



VALIDATION REPORT
C.A. PERMIT No.
N.P.T. PLANNING APP. P2022/0230
PROPOSED RESIDENTIAL DEVELOPMENT
35 PARISH ROAD
CWMGWRACH
GLYNNEATH
N.P.T.
SA11 5SW
9/02/2023

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INTRUSIVE INVESTIGATION VALIDATION REPORT

1. INTRODUCTION

This Validation Report has been produced in support of the closure form for C.A. permit 25940. The land subject to the intrusive investigation has had planning permission ref. P2022/0230 granted by Neath Port Talbot L.P.A. This was for the demolition of an existing bungalow and the construction of two new residential properties at 35 Parish Road, Cwmgwrach. The original application was validated with a C.M.R.A. from Geoinvestigate. This recommended an intrusive investigation. This recommendation has now become a pre-commencement planning condition and is reproduced below:-

6 No development shall commence (EXCLUDING DEMOLITION) until;
a) a scheme of intrusive investigations has been carried out on site to establish the risks posed to the development by past coal mining activity, and;
b) any remediation works and/or mitigation measures to address land instability arising from coal mining legacy, as may be necessary, have been implemented on site in full in order to ensure that the site is safe and stable for the development proposed. The intrusive site investigations and remedial works shall be carried out in accordance with authoritative UK guidance. Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors, and to ensure compliance with Policies SP16 and EN8 of the Neath Port Talbot Local Development Plan.

Richard Davies BSc. (Hons), MSc., F.G.S. of Rhondda Geotechnical Services was commissioned by Clive Griffiths (the landowner and applicant) as the competent person to design and carry out an intrusive investigation of the proposed development site. A brief review of relevant desk study information will follow prior to the description of the intrusive investigation findings. This is in order to place the results of the intrusive investigation in context.

The original planning application was accompanied by a C.M.R.A. prepared by Geoinvestigate as stated above. This ignores much of the information in the Coal Authority Consultants Report including the C.A. conclusion that there would be no unrecorded shallow workings. Whilst it is not the function of a Validation Report to criticise a report by a third party, it is necessary to point out the real situation at the site is different to that presented in the C.M.R.A. This fact can then put the results of the intrusive investigation into context.

The site is centred on grid reference 287610, 205430 and is at an elevation of approximately 130m-135m. A.O.D. A narrow, straightened surface watercourse forms the northern development boundary. The site adjoins residential properties to the east and west. The southern boundary fronts onto Parish Road. The site location is shown in Figure 1 overleaf. Figure 2 shows the development boundary with the footprints of the proposed and existing buildings. The land ownership boundary is also shown.

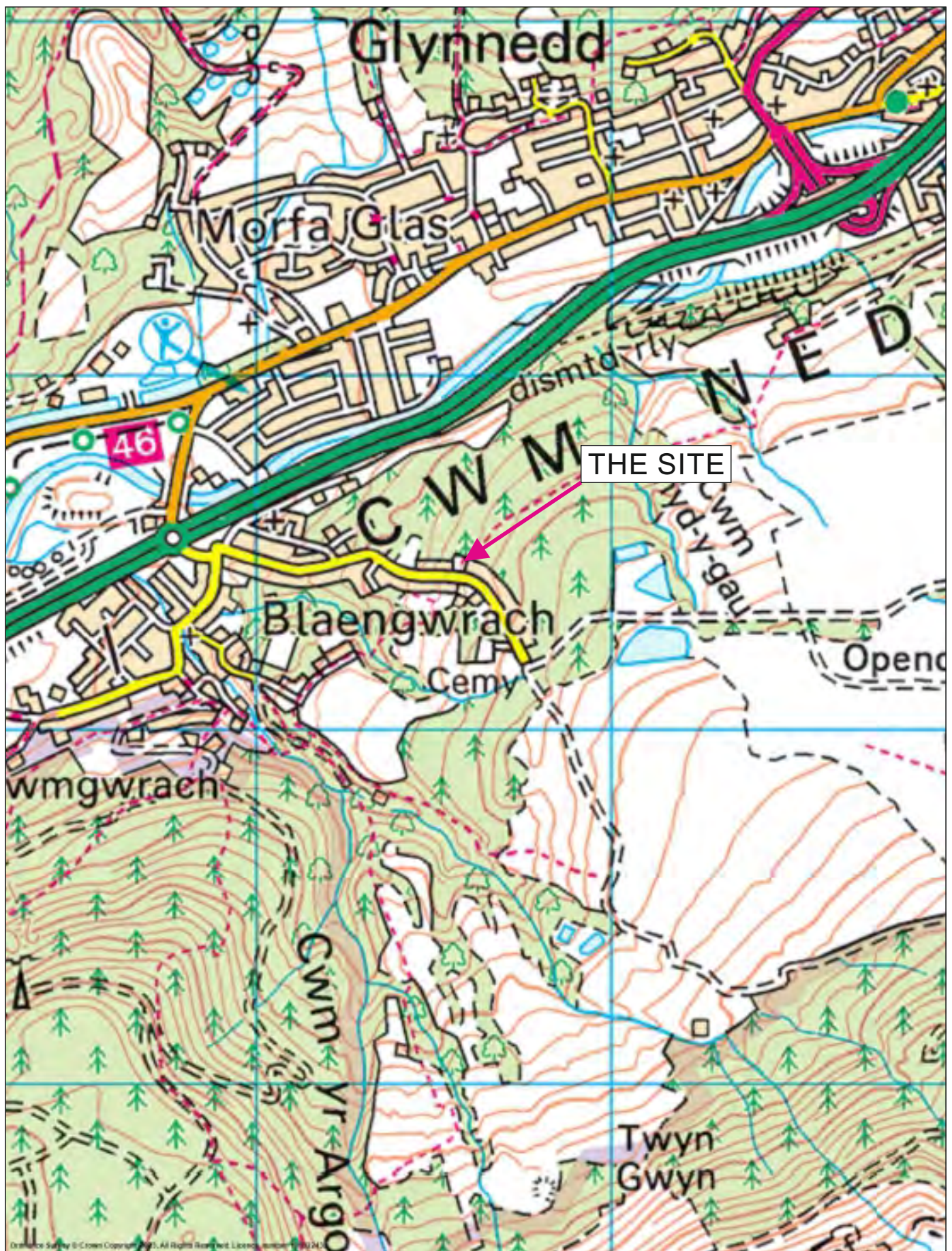


FIGURE 1
SITE LOCATION

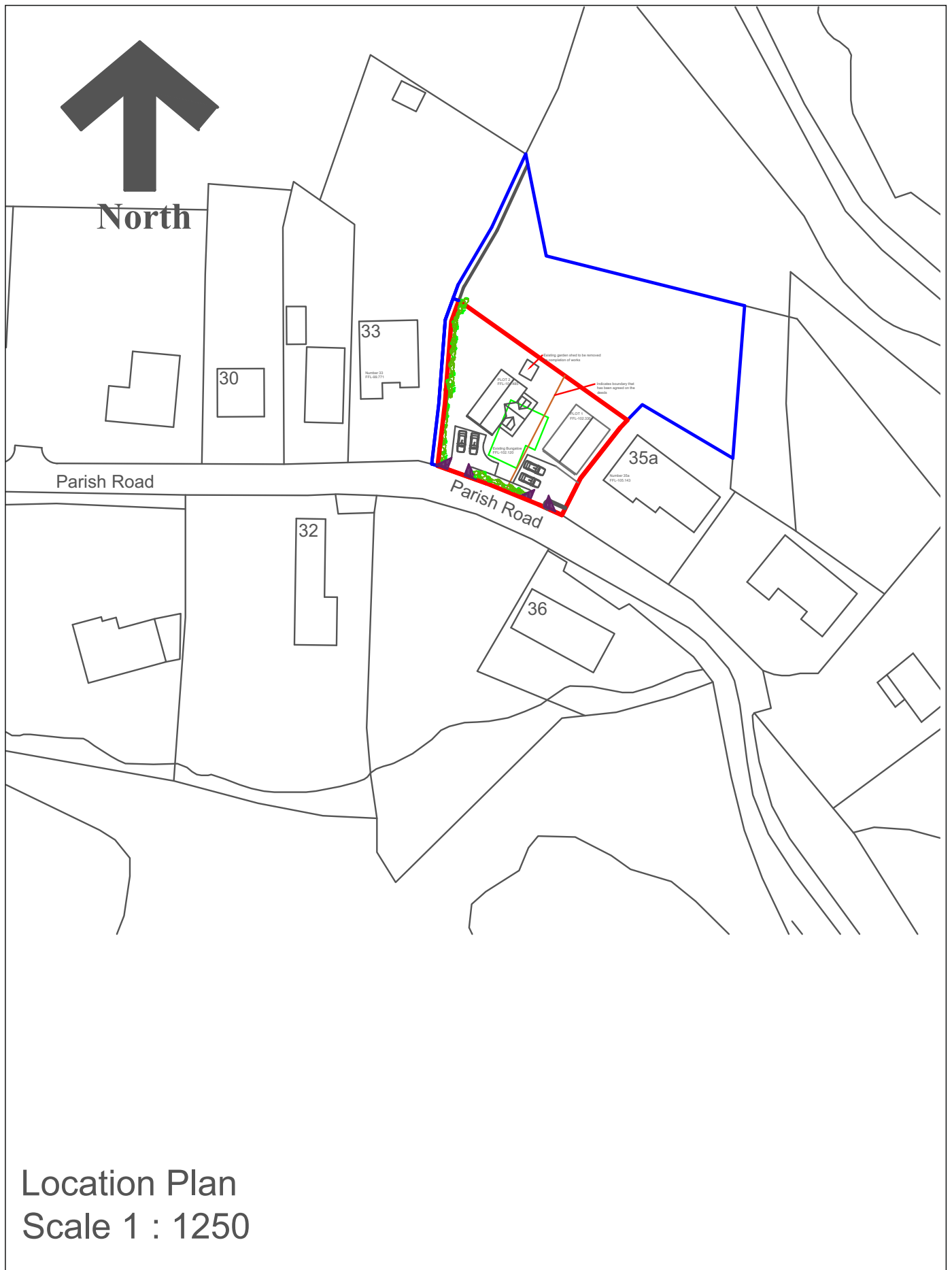


FIGURE 2
LAND OWNERSHIP IN BLUE, DEVELOPMENT SITE IN RED.

2. C.M.R.A. CONCLUSIONS AND ADDITIONAL GEOLOGICAL INFORMATION

The Geoinvestigate C.M.R.A. is informed by a limited range of desk study material. This consists of a C.A. Consultants report and the one- inch Geological Survey Sheet 248. This is poor practise when a far more detailed larger scale map is available. There is no mention of consulting the Geological Survey Memoirs or attempting to understand the discrepancies between the C.A. and the Geological Survey seam nomenclature. This has resulted in a laughably bad site level drawn on the stratigraphic column.

Figure 3 shows the Summary of Findings map from the Consultants Report. The C.A. seam codes have been added by the author. These are (with seam names from the report):-

SW0161 (Five Foot) shown running through the northwest corner of the site.

SW0151 (Upper Gellideg) shown outcropping northwest of the site.

The outcrop pattern with seam codes ascending to the southeast means the strata is dipping in this direction and so both seams have the potential to underlie the site at shallow depth. The paucity of nearby mine entries is highly unusual for the South Wales Coalfield. The Consultants Report states there are no recorded mine workings beneath the site and concludes there will be no unrecorded workings beneath the site.

The Geological Survey sheet SN 80NE is at 1:10,560 scale and shows the geology, and in particular seam outcrops, in much more detail than the one-inch map. A section of the survey sheet is reproduced in Figure 4. This shows a seam (Bluers) outcropping southwest of the site and a second (Gnapiog) well to the northwest. A third seam (Rhyd) is shown outcropping in the ravine of the Nant Blaengwrach. If this outcrop was projected parallel to the Bluers it would closely approach the site. There is no mention of the Five Foot or Upper Gellideg. This is because the C.A. names are attempted correlations dating back to N.C.B. attempts to standardise seam names across the coalfield (The Aberdare Standard). Because of the complex structural geology this is often difficult and ultimately futile. It is far better to stick to the local names as all archive material uses these. Figure 5 shows the approximate level of the site. The site is underlain by the Rhyd, Grey, Lower and Gnapiog, three of which are described as “thin”. There is no doubt that the Gnapiog correlates with the Garw of the wider coalfield. The Rhyd is shown as 2' (0.61m) thick, but it should be borne in mind that this is an average covering the entire 25 km² map sheet. In the ravine the

survey have measured it as 1' (0.3m). This latter figure is approaching the limit of economic underground working.

The former Opencast Executive realised the value of using local names. The British Coal Development Plan was a long running project establishing coal reserves for potential opencast mining. The primary basis for outcrop information for this was the Geological Survey. This was supplemented by extremely detailed observations from existing opencast mines. Figure 6 is an extract from 07/D/SN/80NE. This shows the outcrop pattern for the Gnapiog together with the strata sequence from Figure 5. The accompanying strata notes give the thickness of the Rhyd as Trace-24". The underlying seams are described as thin as per the Geological Survey.

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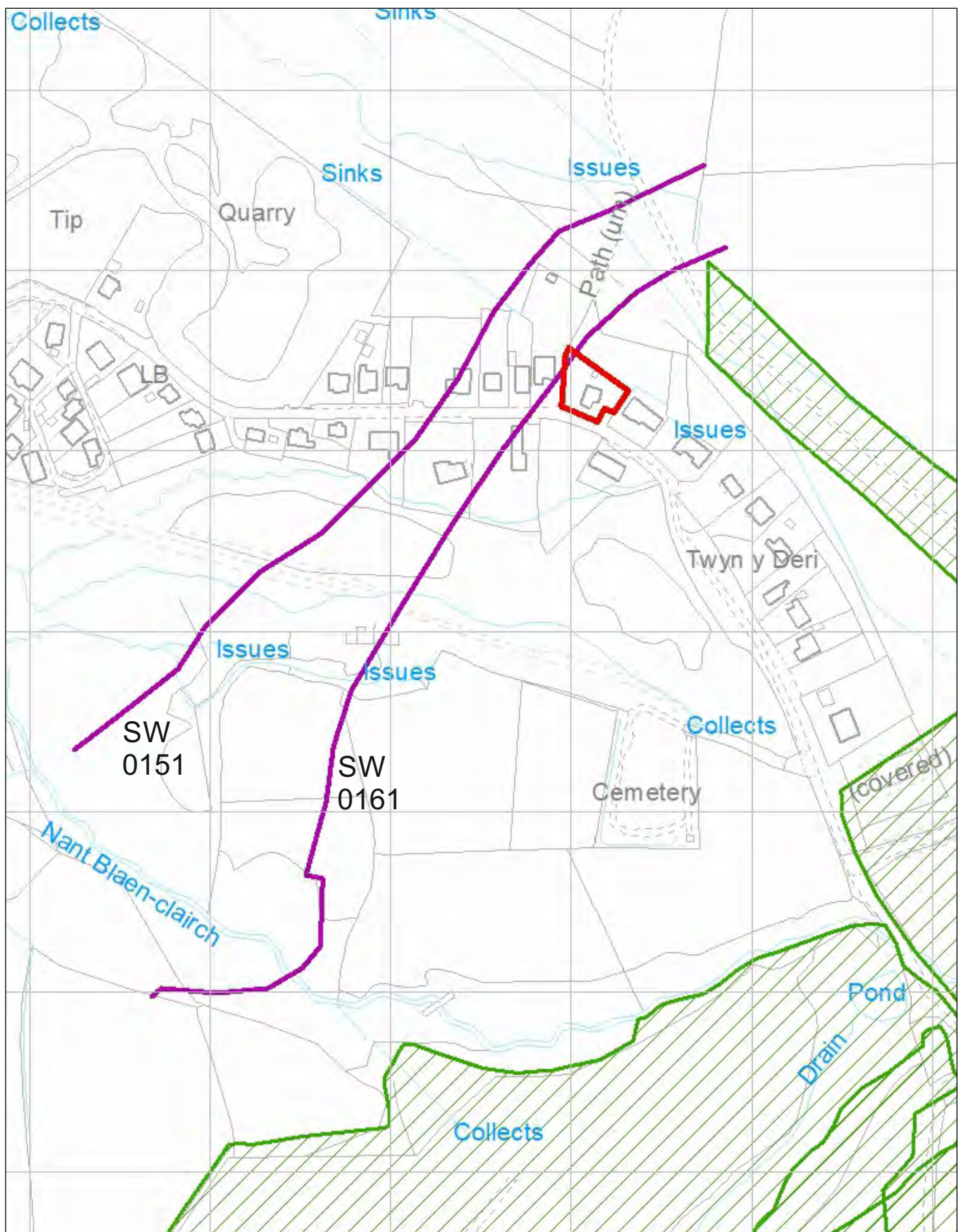


FIGURE 3

SUMMARY OF FINDINGS MAP FROM THE CONSULTANTS REPORT.
SEAM CODES ADDED FROM INTERACTIVE VIEWER.

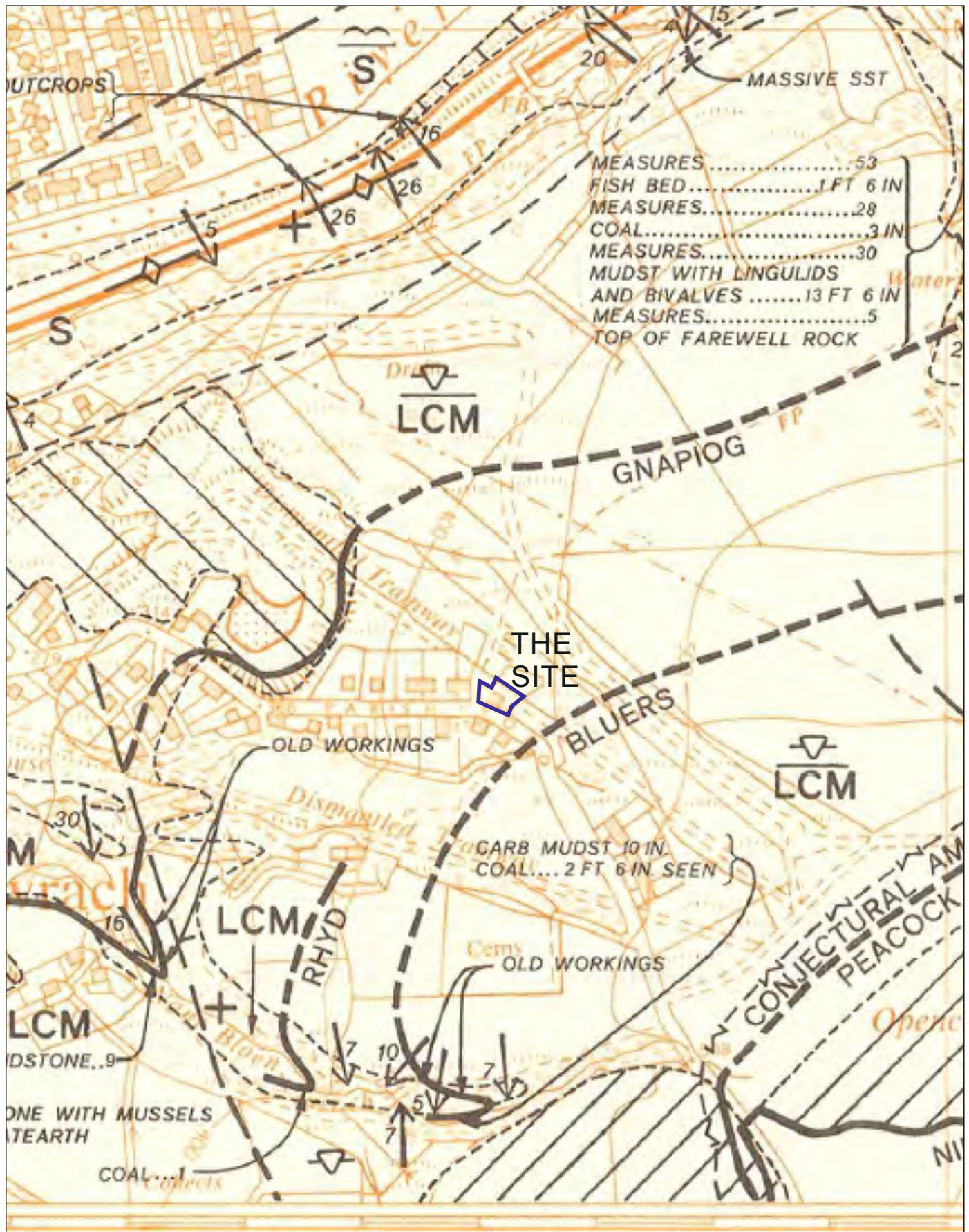


FIGURE 4
EXTRACT OF GEOLOGICAL SURVEY SHEET SN80NE
THE SITE IS HIGHLIGHTED IN BLUE.

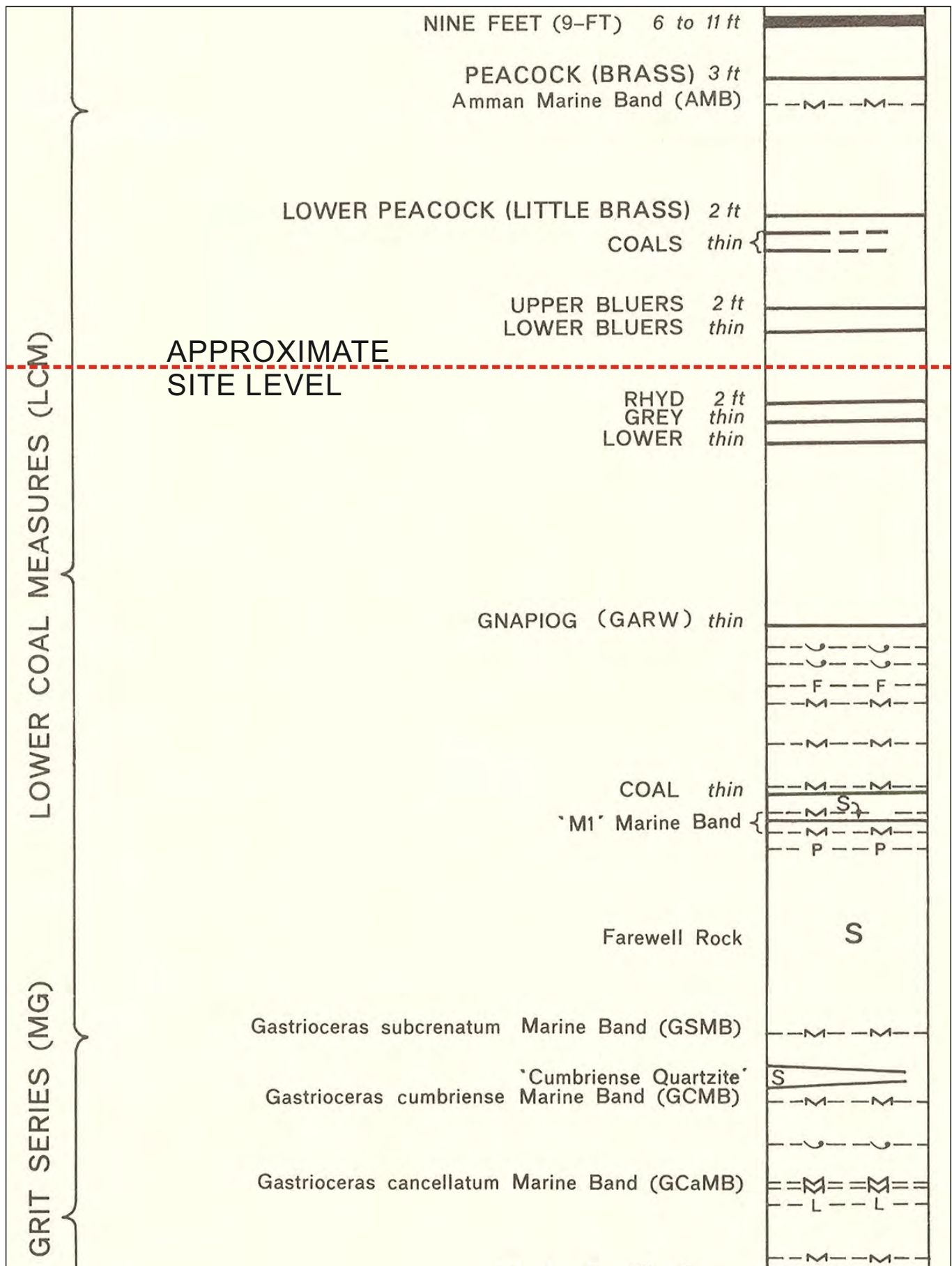


FIGURE 5
SECTION OF THE STRATIGRAPHIC COLUMN FROM SN 80NE.
THE APPROXIMATE SITE LEVEL IS MARKED.

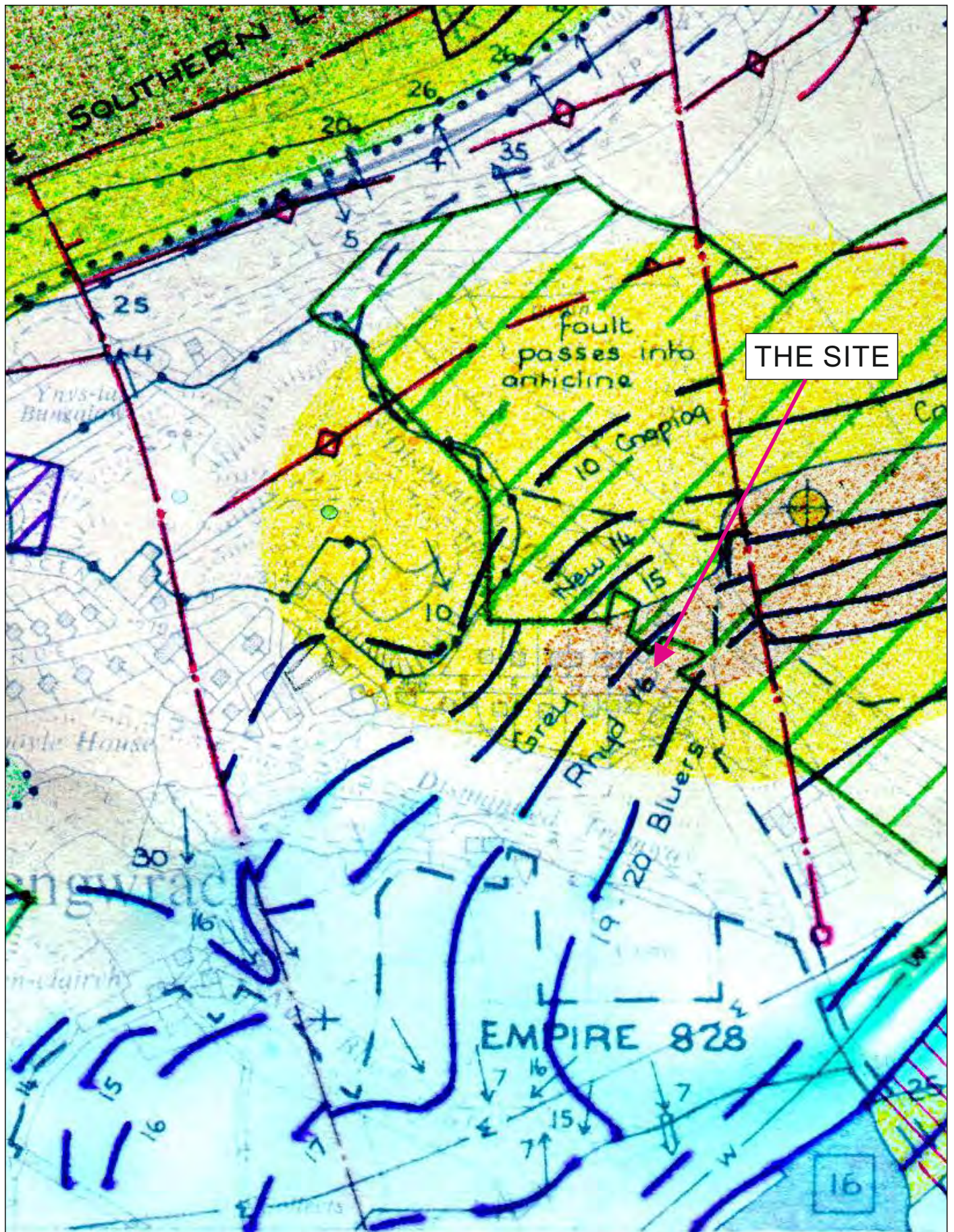


FIGURE 6
BRITISH COAL DEVELOPMENT PLAN D/07/SN/80SE.

3. SITE INVESTIGATION DESIGN

The thickness of the superficial deposits on the site was unknown at the time of applying for the permit. Past work in the area led to the conclusion it would be up to 10m. This was confirmed by the results. Thirty metres of rock is generally considered safe cover over old workings. This is only a rule of thumb, and conditions can vary enormously due to factors such as extraction thickness, pattern of mining and in particular roof rock. For the purposes of the permit application, 45m was chosen as the proposed depth of the boreholes, with the intention of proving 30m of rock once the thickness of the superficals was established on site. The site is compact with garden features at several different levels. The original C.M.R.A. proposed “three boreholes to target depths of up to 30m (but not necessarily reaching 30m) to locate shallow coal seams and mine workings (if any) below the new development as well as establishing drift and bedrock depths”. After a site visit, it was decided to drill four boreholes two either side of the proposed newbuilds. The positions are shown in Figure 7.

4. RESULTS

The boreholes were drilled on 9-12/12/2022. Due to the restricted access and the proximity to the existing building a small Berretta T33 from Apex Drilling was selected to drill the boreholes. All permit conditions were adhered to, with water flush being employed from rockhead after the superficals were cased off using air flush. Continuous gas monitoring at the rig, and regular monitoring in the surrounding area detected no mine gases. Full borehole logs are contained in Appendix 1. In summary, two boreholes were drilled to 40.5m depth, proving a minimum of 30m of rock. The third was drilled to 10m below the coal seam seen in BH1 and 2. The fourth was halted on proving the seam because water from the recirculation system was leaking onto the steep hill outside and freezing, forming a potentially serious traffic hazard.

The superficals consisted of 10m of Glacial Drift. The solid strata was predominantly argillaceous with some subordinate thin sandstones. This is typical of the Lower Coal Measures. One thin (0.4m) coal was seen in all four boreholes. It was intact in all four boreholes. The shallow dip across the site was well illustrated by the slight difference in the seam depth between BH1/BH2 and BH4. These borehole positions were all at approximately the same topographic level. The apparent discrepancy in seam depth between BH3 and the other boreholes is due to the borehole position being approximately 3m higher than BHs 1, 2 and 3.

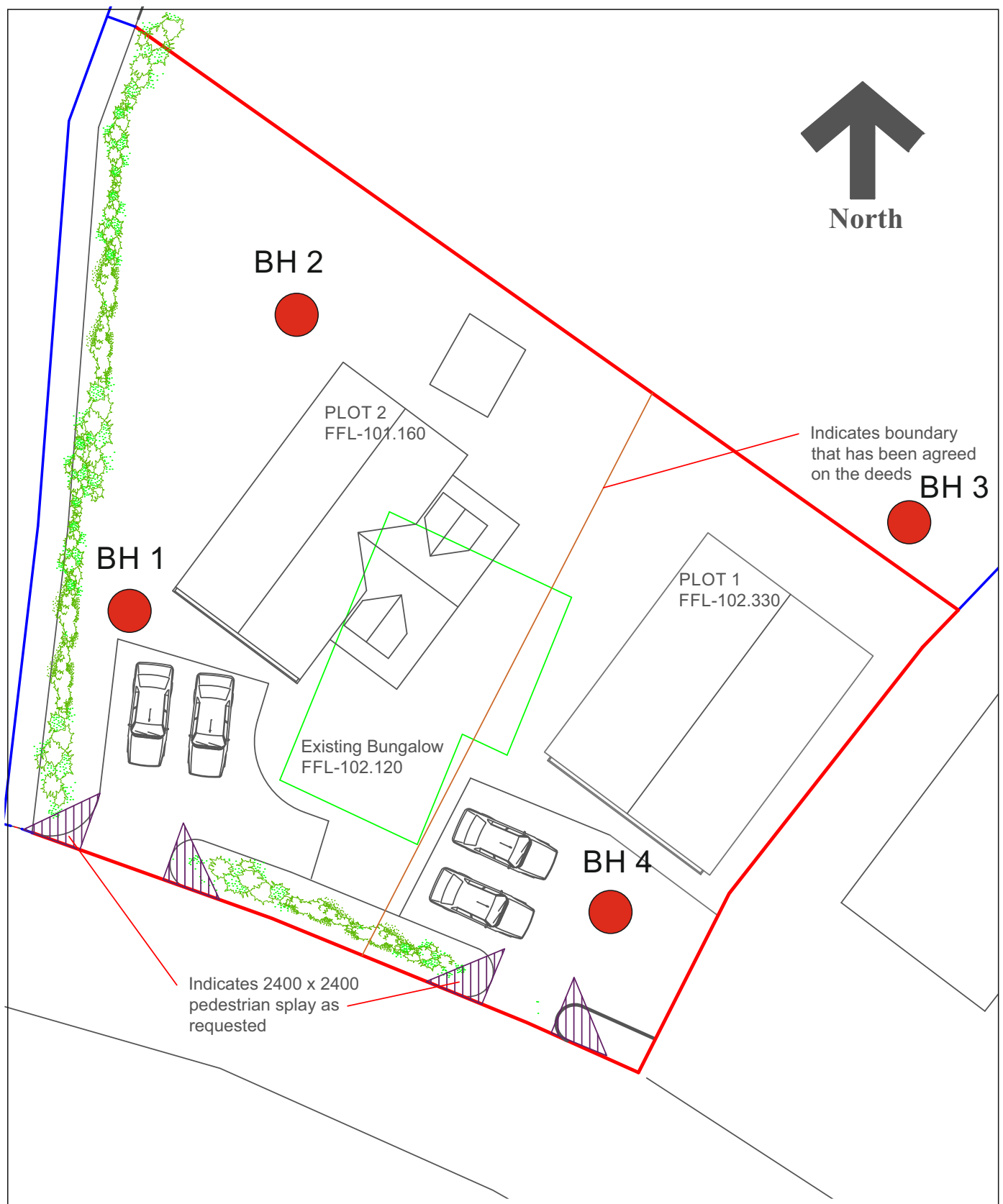


FIGURE 7
BOREHOLE LOCATIONS AT 35 PARISH ROAD

5. CONCLUSIONS AND MITIGATION STRATEGY

The argillaceous strata proved by the boreholes is typical of the Lower Coal Measures. These were extremely productive over much of the South Wales Coalfield. On the southeast slopes of the Neath Valley, they are relatively barren. It could be speculated that this is due to the nearby large Vale of Neath Disturbance. However, the Middle Coal Measures are unaffected and so the cause is likely to be down to contemporaneous deposition conditions. The boreholes proved a single unworked coal seam. This can be tentatively identified as the Rhyd. The position, dip and seam thickness agree closely with the geological desk study in Section 2. There are only thin, unworkable seams below the end borehole depths of BH1 and 2 although the Gnapiog was worked to a limited extent from outcrop far below the site both stratigraphically and topographically. It is safe to conclude there is no threat to ground stability from mining legacy issues. The site is safe and stable in line with Government guidelines and no remediation measures are necessary.

A copy of this report will be sent to the C.A. permitting department to close the drilling permit. This report will also go to N.P.T. planning for them to consult with the C.A. about discharging the intrusive planning condition 6. The evidence in this report should allow them to do this safe in the knowledge that there is no threat to ground stability at the site from shallow coal mining.

Richard Davies BSc. (Hons.), MSc., F.G.S.

9/2/2023

APPENDIX 1

ROTARY BOREHOLE LOGS

FROM

35 PARISH ROAD

CWMGWRACH

BH1 PARISH ROAD, CWMGWRACH	
Strata Depth (m)	Strata Description
G.L.-10.4	GLACIAL TILL
10.4-13.4	GREY MUDSTONE
13.4-13.8	COAL
13.8-40.5	GREY AND DARK GREY MUDSTONE, OCCASIONAL THIN (<0.5m) SANDSTONE BANDS, OCCASIONAL CARBONACEOUS TRACES.

BH2 PARISH ROAD, CWMGWRACH	
Strata Depth (m)	Strata Description
G.L.-9.5	GLACIAL TILL
9.5-13.5	GREY MUDSTONE
13.5-13.9	COAL
13.8-40.0	GREY AND DARK GREY MUDSTONE, OCCASIONAL THIN (<0.5m) SANDSTONE BANDS, OCCASIONAL CARBONACEOUS TRACES.

BH3 PARISH ROAD, CWMGWRACH	
Strata Depth (m)	Strata Description
G.L.-9.4	GLACIAL TILL
9.4-17.1	GREY MUDSTONE
17.1-17.5	COAL
17.5-28.0	GREY AND DARK GREY MUDSTONE, OCCASIONAL THIN (<0.5m) SANDSTONE BANDS, OCCASIONAL CARBONACEOUS TRACES.

BH4 PARISH ROAD, CWMGWRACH	
Strata Depth (m)	Strata Description
G.L.-10.1	GLACIAL TILL
10.1-14.8	GREY MUDSTONE
14.8-15.2	COAL
15.2-18.0	GREY AND DARK GREY MUDSTONE