



Merthyr Tydfil County Borough
Council
Rhydycar Bridge, Merthyr Tydfil
Ecological Addendum Report

Document Ref: EAR-MTCBC-2201

ISSUE	REVISION	STAGE	DATE	PREPARED BY	APPROVED BY	SIGNED
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EXECUTIVE SUMMARY

Following comments from the county ecologist and results of a preliminary survey, Ecoleg LLP were commissioned by Merthyr Tydfil County Borough Council to undertake a physical inspection of a masonry retaining below and adjacent to Rhydycar Footbridge on the Afon Taf to ascertain it's potential to support roosting bats.

A water-borne endoscope survey of crevices within the retaining wall was undertaken in February 2022 and incorporated a stretch of wall both immediately beneath Rhydycar footbridges and up to 25m upstream and downstream. During the inspection survey numerous features capable of supporting roosting bats were identified among gaps in masonry along a 50m stretch of the retaining wall. No evidence of bats was identified although the structure has moderate potential to support roosting bats.

On the basis of the categorisation of the structure and the potential impacts of the works in absence of appropriate mitigation, further bat surveys are required. It is recommended that two bat surveys should be undertaken, one being an emergence/re-entry supported by thermal imaging camera undertaken between May and August 2022 a the other being a pre-commencement check with an endoscope. If bats are found to be roosting in the wall structure during the surveys, a disturbance licence from NRW may be required as well as further mitigation.

Providing no bats are found during the further surveys, a bat toolbox talk will need to be provided to the construction team prior to the commencement of the works. Works should take place between March and November to avoid the hibernation period when bats are most vulnerable to disturbance. It is also recommended that additional bat features/boxes are placed on the retaining wall structure or trees approximately 30-50m from the works area to provide alternative roosting sites during the works.

1. INTRODUCTION

Background

- i. Following the initial constraints survey (Ecoleg , 2021), Ecoleg LLP were commissioned by Merthyr Tydfil County Borough Council (MTCBC) to undertake an additional physical inspection survey of existing masonry along the retaining wall on the south-western bank of the Afon Taff at Rhydycar Bridge.
- ii. The retaining wall on the north-eastern bank is of concrete construction with negligible bat potential and therefore is not considered further in the report.

Scope

- iii. The bridge is scheduled for removal to allow for a wider replacement bridge immediately adjacent on the upstream side. The proposed bridge would allow space for both pedestrians and cyclists and help to work towards MTCBC's sustainable transport plan¹. See Appendix II for drawings of the proposed bridge. The bridge will be fabricated offsite, before being transported to the Rhydycar site, dropped into place and installed.

Aims

- iv. This report presents the findings of the additional physical inspection undertaken in February 2022 and support the previous constraints report which covered the existing foot bridge (Ecoleg, 2021).

¹ <https://www.merthyr.gov.uk/media/1214/spg-4-sustainable-design-chapter-6.pdf>

2. METHODOLOGY

- i. Initial walkover and aerial assessment of the bridge were undertaken on 12/07/2021 and 07/08/2021, respectively. The additional inspection of retaining wall required access from the water a to investigate the features present.

Physical bat inspection survey

- ii. Given the relative calm conditions and low flow rate on the date of survey on 26/02/2022 , the retaining wall was accessible via the water using waders with a safety person on hand equipped with a throwline. Features with the potential to support roosting bats were identified and assessed internally using an endoscope (Ridgid SeeSnake).
- iii. Areas of inspection included features found immediately underneath the bridge and 25m both upstream and downstream of the bridge along the retaining wall. All features identified as suitable were investigated internally with the endoscope, utilising a series of extended camera attachments. Survey was undertaken by suitably experienced ecologists².

Plate 1. Example of endoscoping smaller feature suitable for a small number of bats (left) and larger, deeper feature suitable for multiple bats (right)



² Full and Chartered member of the Institute of Environmental Sciences (IES), with 9yrs experience of habitat and protected species surveys and a NRW bat survey licence and an Associate Member of the Chartered Institute of Ecology & Environmental Management (CIEEM), with 7yrs experience of habitat and protected species surveys.

- v. Crevices were noted and individually assessed for their potential to support bats. A search was also carried out for direct evidence of bats such as staining and droppings. Each feature was categorised in relation to the bat roosting features (BCT, 2016). The categories are as follows:

- **Known or confirmed roost**
- **High** - A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
- **Moderate** – A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
- **Low** – A structure with one or more potential roost sites that could be used by individual bats opportunistically.
- **Negligible** – Negligible habitat features on site likely to be used by roosting bats

Limitations

- vi. Ecological surveys are limited to factors which affect the presence of plants and animals, such as time of year, migration patterns and behaviour. With a winter survey visit it is possible that certain species may have been overlooked or under-recorded during the assessment as optimal survey periods vary from species to species.
- vii. Overall, given previous visits, this follow-up survey was considered sufficient to inform this assessment of the retaining wall and recommendations.

3. RESULTS

Physical bat inspection survey

- viii. In total approximately a 50m length of the retaining wall structure was inspected using an endoscope where crevices between the masonry and missing mortar exposed cavities into the bank.

Plate 2. Retaining wall structure showing habitable band of crevices



- ix. During the physical inspection it was noted that crevice suitability for bats was limited to a band approximately 1.5m wide in the middle of the wall (see Plate 2.). Areas below the band were vegetated with mosses and bryophytes and seemed to delineate the high-water mark during high water and flood events. Crevices in this area were overgrown and wet and did not provide suitable roosting habitat for bats. Areas above the band depicted in Plate 2, were also unsuitable to bats with crevices filled with detritus, soil and exhibited damp seepage from the ground above the wall. It is likely rainwater percolates amongst the masonry in the top half of the wall.
- x. All suitable crevices within the central band were inspected internally with the endoscope. No direct evidence of bats was identified (e.g. bats, droppings, staining etc.). Crevices generally extended 15 -20cm into the bank, however on occasion up to 100cm where a second cavity existed beyond the first row of stone blocks. Generally, features were considered suitable to support small numbers of bats on an irregular basis. The deeper crevices could potentially support multiple bats. The wall lies within a built up area with significant street lighting present, however the river does provide a sub-optimal commuting corridor for bats. Therefore, the structure as a whole was considered to be of moderate potential to support roosting bats (including for hibernation).

4. CONCLUSIONS & RECOMMENDATIONS

- i. The survey of the retaining wall found the wall had numerous features capable of providing shelter for individual bats as well as a small number of larger crevices suitable for multiple bats. While no direct evidence of use by bats were found, and only a narrow band of the retaining wall provides conditions suitable for roosting bats, the retaining wall was considered to be of moderate potential overall.
- ii. The works will not directly impact the retaining wall and no features will be lost or altered in the long-term, however there will be increased disturbance during construction (see Appendix II).

Constraints - roosting bats

- iii. In terms of the planned proposals, works will involve the removal and replacement of existing bridge with a new footbridge. Given the potential of the gaps in the masonry to provide roosting opportunities for local bats, there is a chance of adverse impacts to bats as a result of disturbance without appropriate mitigation. In order to reduce the impacts of disturbance on any bats which may roost within the wall, works should take place between March and November to avoid the hibernation period.
- iv. It is recommended that one emergence/re-entry survey is undertaken during the appropriate time of year (May - August) in accordance with current guidelines (BCT, 2016). A second pre-commencement endoscope or emergence/re-entry survey should then be carried out within 7 days of the start date.
- v. Given the nature and location of the features, it is likely to be difficult to see bats emerge from the wall and hear their calls. Therefore, it is also recommended to conduct the first emergence/re-entry survey with aid of a thermal imaging camera to help confirm presence/ likely absence of roosting bats.
- vi. If bats are found to be roosting within the retaining wall during the surveys, a licence could be required. In this instance the recommendations and mitigation measures may be altered.

Other considerations and recommendations

- vii. Recommendations proposed within the preliminary ecological appraisal (Ecoleg, 2021) should be referred to.
- viii. In addition, two bat boxes should be installed ahead of construction 30-50m from the works area to provide alternative roosting sites during construction. The two bat boxes³ should be installed on the retaining wall upstream and downstream of the works, with the locations agreed by an ecologist.

³ <https://www.nhbs.com/2fe-schwegler-wall-mounted-bat-shelter-pack-of-2>

5. REFERENCES

Bat Conservation Trust (2016) *Bat Surveys for Professional Ecologists – Good Practice Guidelines*. Bat Conservation Trust, London.

Dietz & Kiefer (2016) *Bats of Britain & Europe*. Bloomsbury Publishing.

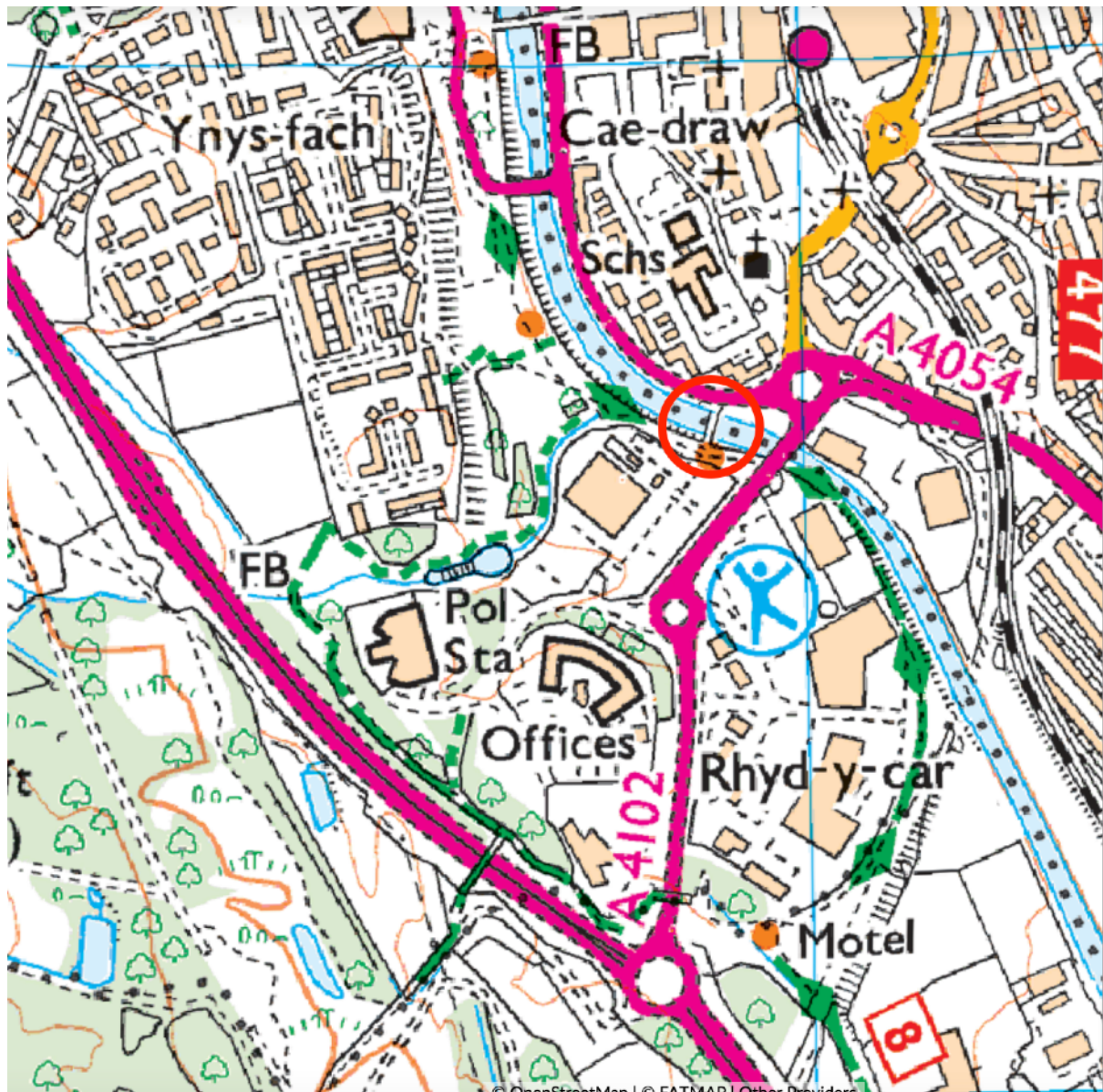
Ecoleg (2021) *Rhydycar Bridge, Merthyr Tydfil - Ecological Constraints Report*

Mitchell-Jones, A.J. (2004) *Bat mitigation guidelines; January 2004*. English Nature. Peterborough.

Russ, J (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing.

APPENDICES

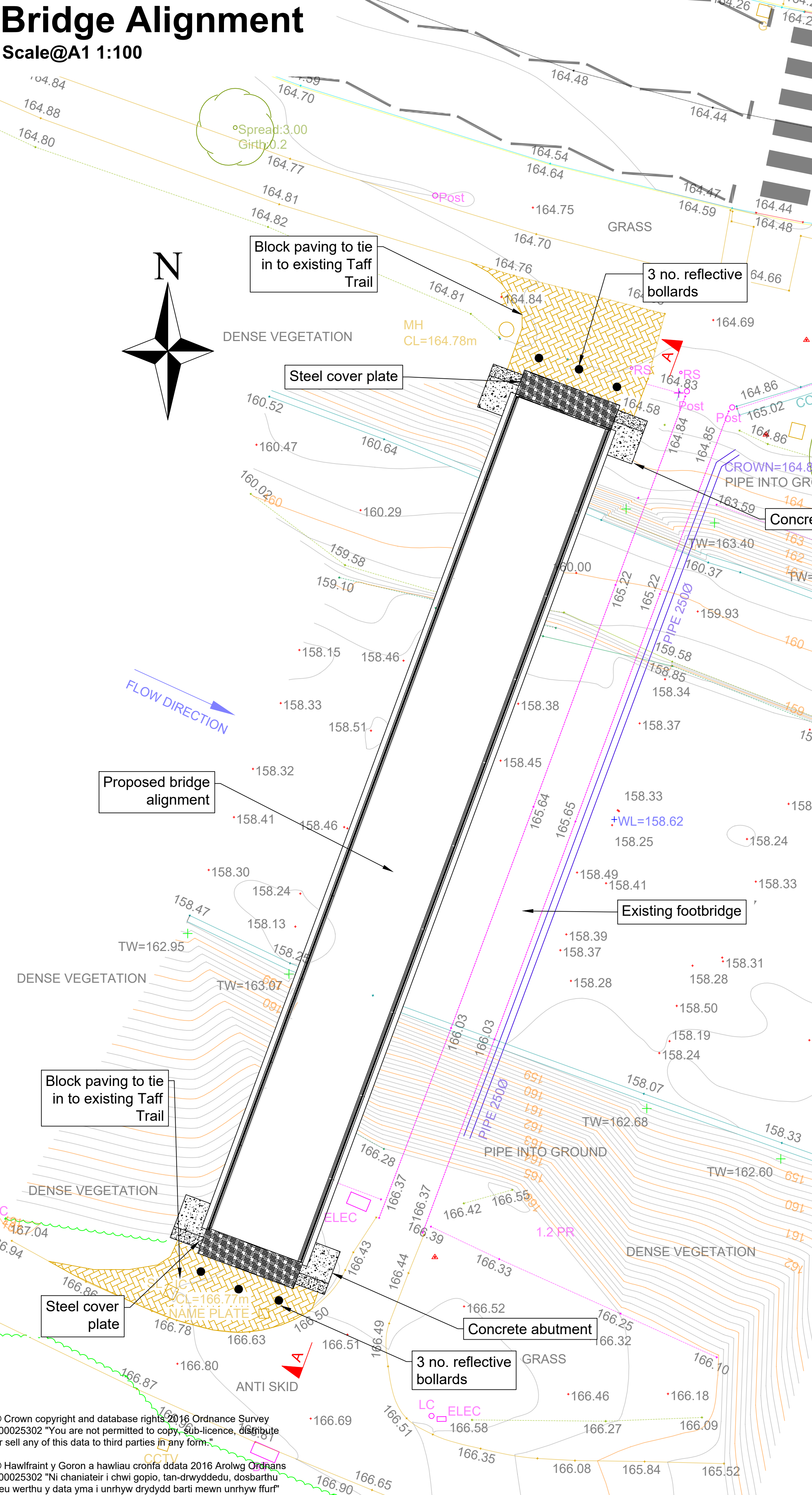
APPENDIX I - Site location



APPENDIX II - Construction Drawings

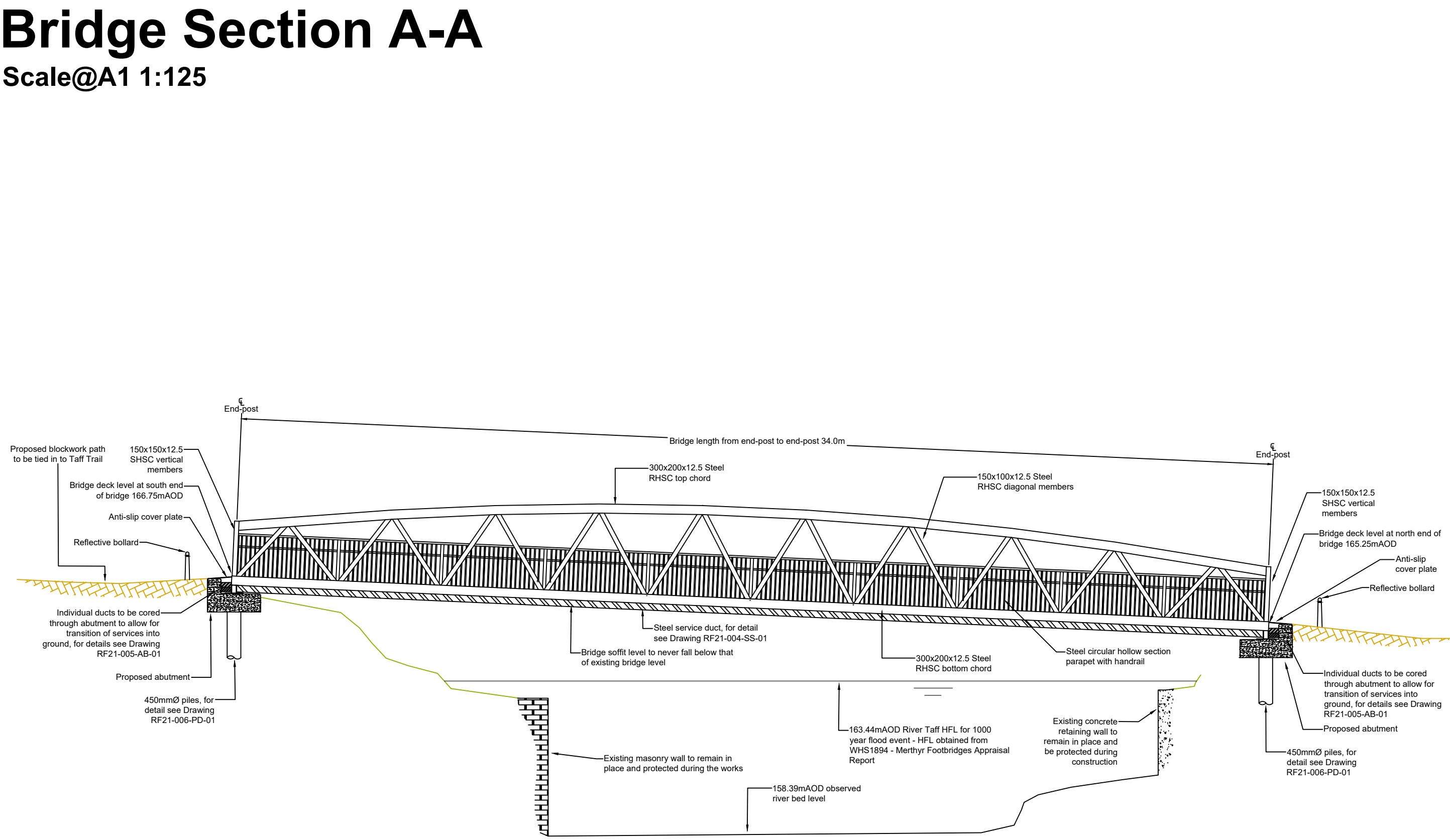
Bridge Alignment

Scale@A1 1:100



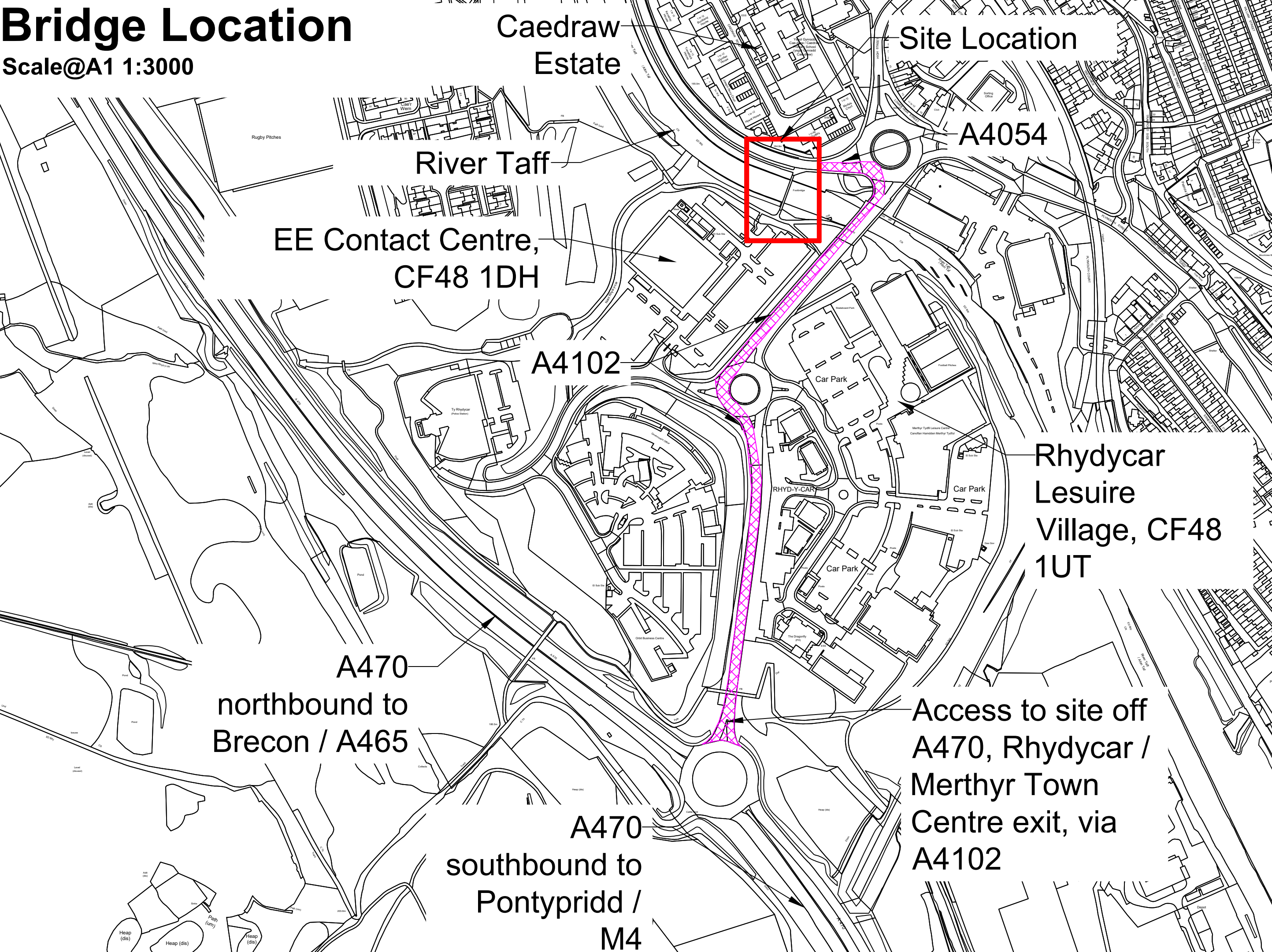
Bridge Section A-A

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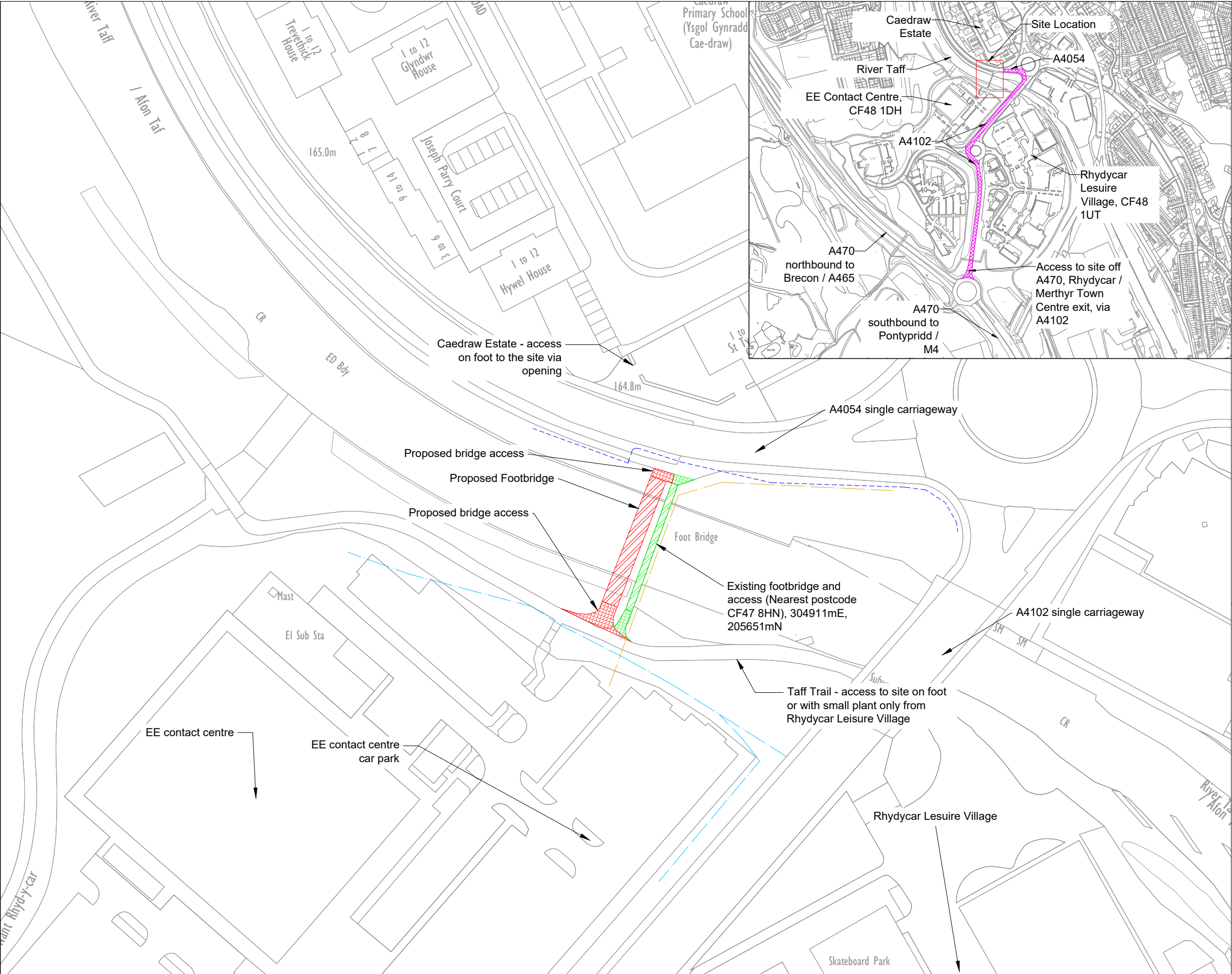


Bridge Location

Scale@A1 1:3000



Rev.	Amendment	Date	Drawn	Ck'd
NOTES				
1. All works are to be undertaken in accordance to the "Specification for Highway Works", published by the Stationary Office as Volume 1 of the Manual of Contract Documents for Highway Works, as modified and extended by the Works Information.				
2. This drawing is to be read in conjunction with other scheme drawings and relevant asset information				
3. This drawing is for information only and is not to be used for construction.				
4. The proposed details may vary when final design is undertaken.				
5. All dimensions are approximate and are given in millimetres unless stated otherwise. Do not scale from the drawing. All levels and chainages are given in metres unless otherwise stated.				
6. The contractor shall carry out the topographical survey prior to construction works commencement to confirm structure setting out points and founding levels.				
7. The Contractor shall carry out a full utilities search prior of commencing any work.				
8. The Contractor shall carry out a detailed survey to confirm existing dimensions and levels prior to commencement of any excavation/demolition/construction work is started and prior to ordering of any structural elements or components.				
9. The manufacturers' instructions regarding use, installation, care etc. of products shall be strictly adhered to unless stated to the contrary by the Employer with the approval of the TAA.				
10. Measures shall be incorporated in the proposed superstructure to prevent trespass along the sides of the footbridge.				
11. All RHS/SHS sections to be Grade S355J2H in accordance with BS EN 10210. All other structural rolled sections to be Grade S355J2 in accordance with BS EN 10025. All plates are to be Grade S355J2 in accordance with BS EN 10025. Welding shall be in accordance with BS EN 1090. All joints to be welded unless otherwise noted.				
12. Steel deck plate to receive anti-skid Bimagrip surfacing with 1-3mm Bauxite aggregate dressing or similar in accordance with the SHW.				
13. All bolts are to be high strength friction grip unless noted otherwise.				
14. All steelwork shall be painted to a coating system complying with SHW series 1900 with life to first major maintenance in excess of 20 years.				
15. Handrails shall have slip resistant matt finish to reduce glare level and increase visibility. Ends of the handrails to be smooth shaped and curved downward (150mm).				
16. Elastomeric bearings shall be designed by bearing manufacturer, based on the design forces provided by the designer, in accordance with BS EN 1337.				
17. All concrete shall be designed and specified in accordance with BS 8500-1&2:2006 and MCHW series 1700.				
18. All concrete in contact with the ground shall be specified in accordance with BRE special Digest No.1:2005-Concrete in aggressive ground, if appropriate. Concrete classes and mix references should be read in conjunction with Appendix 17/1 of the Works Information. Structural concrete - Mix Ref. C40/50. Exposure class - XC3/4, XD1, XF2 in accordance with Appendix 17/1.				
19. Concrete Finishes. a) Formed Surfaces indicated thus - F2. b) Unformed Surfaces indicated thus - U2				
20. All exposed arises shall have 25x25 chamfer unless otherwise dimensioned. Cover to reinforcement shall be maintained for all chamfers.				
21. Steel Reinforcement. (Complying with BS 8666:2005): a) Reinforcement shall be grade S500B to BS 4449:2005. b) Reinforcement shall be cut and bent to BS 8666:2005. c) Cover to reinforcement shall be 50 mm unless stated otherwise and comprised of the following: Minimum cover (45 mm) + Fixing Tolerance (15 mm &c).				
22. All buried concrete surfaces to be waterproofed to Clause 2004 of MCHW.				
23. Abutments to be waterproofed using a permitted waterproofing system in accordance with MCHW SWW Clause203 and in accordance with the requirements of CD358.				
24. Backfill behind abutment walls shall be Class 6N6P to the SHW. Any soft spots found at foundation formation level to be excavated and replaced with lean mix concrete under the pile cap.				
25. Gullies to be installed on either side of the deck on the approaches to drain of surface water.				
26.				
 MERTHYR TYDFIL COUNTY BOROUGH COUNCIL ENGINEERING DIVISION UNIT 5 TRIANGLE BUSINESS PARK PENTREBACH MERTHYR TYDFIL CF48 4TQ				
PROJECT TITLE: Rhydycar Footbridge Replacement				
DRAWING TITLE: Bridge Alignment				
DRAWN: AP		APPROVED: AB		
CHECKED: AB		DATE: 07/02/22	SCALE: As shown	
PROJECT NO.: RF21		DRAWING NO.: 007-BA-01	REV.: 01	



Key

Proposed Footbridge

Proposed Blockwork Path

Existing Footbridge

Existing Blockwork Path

Site Boundary

Road to Site Location

DCWW Foul Main

WPD LV Underground Cable

WWU M/P Main

- Notes**
1. Do not scale from this drawing.

2. Existing DCWW foul main to be diverted onto proposed bridge, forming part of the bridge superstructure. Exact location of proposed foul main TBC.

3. Precise placement of the proposed footbridge to be confirmed upon completion of the detailed design.

4. All services locations are approximations based off of current records. Prior to commencement of works, contractor to carry out investigation to determine the exact location of all utilities on site.

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MERTHYR TYDFIL
COUNTY BOROUGH COUNCIL
ENGINEERING DIVISION

UNIT 5
TRIANGLE BUSINESS PARK
PENTREBACH
MERTHYR TYDFIL
CF48 4TQ

DRAWN:	AP		APPROVED:		PJ	
CHECKED:	PJ		DATE:	06/01/22	SCALE:	1:1000
PROJECT NO.:	RYCFB		DRAWING NO.:	002	REV.:	01

PROJECT TITLE:

Rhydycar Footbridge Replacement

DRAWING TITLE:

Site Access and Compound

Bridge Plan View

Scale@A1 1:150

