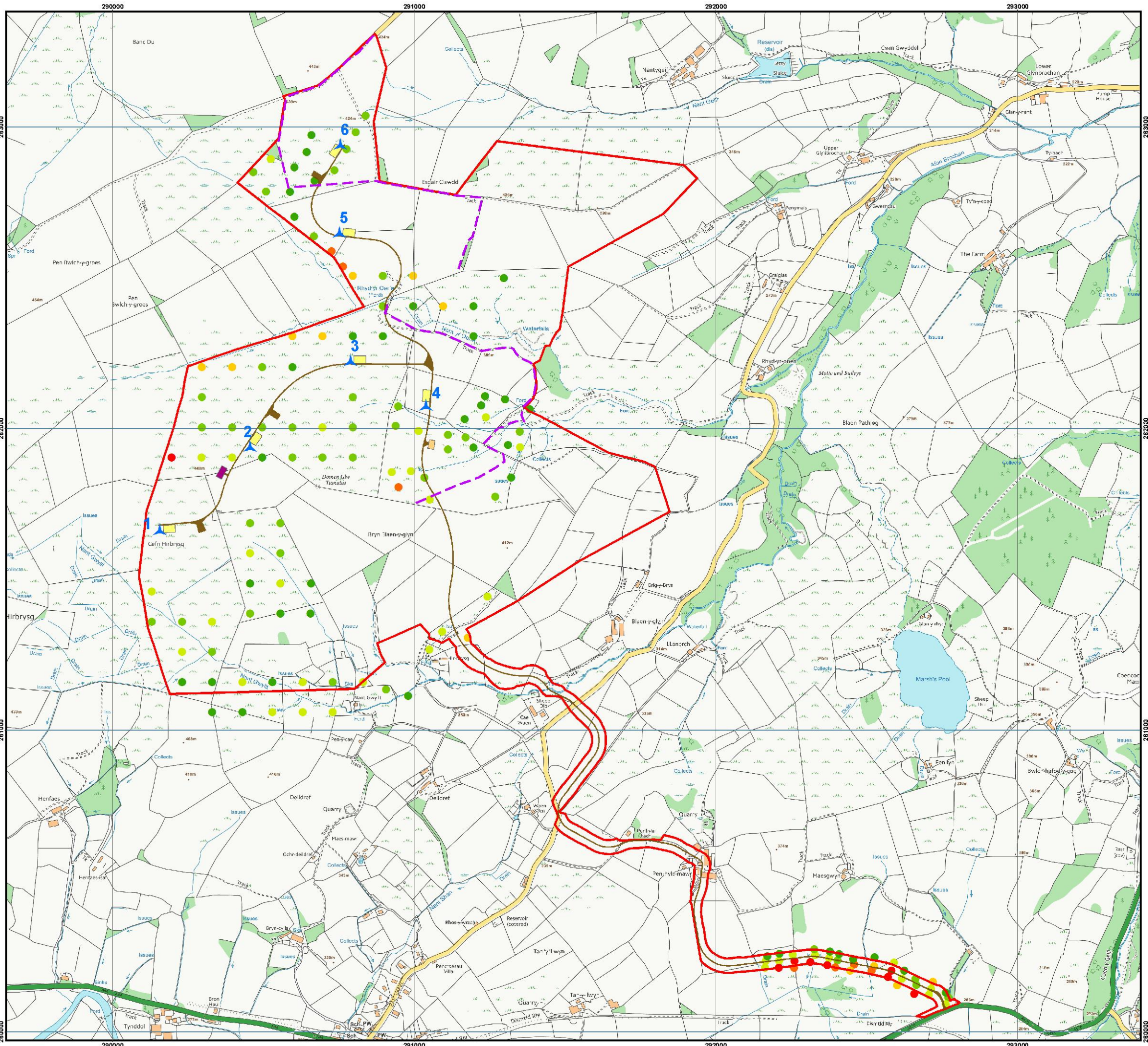
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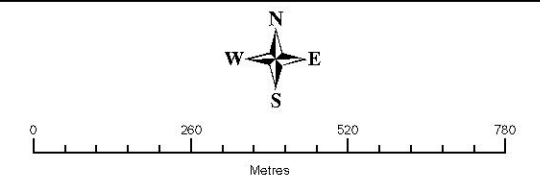
Llangurig, Llanidloes, Powys

**Figure 7.4  
Peat Probing**

- Core study area
- ▲ Turbine
- Crane pad
- Substation
- Site compound
- Access Track
- Recreational track

- Peat depth**
- 0 - 0.24m
  - 0.25 - 0.49m
  - 0.50 - 0.74m
  - 0.75 - 0.99m
  - 1.00 - 1.24m
  - 1.25 - 1.50m

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







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# Bryn Blaen Wind Farm Ltd.

Nr Llangurig, Llanidloes, Powys

**Figure 7.5  
Brown and Shepherd  
Breeding Bird Survey**

-  Core study area
-  Turbine
-  Crane pad
-  Substation
-  Site compound
-  Access track
-  Recreational track
-  Visit 1
-  Visit 2
-  Visit 3

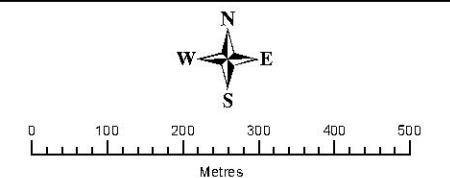
### Species symbols

- CK - Cuckoo
- CU - Curlew
- KT - Red Kite
- L - Lapwing
- LI - Linnet
- LR - Redpoll (lesser)
- RB - Reed Bunting
- TP - Tree Pipit

### Notes:

- \* Where species symbol is underlined then bird is calling
- \* Where species symbol is circled then bird is singing
- \* Where species is the same individual it is shown by a line with no arrow
- \* Survey area encompassed all open areas within the survey boundary (including agricultural land, clearfelled land and other open areas within forestry).

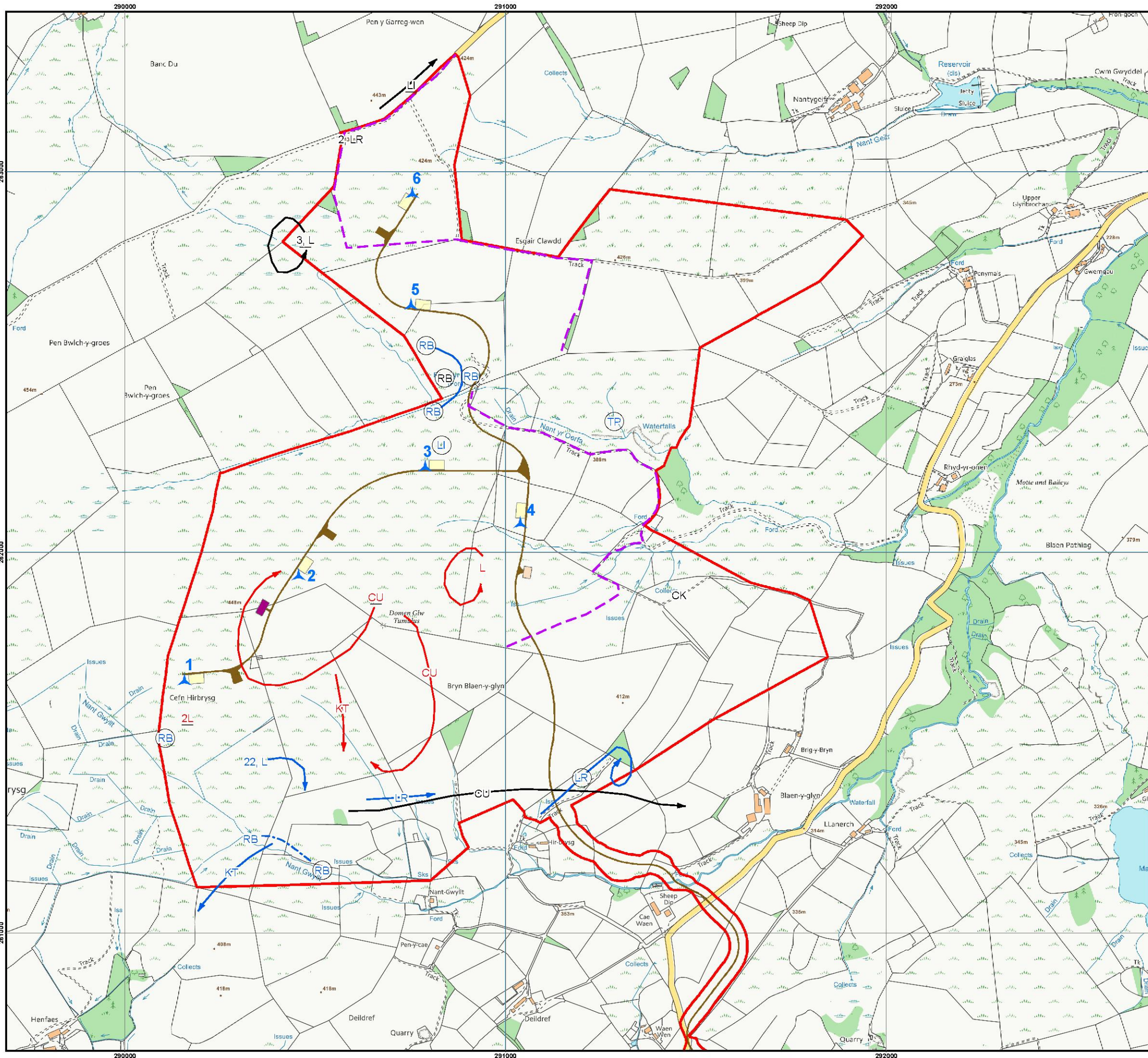
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# Bryn Blaen Wind Farm Ltd.

Nr Llangurig, Llanidloes, Powys

**Figure 7.6a**  
**Flight Lines Winter Walkover**  
**Birds of Prey**

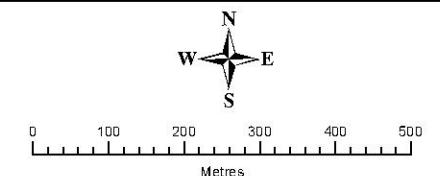
-  Core study area
-  Turbine
-  Crane pad
-  Substation
-  Site compound
-  Access track
-  Recreational track
-  Visit 1
-  Visit 2
-  Visit 3
-  Visit 4
-  Visit 5

Notes:  
 \* Where species symbol is underlined then bird is calling  
 \* Where species symbol is circled then bird is singing  
 \* Where species is the same individual it is shown by a line with no arrow  
 \* Survey area encompassed all open areas within the survey boundary (including agricultural land, clearfelled land and other open areas within forestry).

### Species symbols

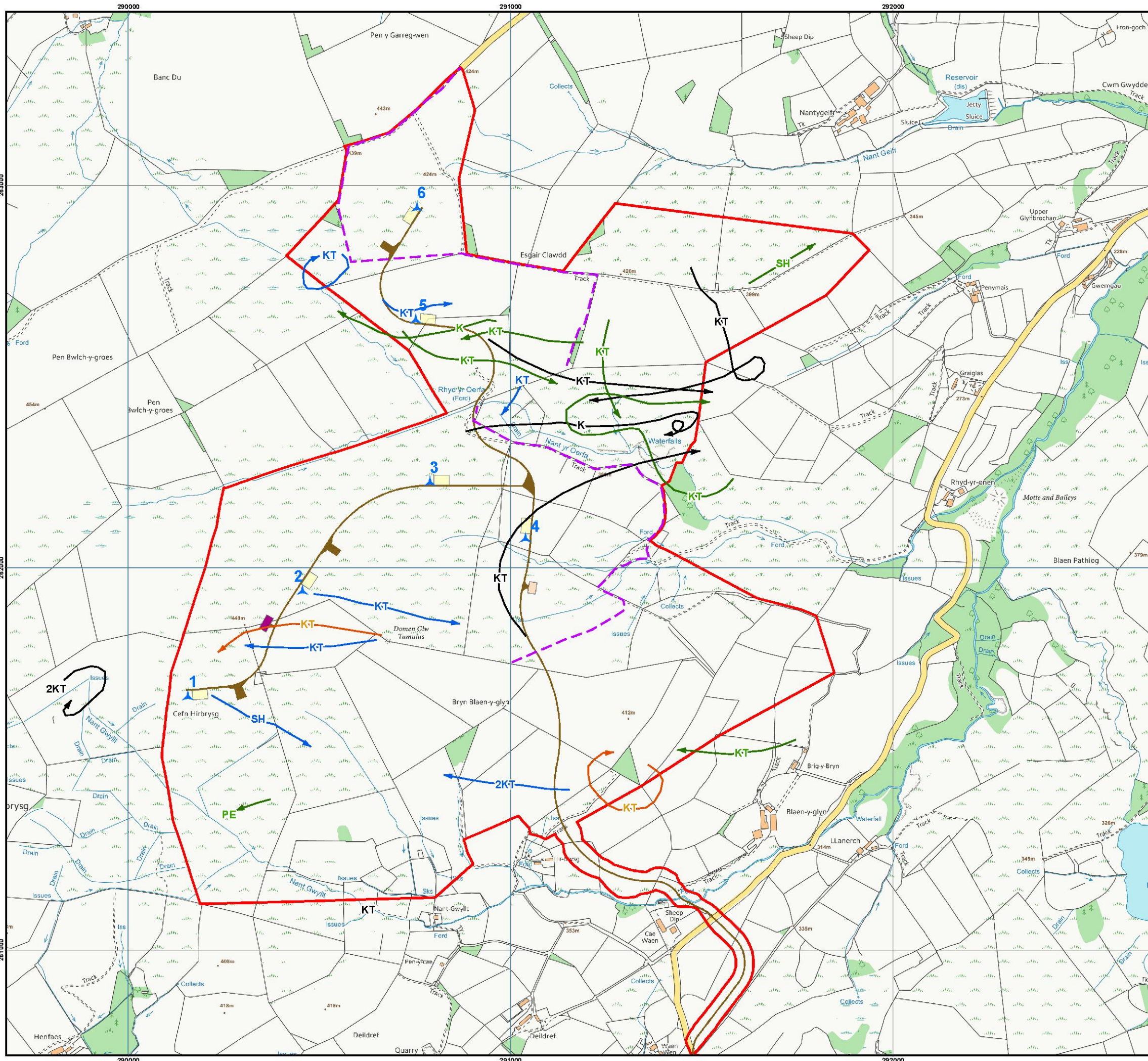
- K - Kestrel
- KT - Red Kite
- PE - Peregrine
- SH - Sparrowhawk

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# Bryn Blaen Wind Farm Ltd.

Nr Llangurig, Llanidloes, Powys

**Figure 7.6b**  
**Winter Walkover Bird Survey**  
**Waders**

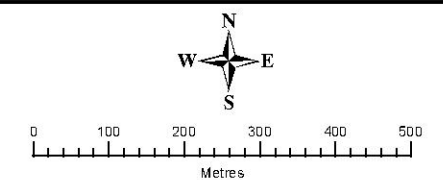
- Core study area
- ▲ Turbine
- Crane pad
- Substation
- Site compound
- Access track
- Recreational track
- Visit 1
- Visit 2
- Visit 3
- Visit 4
- Visit 5

Notes:  
 \* Where species symbol is underlined then bird is calling  
 \* Where species symbol is circled then bird is singing  
 \* Where species is the same individual it is shown by a line with no arrow  
 \* Survey area encompassed all open areas within the survey boundary (including agricultural land, clearfelled land and other open areas within forestry).

### Species symbols

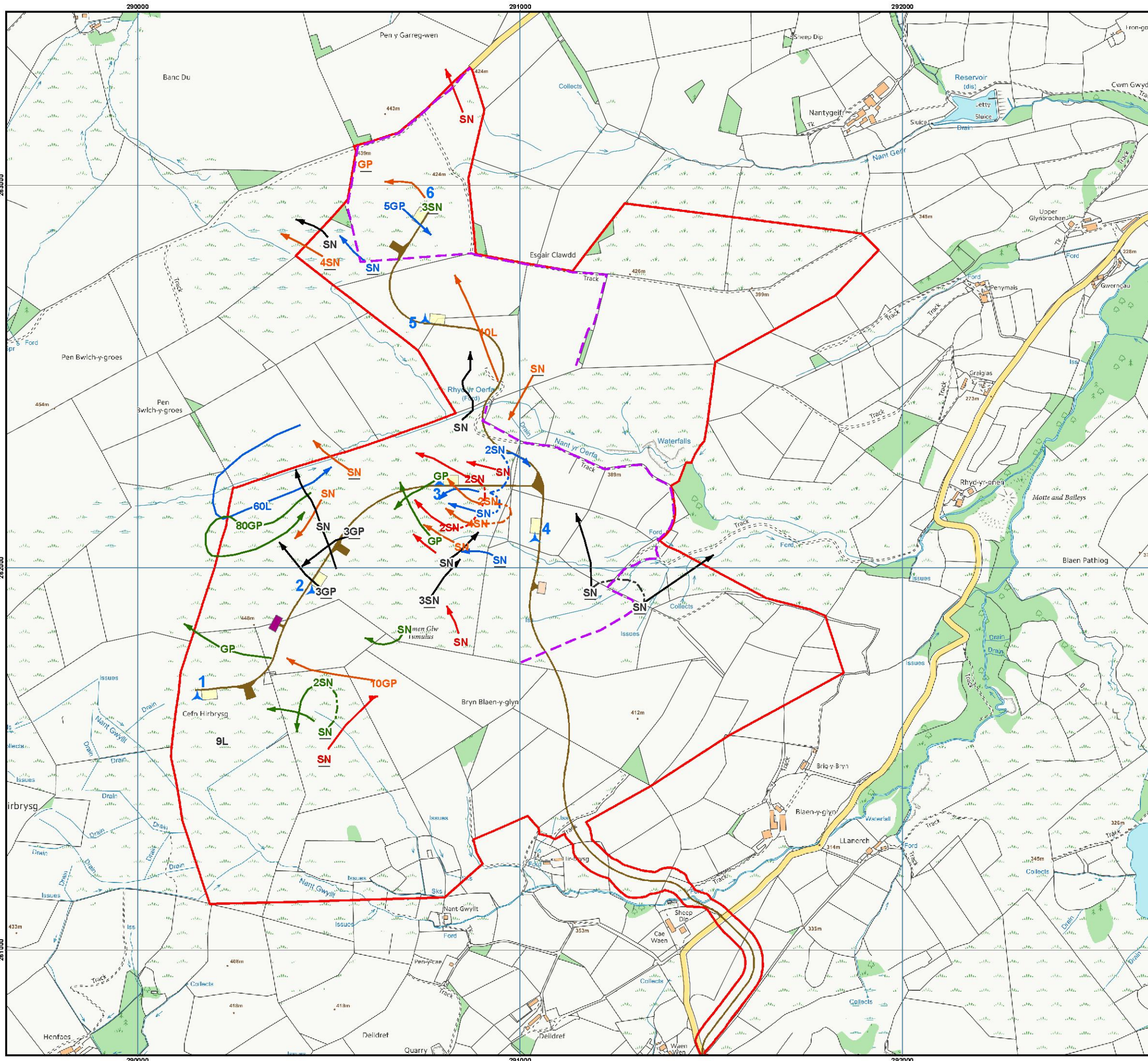
- GP - Golden Plover
- L - Lapwing
- SN - Snipe

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# Bryn Blaen Wind Farm Ltd.

Nr Llangurig, Llanidloes, Powys

**Figure 7.6c  
Winter Walkover Bird Survey  
Target Species Excluding  
Waders & Birds of Prey**

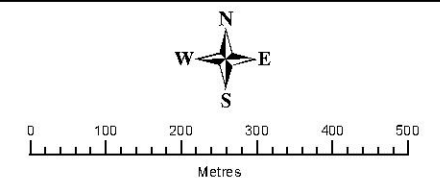
- Core study area
- ▲ Turbine
- Crane pad
- Substation
- Site compound
- Access track
- Recreational track
- Visit 1
- Visit 2
- Visit 3
- Visit 4
- Visit 5

Notes:  
 \* Where species symbol is underlined then bird is calling  
 \* Where species symbol is circled then bird is singing  
 \* Where species is the same individual it is shown by a line with no arrow  
 \* Survey area encompassed all open areas within the survey boundary (including agricultural land, clearfelled land and other open areas within forestry).

### Species symbols

- FF - Fieldfare
- HG - Herring Gull
- RE - Redwing
- SG - Starling

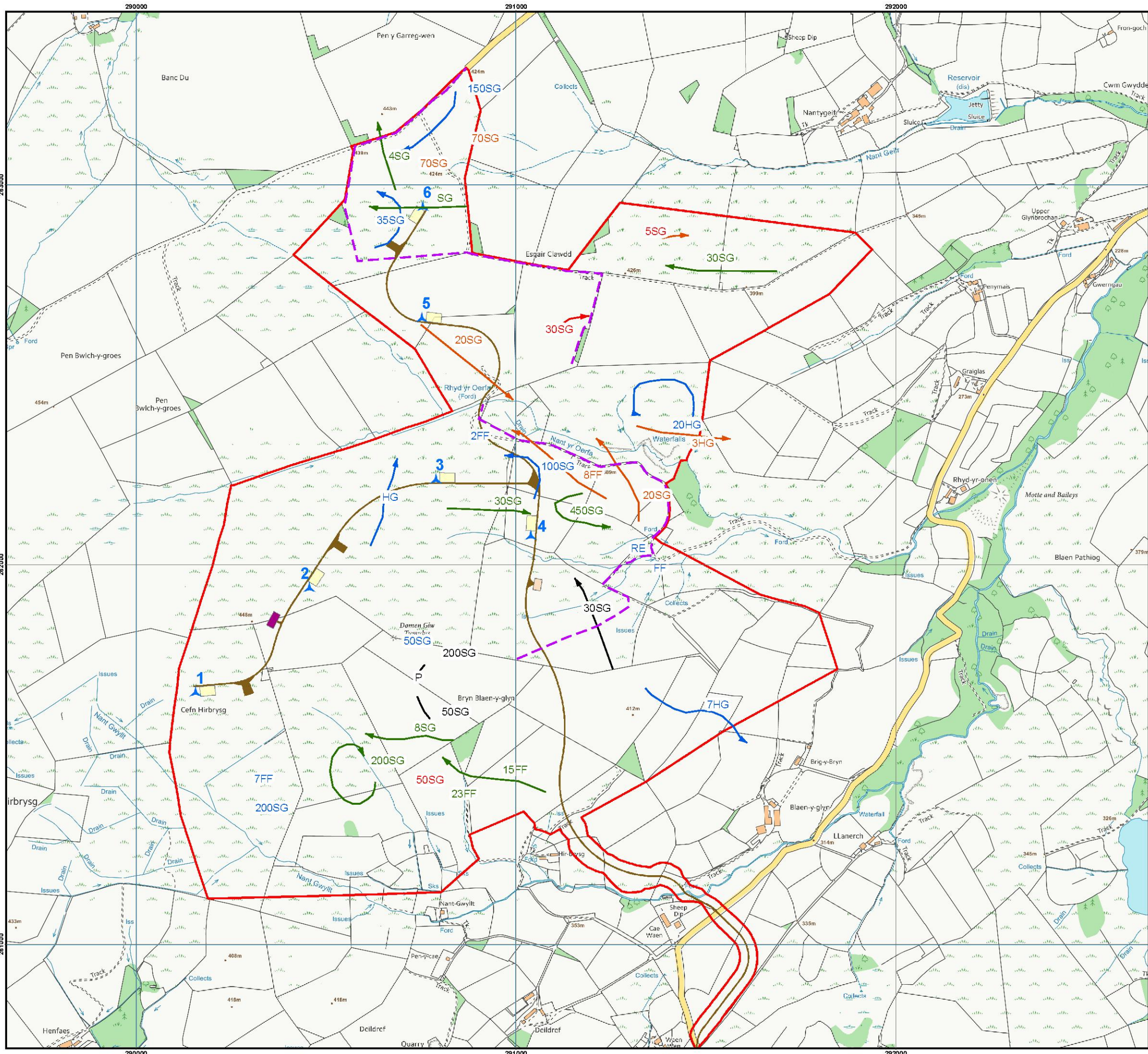
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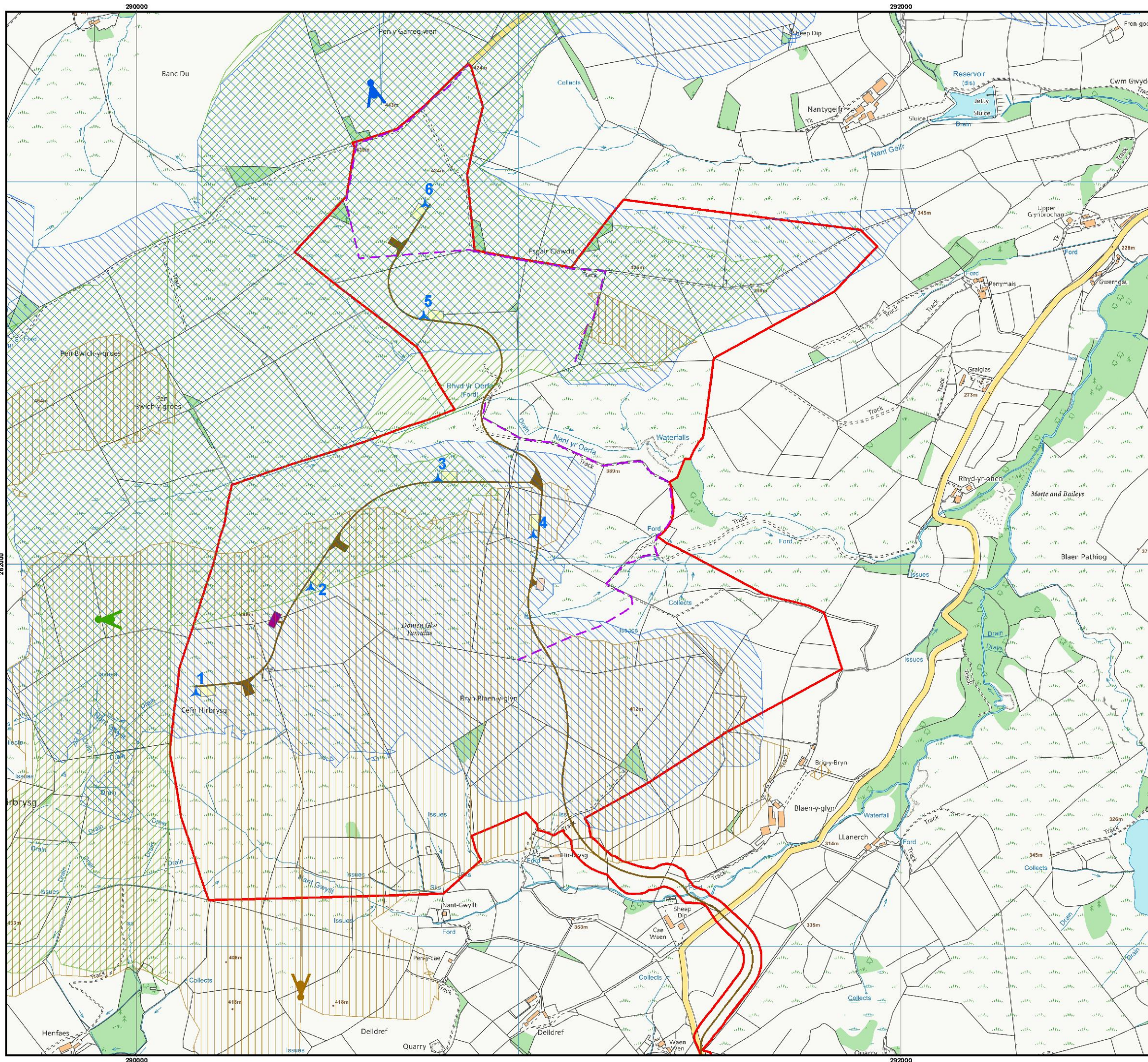


# Bryn Blaen Wind Farm Ltd.

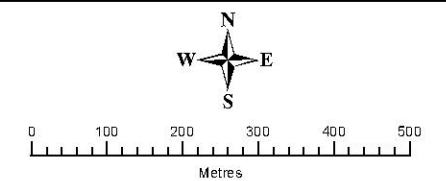
Nr Llangurig, Llanidloes, Powys

**Figure 7.7  
Viewpoint Viewsheds**

- Core study area
- Turbine
- Crane pad
- Substation
- Site compound
- Access track
- Recreational track
- Vantage Point**
- VP1
- VP2
- VP3
- View from VP1
- View from VP2
- View from VP3



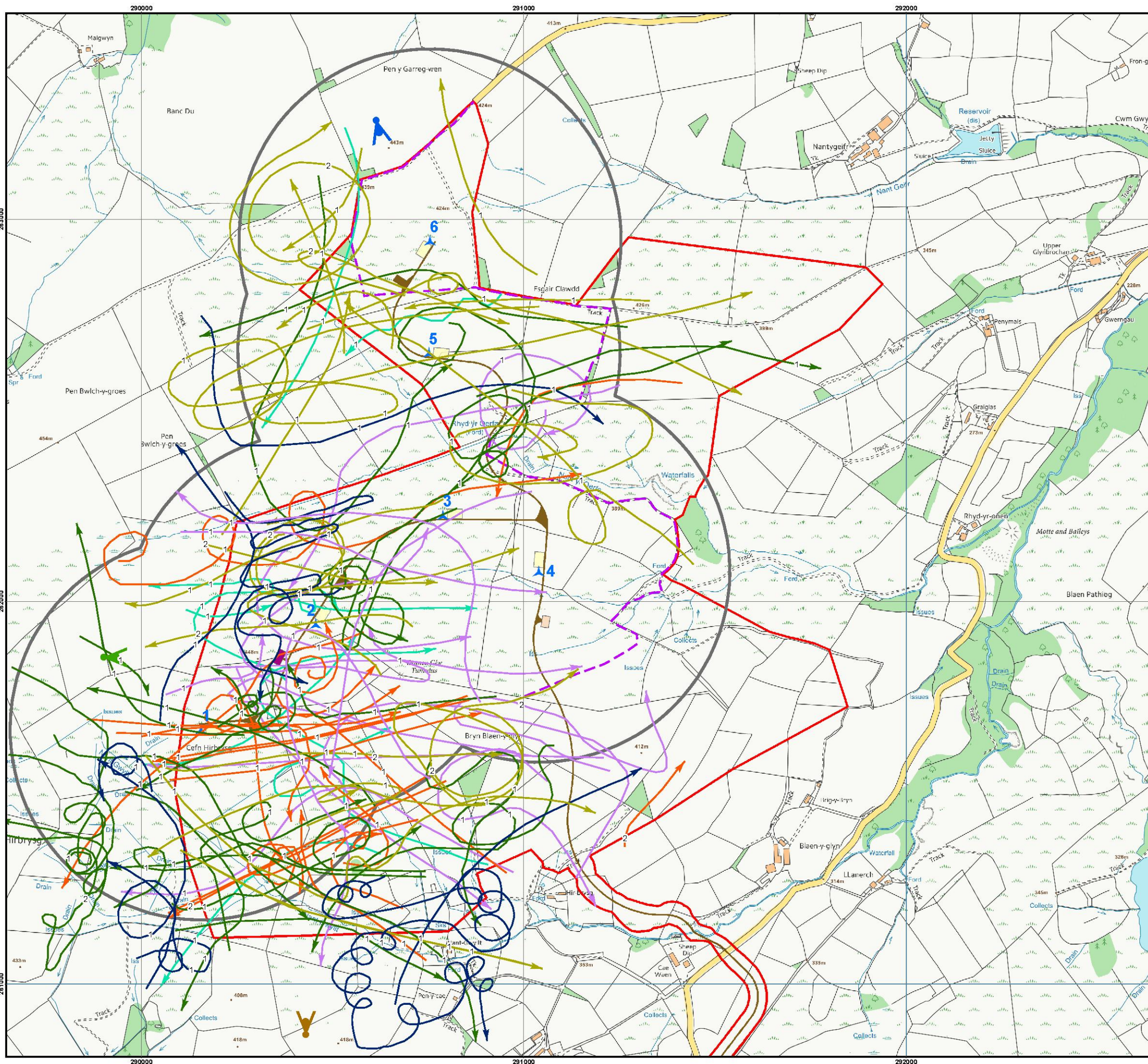
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# Bryn Blaen Wind Farm Ltd.

Nr Llangurig, Llanidloes, Powys

**Figure 7.8a**  
**Flight Lines Red Kite - Breeding Season**

- Core study area
- ▲ Turbine
- Turbine 500m radius
- Crane pad
- Substation
- Site compound
- Access track
- Recreational track

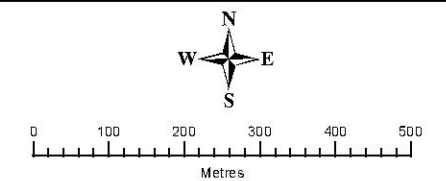
### Vantage Point

- ▲ VP1
- ▲ VP2
- ▲ VP3

### Month

- March
- April
- May
- June
- July
- August

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
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# Bryn Blaen Wind Farm Ltd.

Nr Llangurig, Llanidloes, Powys







**Figure 7.8b**  
**Flight Lines Red Kite**  
**Non-Breeding Season**

-  Core study area
-  Turbine
-  Turbine 500m radius
-  Crane pad
-  Substation
-  Site compound
-  Access track
-  Recreational track

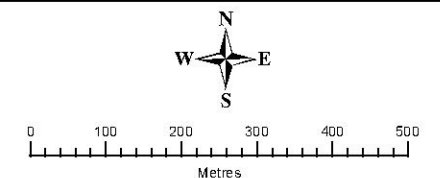
**Vantage Point**

-  VP1
-  VP2
-  VP3

**Month**

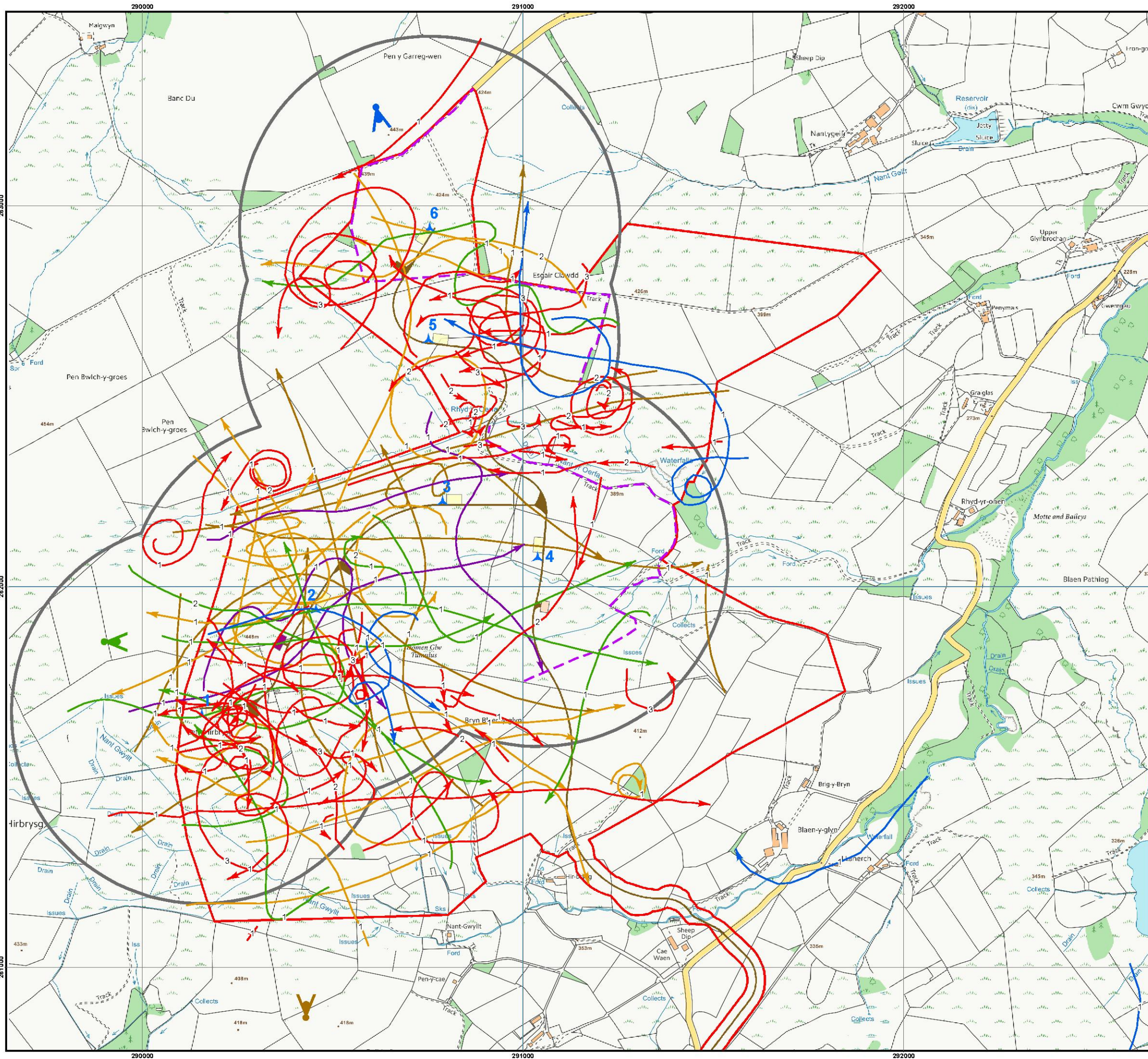
-  September
-  October
-  November
-  December
-  January
-  February

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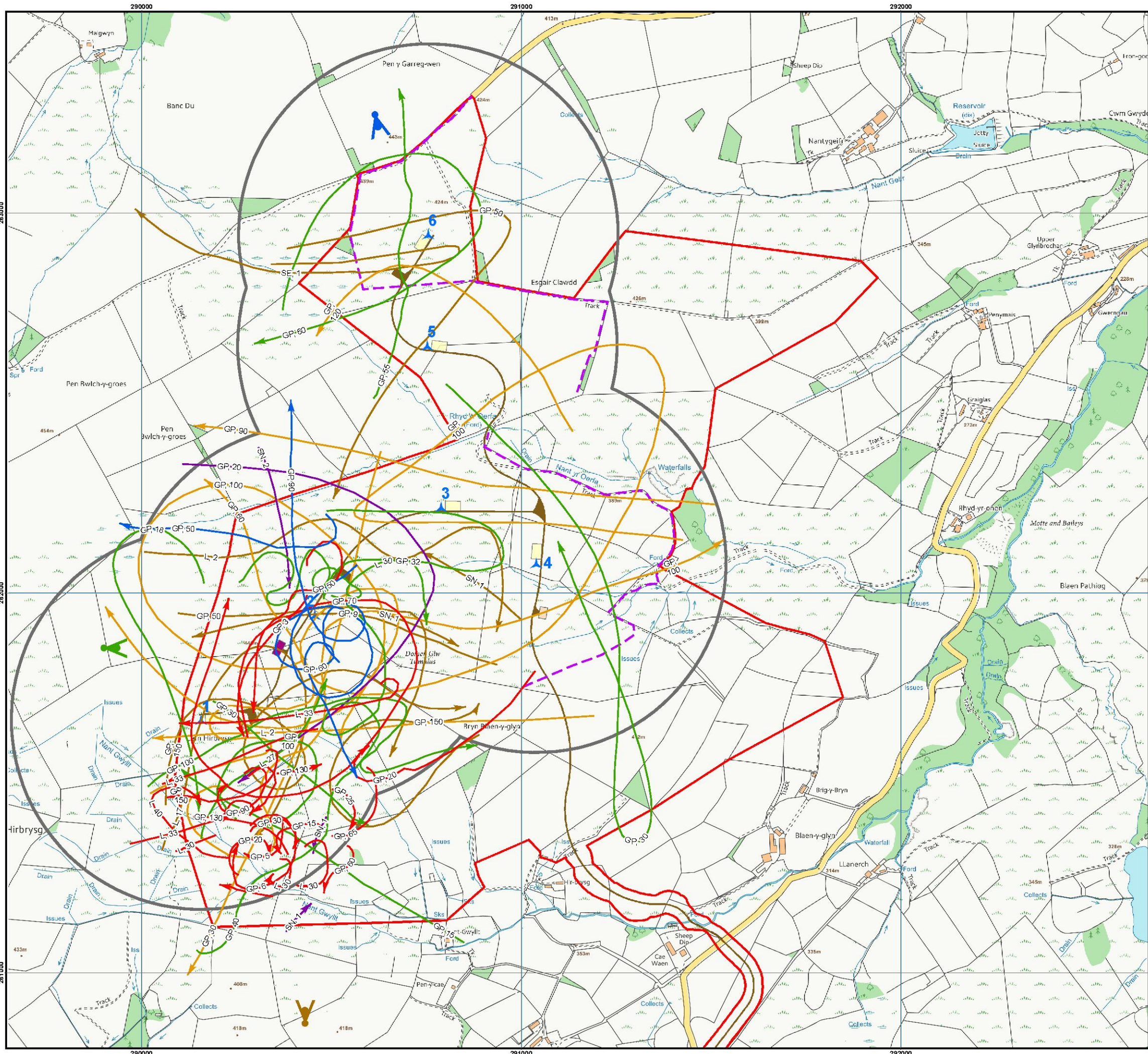
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# Bryn Blaen Wind Farm Ltd.

Nr Llangurig, Llanidloes, Powys

**Figure 7.8c**  
**Flight Lines Target Species Other Than Red Kite - Non-Breeding Season**



- Core study area
- ▲ Turbine
- Turbine 500m radius
- Crane pad
- Substation
- Site compound
- Access track
- Recreational track

**Vantage Point**

- ▲ VP1
- ▲ VP2
- ▲ VP3

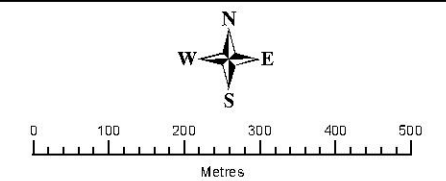
**Month**

- September
- October
- November
- December
- January
- February

**Species symbols**

- GP - Golden Plover
- L - Lapwing
- SE - Short-eared Owl
- SN - Snipe

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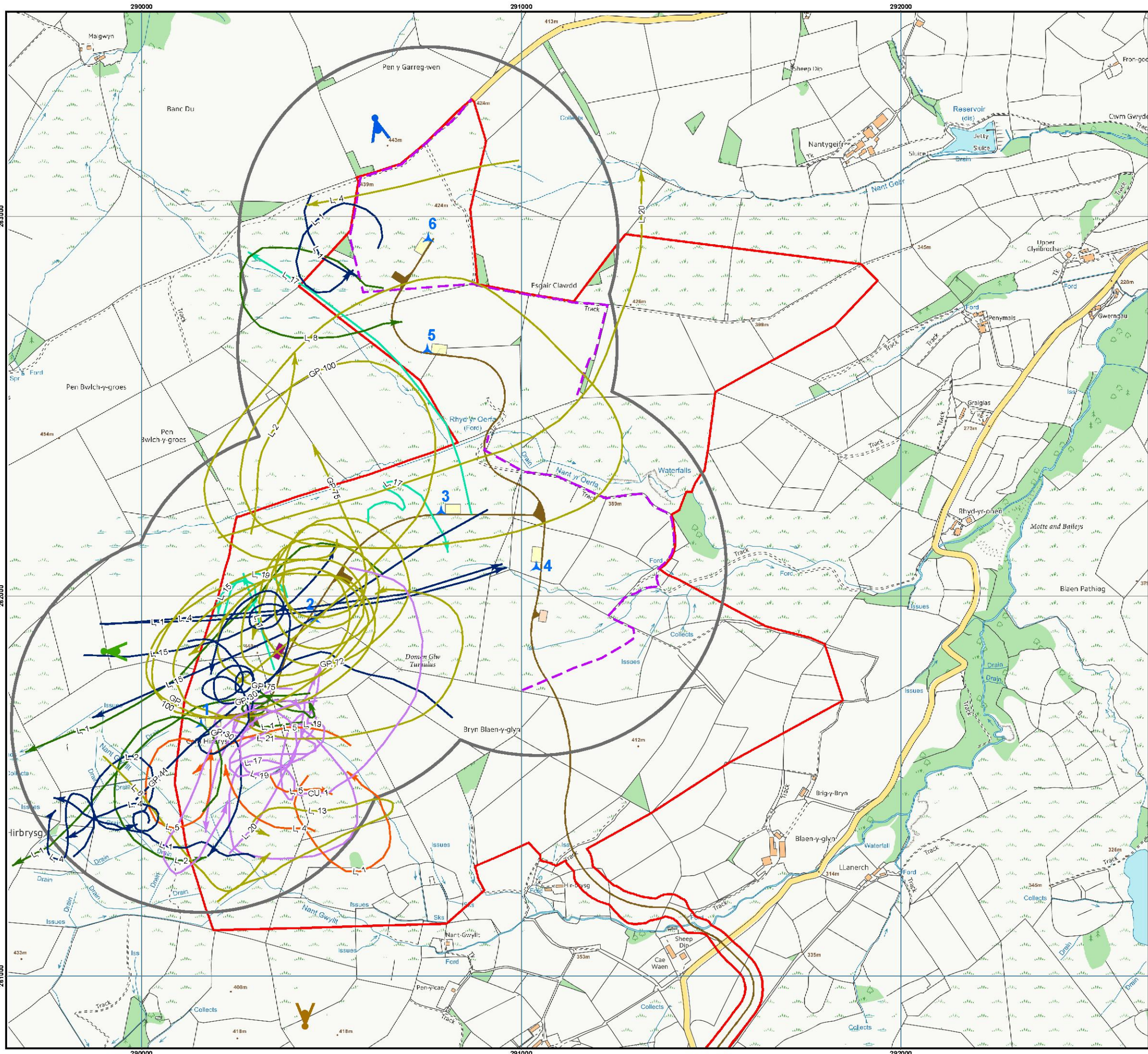
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# Bryn Blaen Wind Farm Ltd.

Nr Llangurig, Llanidloes, Powys

**Figure 7.8d**  
**Flight Lines Target Species Other Than Red Kite - Breeding Season**



- Core study area
- Turbine 500m radius
- ▲ Turbine
- Crane pad
- Site compound
- Substation
- Access track
- Recreational track

**Vantage Point**

- ▲ VP1
- ▲ VP2
- ▲ VP3

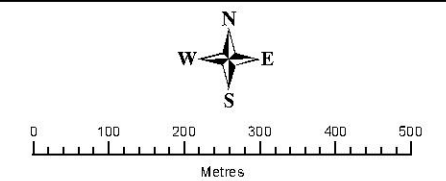
**Month**

- March
- April
- May
- June
- July
- August

**Species symbols**

- C - Curlew
- GP - Golden Plover
- L - Lapwing

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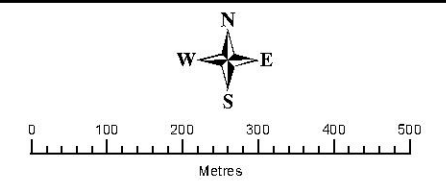
# Bryn Blaen Wind Farm Ltd.

Llangurig, Llanidloes, Powys

**Figure 7.9**  
**Bat Transects and**  
**Static Monitoring Positions**

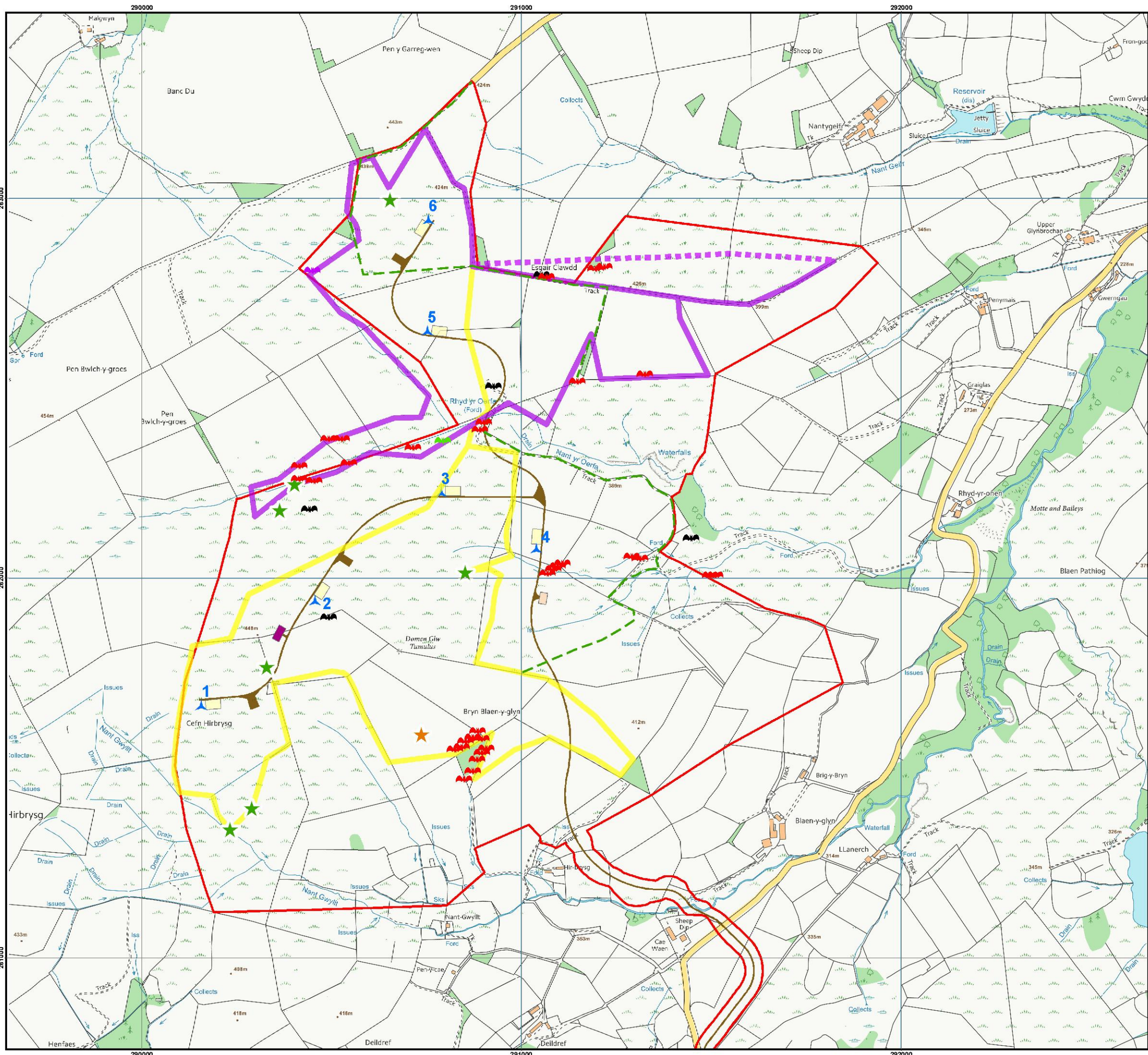
- Core study area
- ▲ Turbine
- Crane pad
- Substation
- Site compound
- Access track
- Recreational track
- Bat Transect**
- Transect 1
- Transect 2
- Occasional Change or Addition to Route
- Song Meter**
- ★ Green = 3 surveys
- ★ Amber = 2 surveys
- Bat Locations**
- ▲▲ Common pipistrelle
- ▲▲ Myotis
- ▲▲ Noctule
- ▲▲ Soprano pipistrelle

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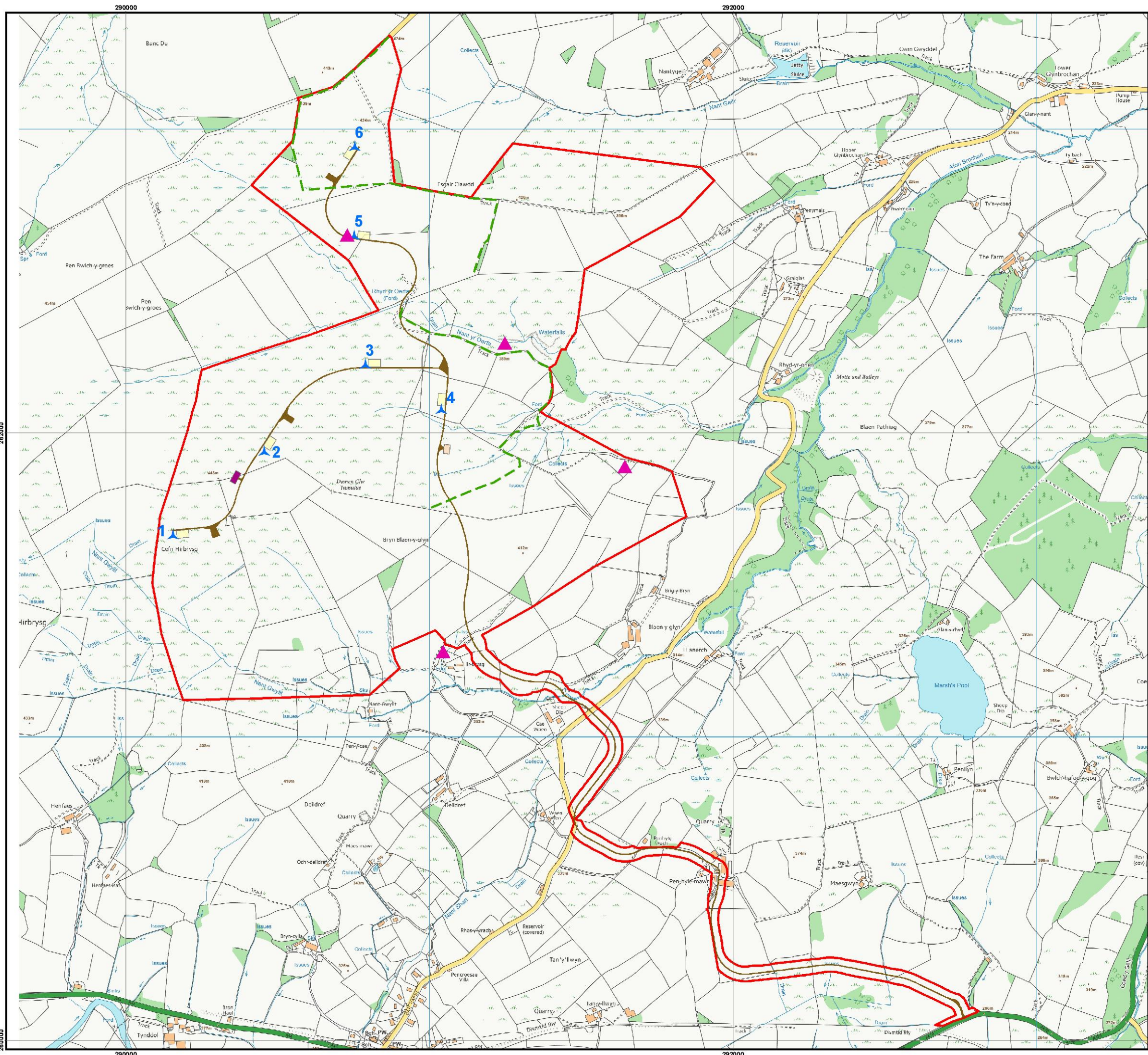


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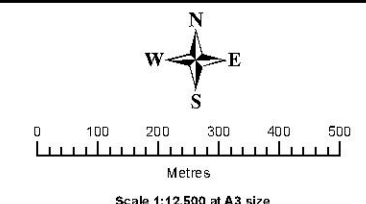
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Llangurig, Llanidloes, Powys

**Figure 7.10**  
**Confidential Badger Sett Locations**

- Core study area
- ▲ Turbine
- Crane pad
- Substation
- Site compound
- Access track
- Recreational track
- ▲ Badger Sett

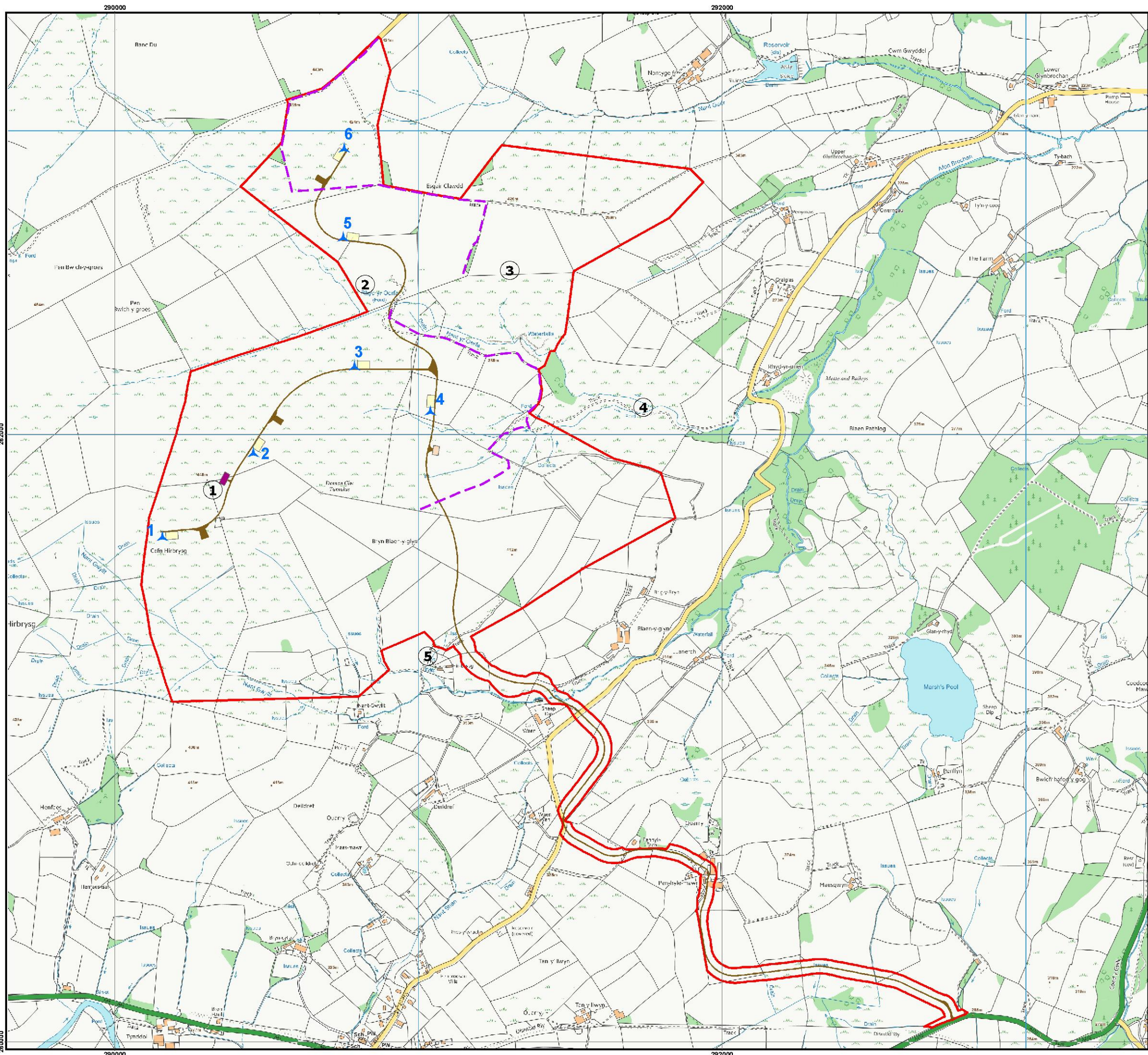
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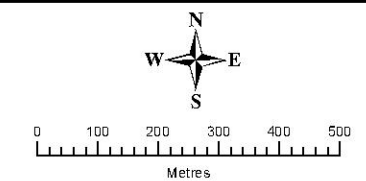
# Bryn Blaen Wind Farm Ltd.

Llangurig, Llanidloes, Powys

**Figure 7.11**  
**Great Crested Newt Ponds Surveyed**

- Core study area
- ▲ Turbine
- Crane pad
- Substation
- Site compound
- Access track
- Recreational track
- 1 Ponds surveyed

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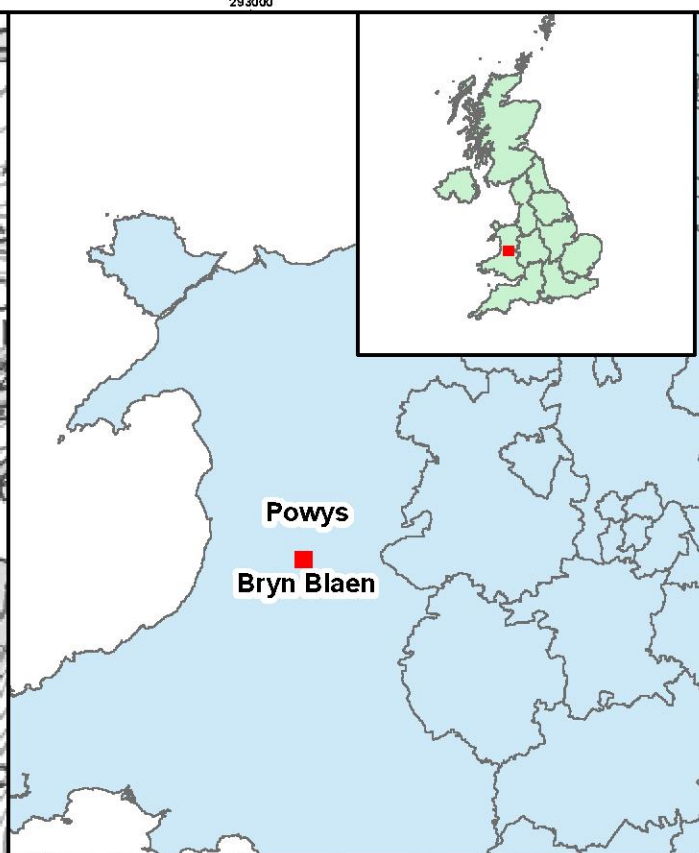
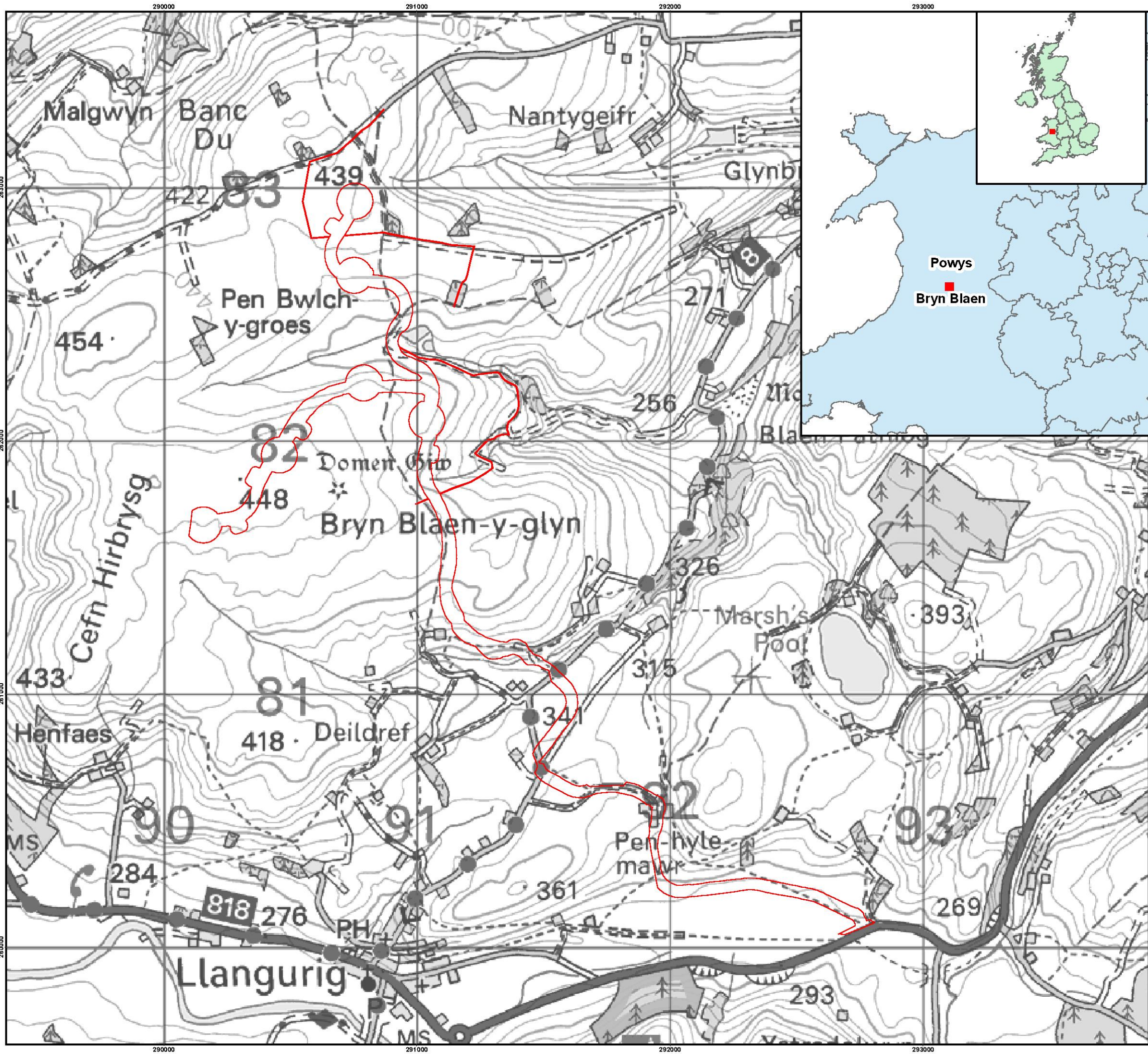


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## **Figures 8.1 – 8.5 (Historic Environment)**



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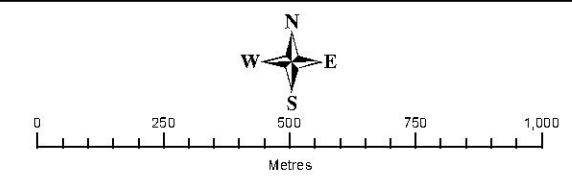
Llangurig, Lanidloes, Powys

**Figure 8.1: Site Location**

 Application Area

Drawn By: Diarmuid O Seaneachain Date: 06.10.2014

Verified By: Andy Frost Date: 06.10.2014



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







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# Bryn Blaen Wind Farm Ltd.

Llangurig, Llanidloes, Powys

**Figure 8.2: Inner Study Area and Recorded Heritage Assets**

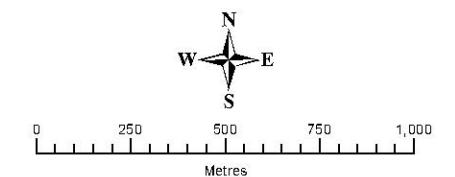
-  Application Boundary
-  Inner Study Area
-  Zone of Theoretical Visibility
-  Scheduled Monument
-  Listed Building Grade II\*
-  Listed Building Grade II
-  Llangurig CA
-  HER Heritage Asset
-  Possible mound
-  Older Field Boundaries

**Inset Map (Scale)**

 1:4,000 at A3 size

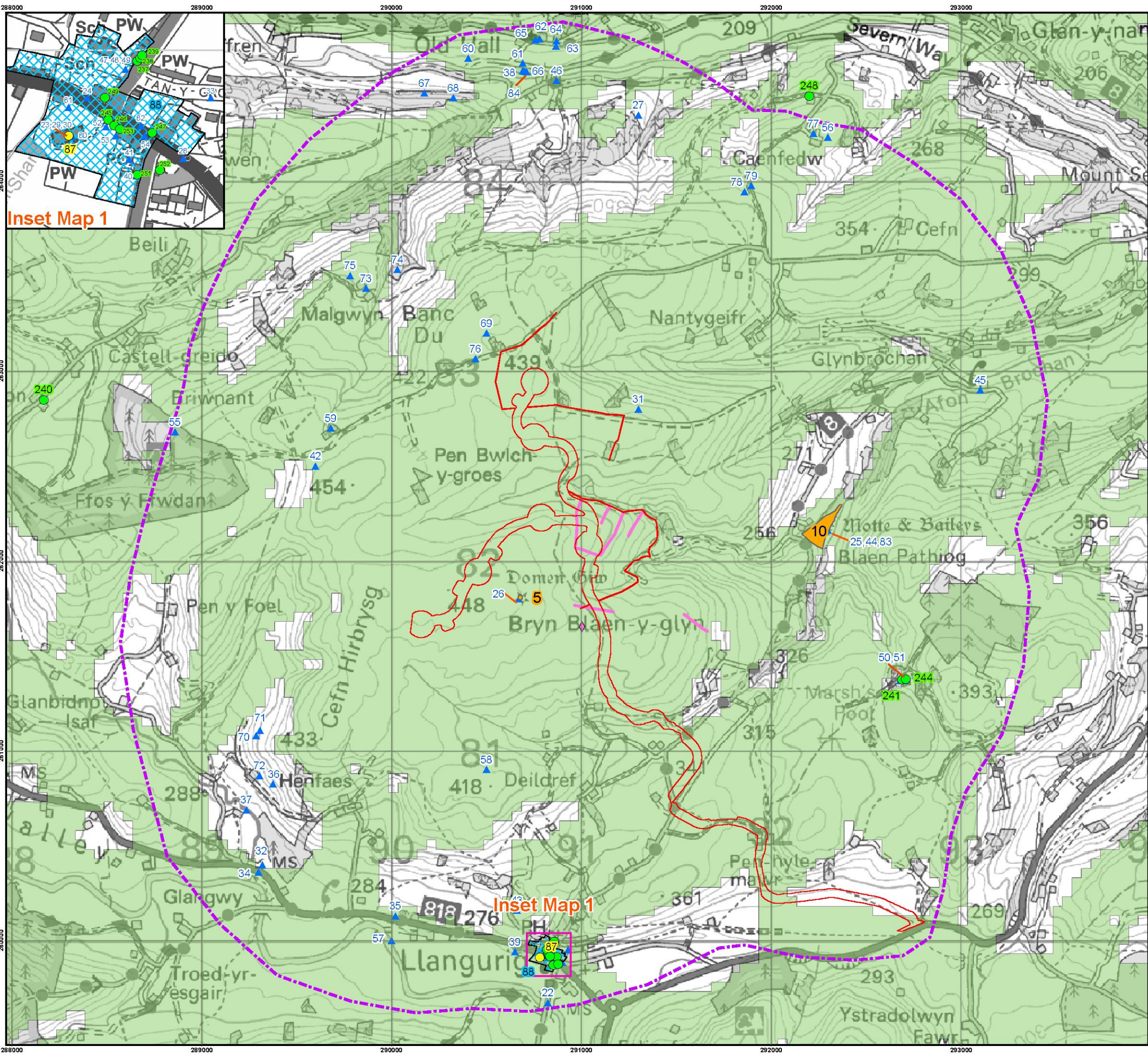
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Verified by: Andy Frost Date: 06.10.2014



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**Inset Map 1**

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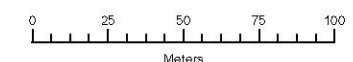
Llangurig, Llanidloes, Powys

**Figure 8.3.1: Designated Heritage Assets in Llanidloes Conservation Area**

-  Application Boundary
-  Middle Study Area
-  Inner Study Area
-  Outer Study Area
-  Zone of Theoretical Visibility
-  Scheduled Monument
-  Listed Building Grade I
-  Listed Building Grade II\*
-  Listed Building Grade II (5km only)
-  Historic Landscapes
-  Llanidloes CA

Drawn by: Diarmuid O Seaneachain Date: 06.10.2014

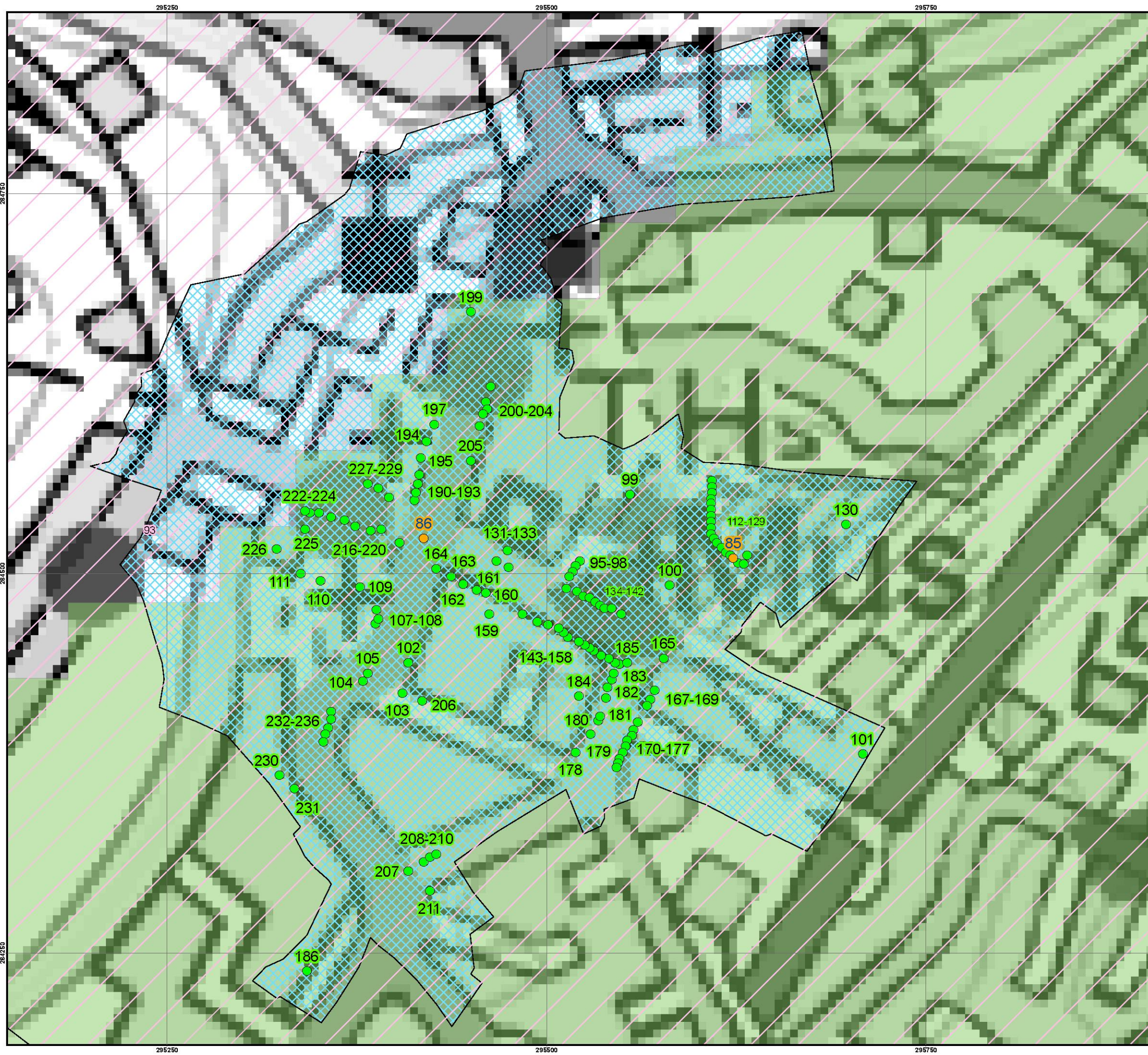
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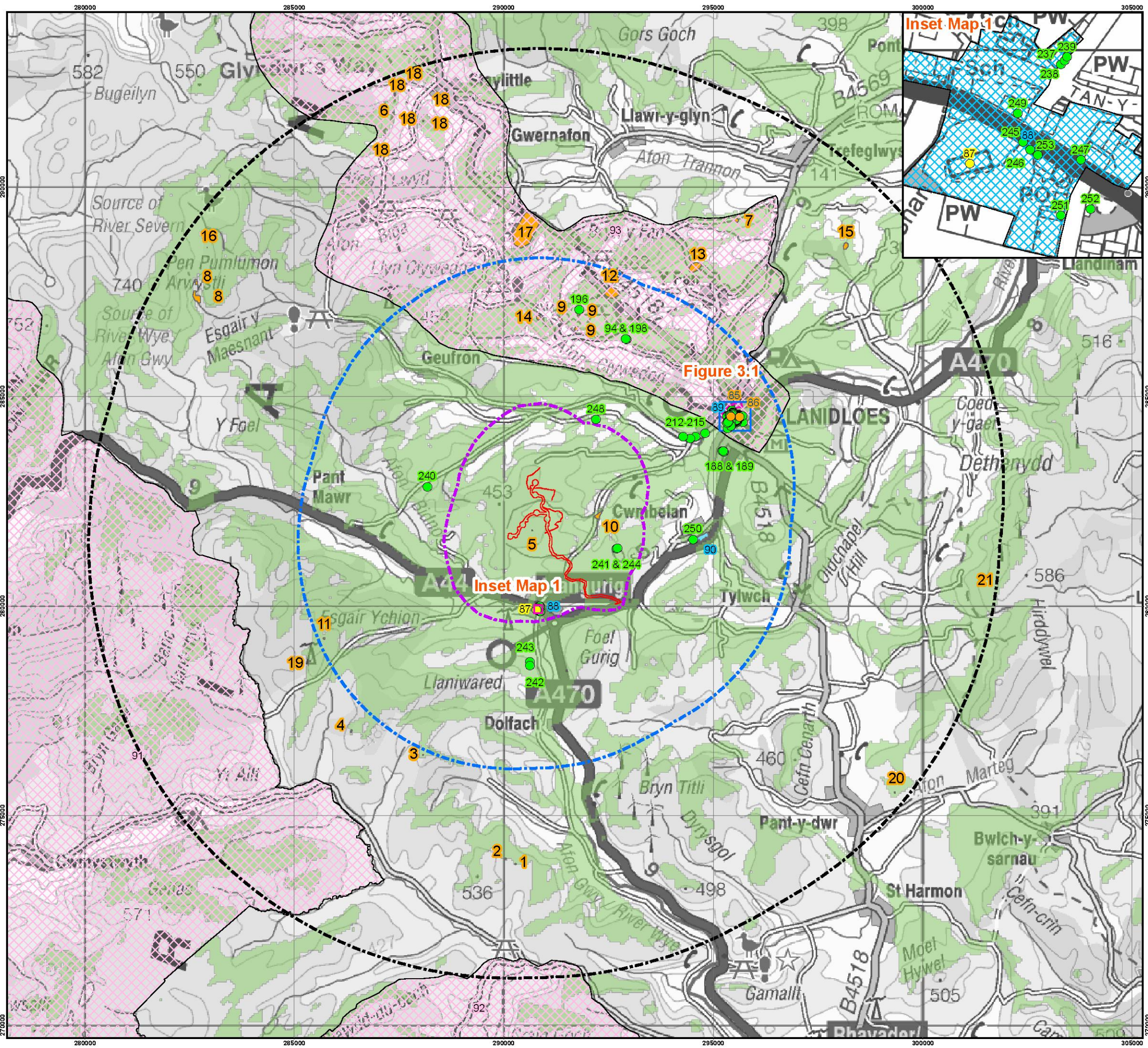


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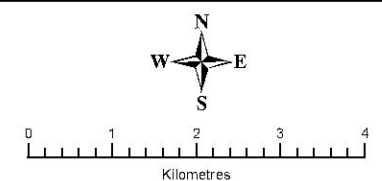
Llangurig, Llanidloes, Powys

**Figure 8.3: Designated Heritage Assets in the ZTV**

- Application Boundary
- Middle Study Area
- Inner Study Area
- Outer Study Area
- Zone of Theoretical Visibility
- 1 Scheduled Monument
- 85 Listed Building Grade I
- 87 Listed Building Grade II\*
- 240 Listed Building Grade II (5km only)
- 93 Historic Landscapes
- 90 Conservation Areas

- Inset Map Scales**
- Figure 3.1@ 1:2,500
  - Inset Map 1@ 1: 3,000

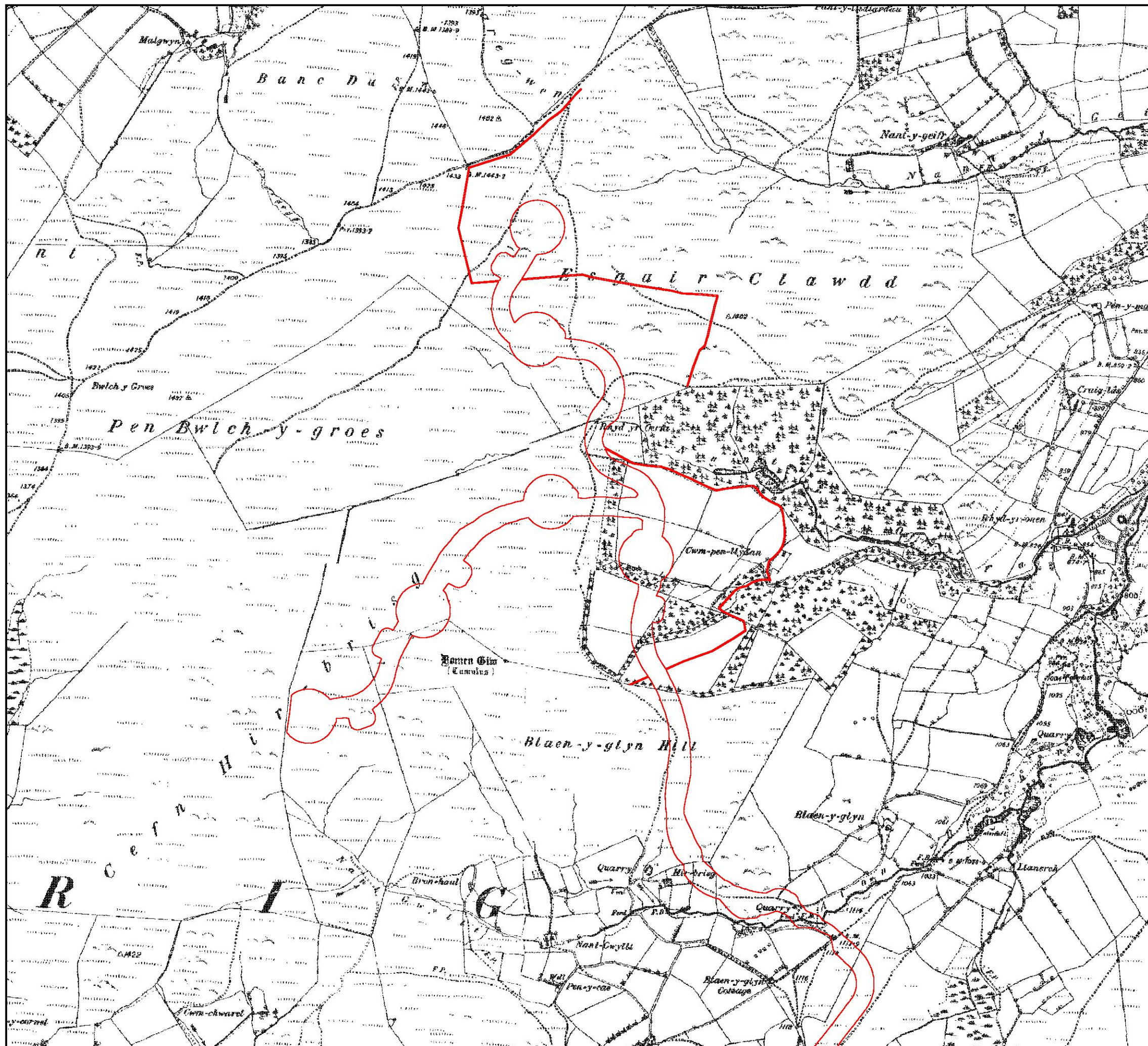
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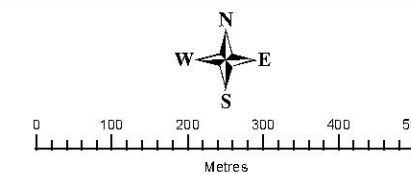
Llangurig, Llanidloes, Powys

**Figure 8.4: Site Location on  
the 1889-1891 OS 1:10,560  
Montgomeryshire Series**

 Application Boundary

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Verified by: Andy Frost Date: 06.10.2014

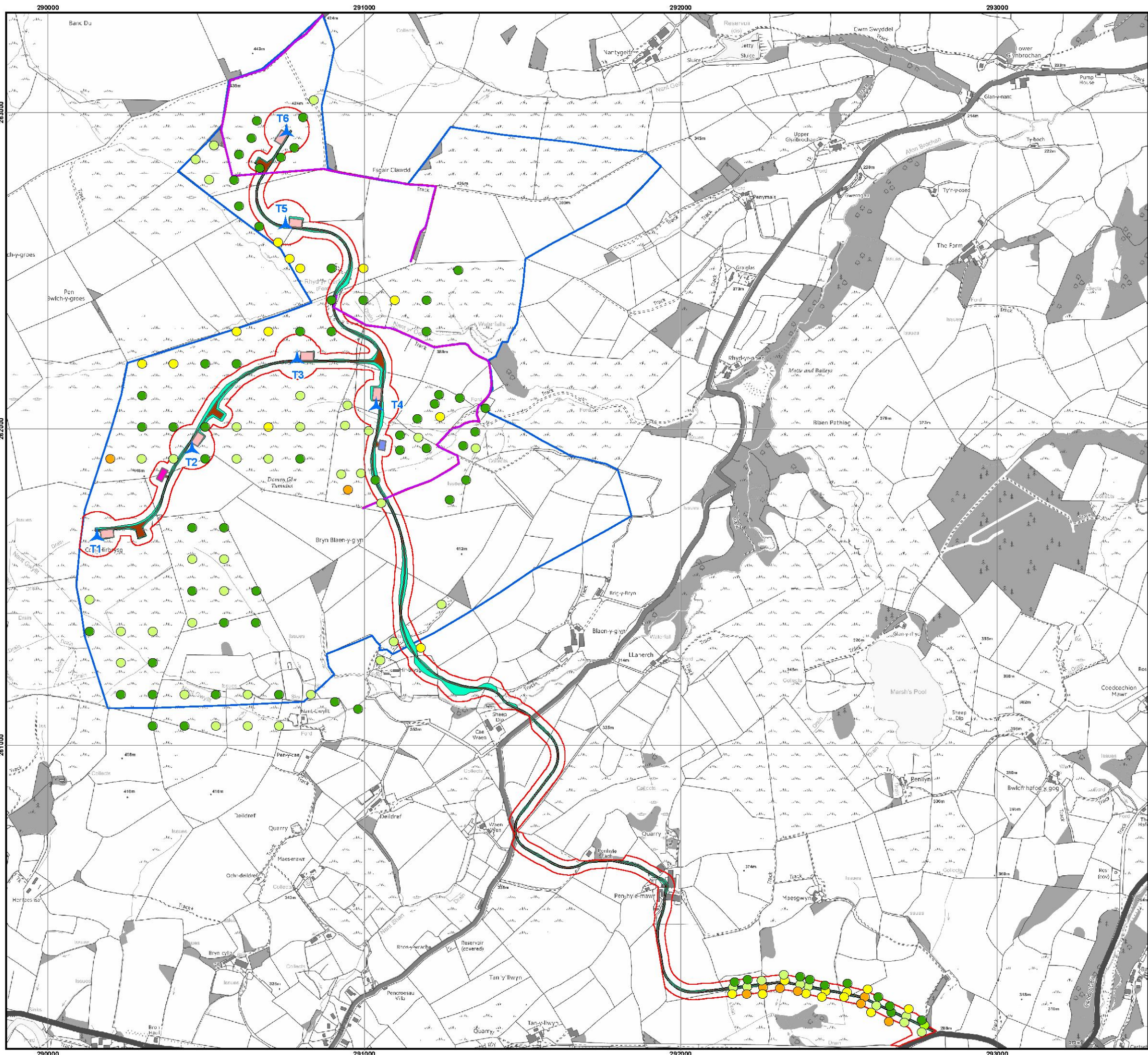


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# Bryn Blaen Wind Farm Ltd.

Llangurig, Llanidloes, Powys

**Figure 8.5: Details of the Proposed Development**

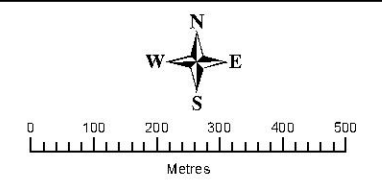
-  Ownership Boundary
-  Application Boundary
-  Turbine Locations
-  Crane Pad
-  Site Compound
-  Substation
-  Embankments
-  Access Track
-  Proposed Brideway Diversion

### Peat depth

-  0 - 0.30m
-  0.31 - 0.60m
-  0.61 - 1.00m
-  1.01 - 1.50m
-  1.51 - 2.80m

Drawn by: Diarmuid O Seaneachain Date: 06.10.2014

Verified by: Andy Frost Date: 06.10.2014



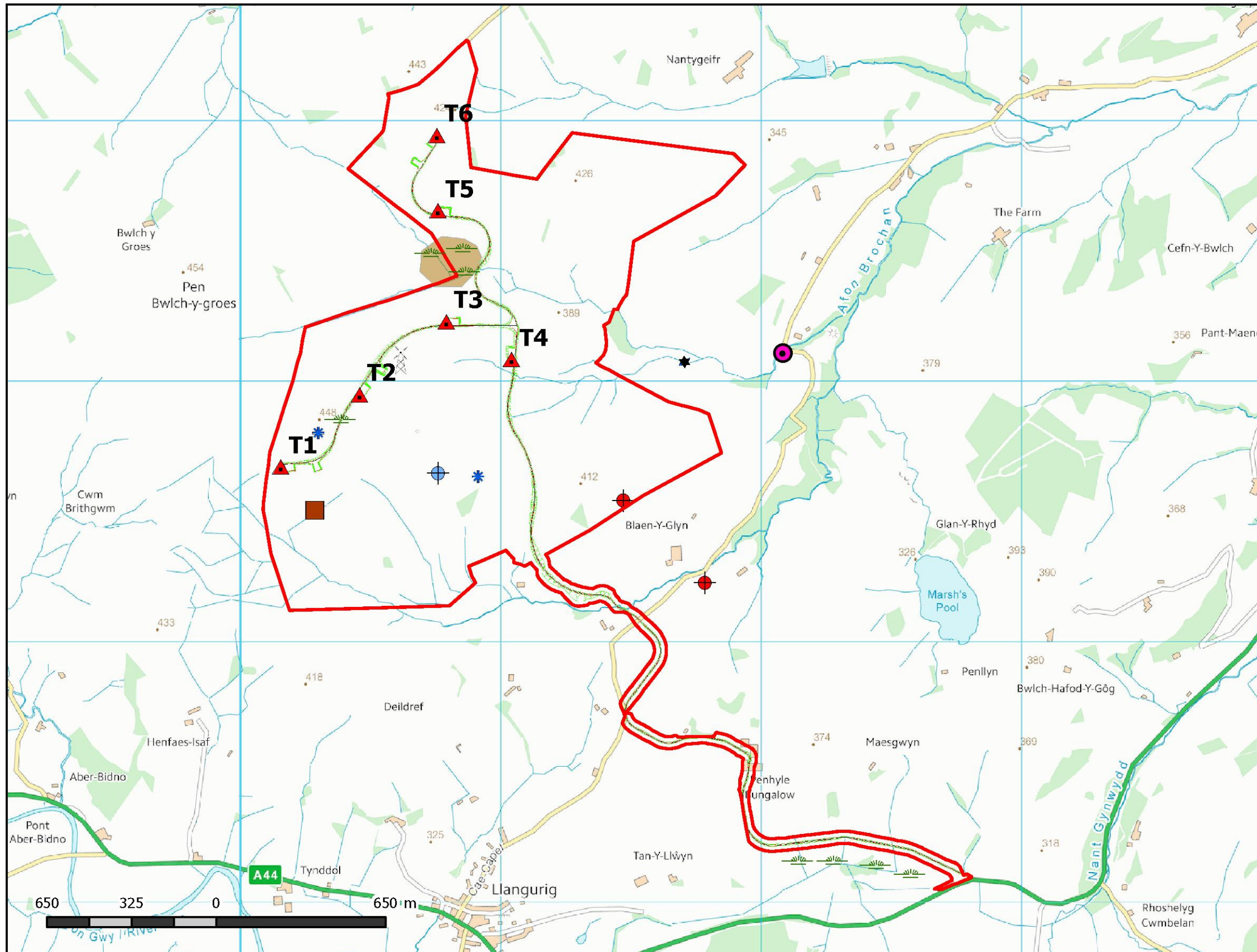
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## **Figure 9.1 (Hydrology & Hydrogeology)**



# Key

- Study Area Boundary
- ▲ Turbine Location
- Sample Point - Field Hydrochemistry
- ▨ Marshy Ground
- ↔ Culvert
- Peat
- ⊗ Possible Well (in operation)
- ✱ Standing Water
- Cutting
- ⚡ Weather Station
- ⊕ Well (not in use)



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Project: A078181	Date: Sept 2014	Drawn by: JN	Checked by: CJL	Verified by: MB	Absolute Scale @A3 1:16,000
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**Figure 9.1**  
Surface Water Feature Map

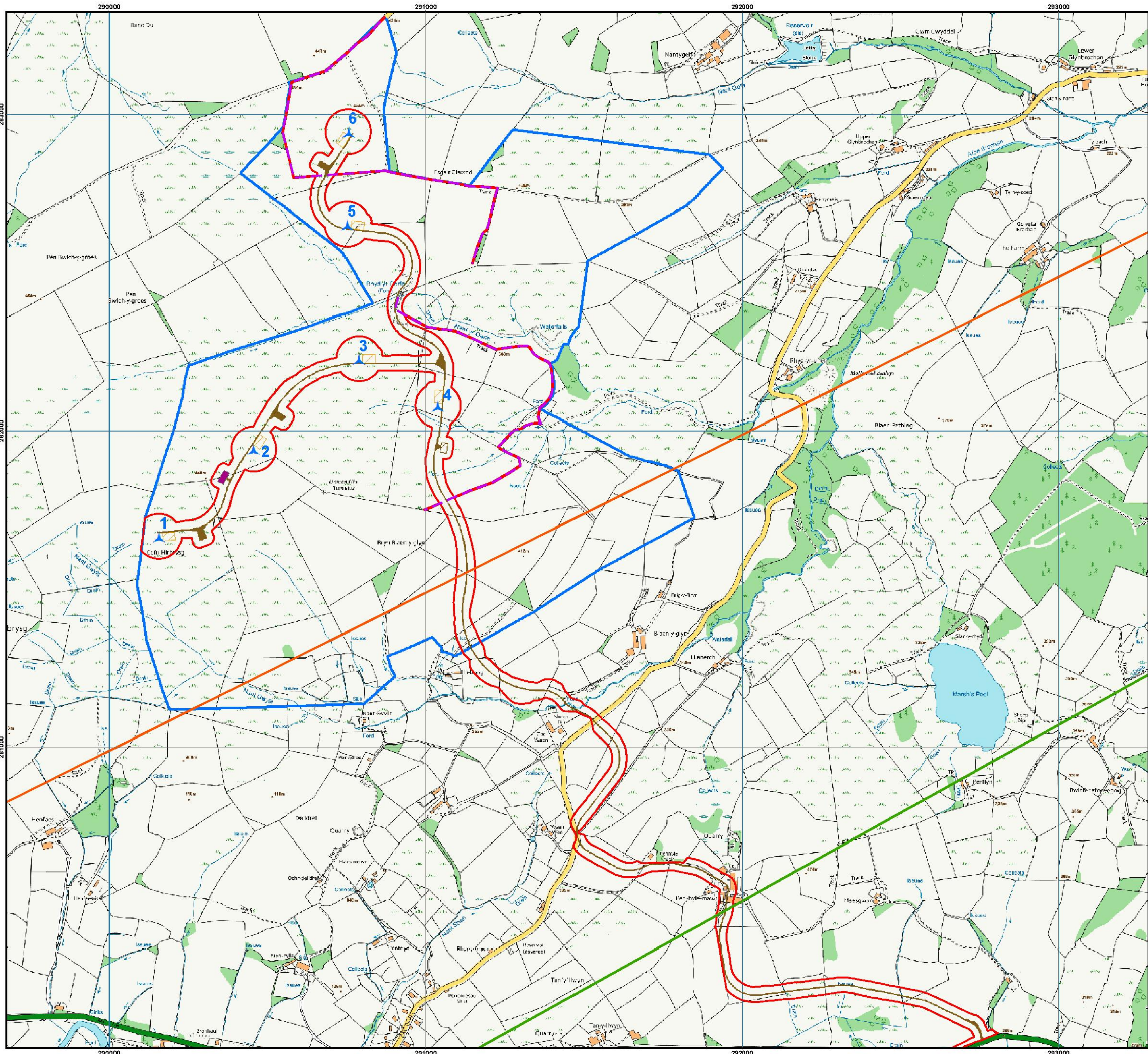
Drawn using ESRI ArcMap 10

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## **Figure 11.1 (Existing Infrastructure)**



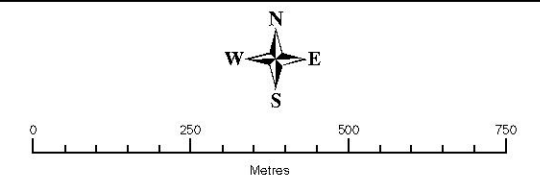
# Bryn Blaen Wind Farm Ltd.

Llangurig, Llanidloes, Powys

**Fig 11.1: Site Layout and  
Microwave Links**

-  Core study area
-  Application boundary
-  Turbine
-  Crane pad
-  Substation
-  Site compound
-  Access track
-  Recreational track
-  Orange microwave link
-  Arqiva RBL

Drawn by Andy Frost 10/10/2014, Verified by Steven Radford 10/10/2014

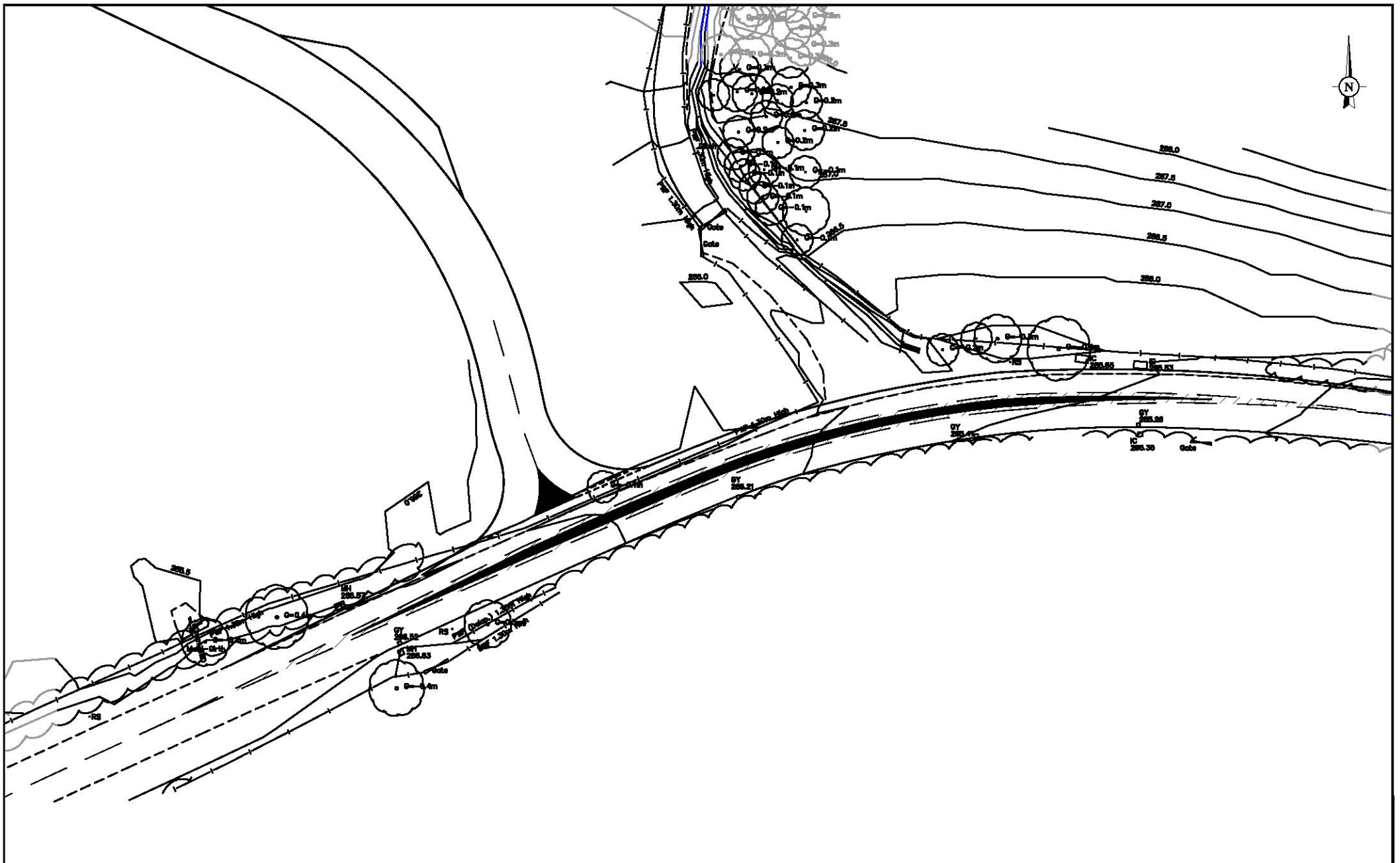


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## **Figures 12.1 – 12.3 (Traffic & Transportation)**



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Figure 12.1 - Indicative Site Access Layout

Njord Energy Ltd

WYG Transport Planning

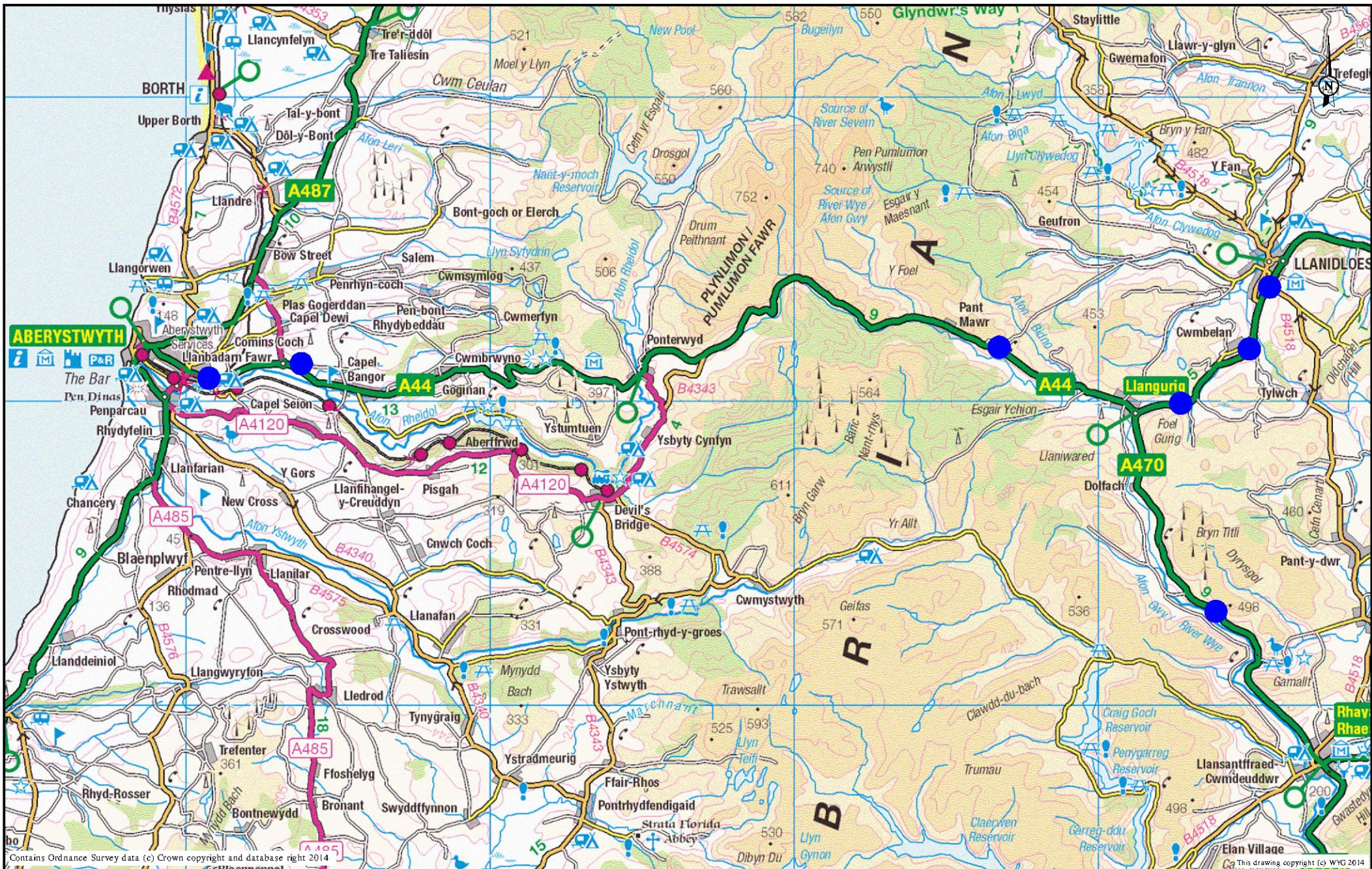
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DATE:  
May 2014

DRAWN:  
CRJ

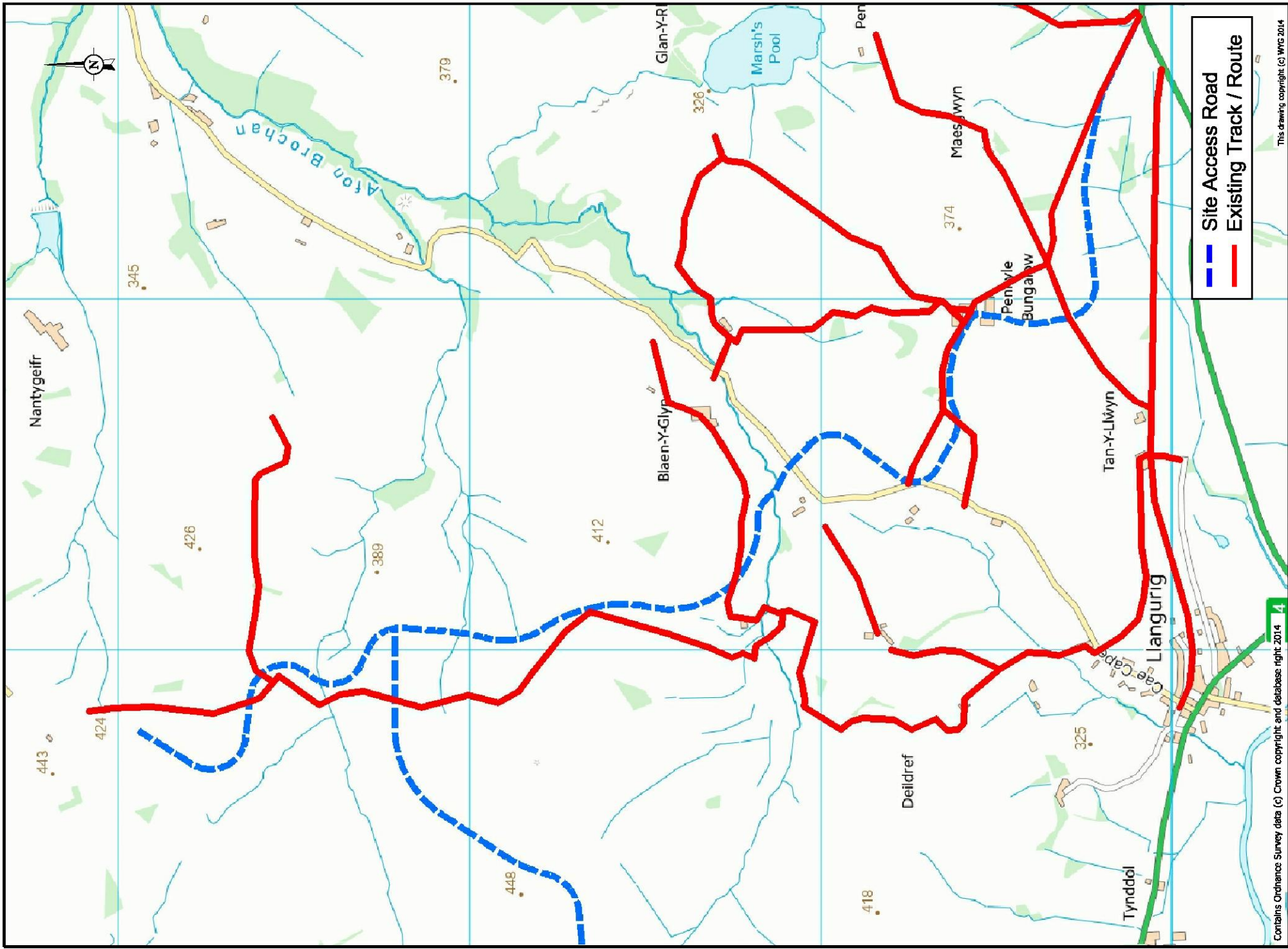
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 Figure 12.2 - Traffic Count Site Locations

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--- Site Access Road  
--- Existing Track / Route

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**Figure 12.3 - Existing Tracks and Routes**  
**Within Vicinity of Access Road**

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