

**Glan yr Afon Gas Works  
Ystalyfera  
Neath, Port Talbot**

Archaeological Watching Brief



*for*

**Grontmij**

*on behalf of*

**Wales and West Utilities**

CA Project: 4572  
CA Report: 13697

December 2013

# Glan yr Afon Gas Main Replacement Ystalyfera Neath, Port Talbot

## Archaeological Watching Brief

CA Project: 4572  
CA Report: 13697

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## SUMMARY

<b>Project Name:</b>	Glan Yr Afon Gas Main Replacement
<b>Location:</b>	Ystalyfera, Neath, Port Talbot
<b>NGR:</b>	SN 7655 0830
<b>Type:</b>	Watching Brief
<b>Date:</b>	1 October- 15 November 2013
<b>Location of Archive:</b>	Neath Port Talbot Museum Service
<b>Site Code:</b>	GYA 13

An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with a gas main replacement scheme at the site.

Evidence for slag heap tipping, associated with the processing of iron ore, was recorded. Two phases of iron tracks and associated culverts relating the movement of materials at the Ystalyfera iron works were also recorded. Further to this a number of concrete foundations which may be part of the bridge structures still visible in spanning the river Tawe.



## 1. INTRODUCTION

- 1.1 Between 1 October and 15 November 2013 Cotswold Archaeology (CA) carried out an archaeological watching brief for Gronnrij on behalf of the Wales and West Utilities at Glan yr Afon (centred on NGR: SN 7655 0830; Fig. 1). The objective of the watching brief was to record all archaeological remains exposed during the development.
- 1.2 The watching brief was carried out in accordance with a detailed Written Scheme of Investigation (WSI) produced by CA (2013) and approved by the LPA acting on the advice of Judith Doyle, the acting planning manager, GGAT. The fieldwork also followed the *Standard and guidance for an archaeological watching brief* (IfA 2009) and the *Management of Archaeological Projects 2* (English Heritage 1991), the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide* (EH 2006).

### ***The site***

- 1.3 The site is located on flat land on the west bank of the River Tawe between Varteg Hill and Mynydd Allt-y-grug (Fig. 2). The gas main trench ran for approximately 900m along eastern carriageway and verges of the A4067 (Swansea to Brecon road); the route started to the rear of the ASDA supermarket and ran to the northern boundary of Godrer-graig settlement. The route lay at between 110m and 130m AOD.
- 1.4 The underlying bedrock geology of the area is mapped as South Wales Middle Coal Measures Formation - Mudstone, Siltstone and Sandstone of the Carboniferous Period. Superficial geology is marked as Alluvium - Clay, Silt, Sand and Gravel of the Quaternary Period (BGS 2013). Natural substrate was observed in the southern extent of the gas main trench.



### ***Archaeological background***

- 1.6 The alignment of the replacement gas main is in close proximity to the west of Ystalyfera Ironworks (as seen in the Midland Railway company map 1870s), noted as being established around 1838, and is considered one of the most extensive works nationally. The associated tinworks was equally significant and peaked in terms of production in the mid-19th century, though remained in operation until the mid-20th century (GGAT 2005). The 1<sup>st</sup> edition OS map of the area shows the iron works at its largest extent, the survival of archaeological remains being confirmed by recent fieldwork carried out by Dyfed Archaeological Trust (DAT). The route of the gas main runs through the eastern periphery of the works area, and appears to transect buildings, tramways and tips illustrated on the 1877/1878 OS imprint that had disappeared by the 1961 edition of the OS map.
- 1.7 Much of the additional archaeological background evidence links closely to the ironworks, including record of infrastructure (such as the remnants of the canal to the north) and the boundary wall at the west end of Glanyravon; the latter is protected as a Grade II Listed Building.

### ***Archaeological objectives***

- 1.7 The objectives of the archaeological works were:
- to monitor groundworks, and to identify, investigate and record all significant buried archaeological deposits revealed on the site during the course of the development groundworks;
  - at the conclusion of the project, to produce an integrated archive for the project work and a report setting out the results of the project and the archaeological conclusions that can be drawn from the recorded data.

### ***Methodology***

- 1.8 The fieldwork followed the methodology set out within the WSI (CA 2013). An archaeologist was present during intrusive groundworks comprising of the excavation of replacement gas main trench (Fig. 2). Because of the consolidated nature of the ground a toothed bucket and mechanical breaker used to break up

hard spots relating to possible slag tips. A toothless bucket was used where feasible aside of these areas.

- 1.9 Where archaeological deposits were encountered written, graphic and photographic records were compiled in accordance with CA Technical Manual 1: *Fieldwork Recording Manual* (2007).
- 1.10 The archive from the watching brief are currently held by CA at their offices in Kemble and will be deposited with Neath Port Talbot Museum Service.

## **2. RESULTS (FIGS 2-4)**

- 2.1 The excavations consisted of approximately 900 metres of trench which for the purposes of recording was split into four trenches and three road crossings (RDX).

### *Trench 1*

- 2.2 Trench 1 was approximately 120m long and contained silt-clay 1002 that was not fully excavated. Inclusions of brick, worked stone and slag suggest that this was a redeposited layer possibly recently disturbed by re levelling the A4067. This was sealed by 0.2m of topsoil 1000.

### *RDX 2*

- 2.3 This trench contained a continuation of deposits seen in trench 1.

### *Trench 2*

- 2.4 Trench 2 was approximately 30m long. At an average depth of 1.2m below present ground level a buried modern road (2002) consisting of tarmac and concrete was revealed. This appears to be the original orientation of the B4599 as seen in the 1961 OS map of the area. This was overlain by redeposited deposits of silt clay 2001 and rubble up to 0.8m in depth. These were sealed by topsoil 2000 and a modern path 2003 averaging 0.2m deep.

### *RDX 3*

- 2.5 This trench was approximately 9m long and contained a continuation of the redeposited silt-clay and rubble seen in trench 2. This was sealed by a modern road surface.

### *Trench 3*

- 2.6 Trench 3 was approximately 50m long and cut through a deposit of slag, sand and gravel that was over 1m deep and not bottomed. This is interpreted as being part of the slag heaps associated with the iron works. It was sealed by a modern path.

#### *RDX 4*

- 2.7 This trench was approximately 17m long and contained a continuation of the deposits seen in Trench 3. No evidence was seen for the continuation of the road or track leading from the bridge seen in the 1877-8 map (Fig. 4).

#### *Trench 4*

- 2.8 The natural geological substrate consisting of silt clay and sandstone was revealed at the southern end of Trench 4 at an average depth of 0.6m below current ground level. This was overlain by a buried soil and slag heap tipping, which was sealed by the current road.
- 2.9 At the northern end of Trench 4 a series of concrete foundations were revealed. Due to the limited scope of the intervention little interpretation can be made of these however they may of later date related to the bridge structures which remain spanning the Tawe due to its close proximity.
- 2.10 Two phase of iron tracks were also recorded (Section AA) near the concrete foundations both orientated northeast-southwest. The first (4011 and 4022) were set into a layer of cinder and slag (4012) which may have been deposited to provide a firm base, consisted of four iron rails 3m apart and may represent two parallel lines. Into this was also cut a stone lined culvert (4019) which was probably used for drainage associated with the second phase of tracks. The rails were covered by a layer 4015 of slag gravel and concrete which formed a base for the second phase of tracks 4014. These were laid on a timber sleeper (4016) and consisted of two sets of rails set approximately 1.2m apart. The tracks were then overlain by 4017 a concrete and gravel layer and then sealed by the tarmac road.

### **3. DISCUSSION**

- 3.1 The excavations revealed a series of slag tipping events adjacent to the western bank of the River Tawe. Much of this may be redeposited or disturbed as a result of



1960s levelling and landscaping of the site following the closure of the iron works in 1946 (DAT *forthcoming*). The findings were consistent with the first addition OS map (Fig. 4)

- 3.2 The rail tracks recorded in Trench 4 align with a still extant bridge crossing the Tawe and were probably part of the extensive network of tramways and train tracks that were used to move materials around the iron works. The earlier phase of tracks appear to correspond to those illustrated on a map from the 1870s produced by the Midland railway Company (Midland railway company 1870s), and may be evidence for a tram way or railway. The later phase appear to be railway tracks. This may coincide with the arrival of the railway in the 1860s which partly replaced the canal (DAT *forthcoming*). The concrete foundations observed may be part of the still surviving bridges spanning the river Tawe however little further interpretation can be made.

#### 4. CA PROJECT TEAM

Fieldwork was undertaken by Peter Busby, Luke Brannlund and Matt Nichol. The report was written by Peter Busby. The illustrations were prepared by Jon Bennet. The archive has been compiled by Luke Brannlund, and prepared for deposition by Jon Hart. The project was managed for CA by Ian Barnes.

#### 5. REFERENCES

BGS (British Geological Survey) 2013 *Geology of Britain Viewer*.  
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html> accessed 18 November 2013

CA (Cotswold Archaeology) 2013 *Glan Yr Afon Gas Main Replacement, Ystalyfera, Neath Port Talbot; Written Scheme of Investigation for an Archaeological Watching Brief*

DAT (Dyfed Archaeological Trust) *Forthcoming; Ystalyfera Iron & Tinplate Works, Ystalyfera Archaeological Excavation*



GGAT (Glamorgan Gwent Archaeological Trust) 2005 *Southeast Wales Industrial Ironworks Landscapes – Year 1: The Core Ironworks Area* GGAT Report **2005/56CA**

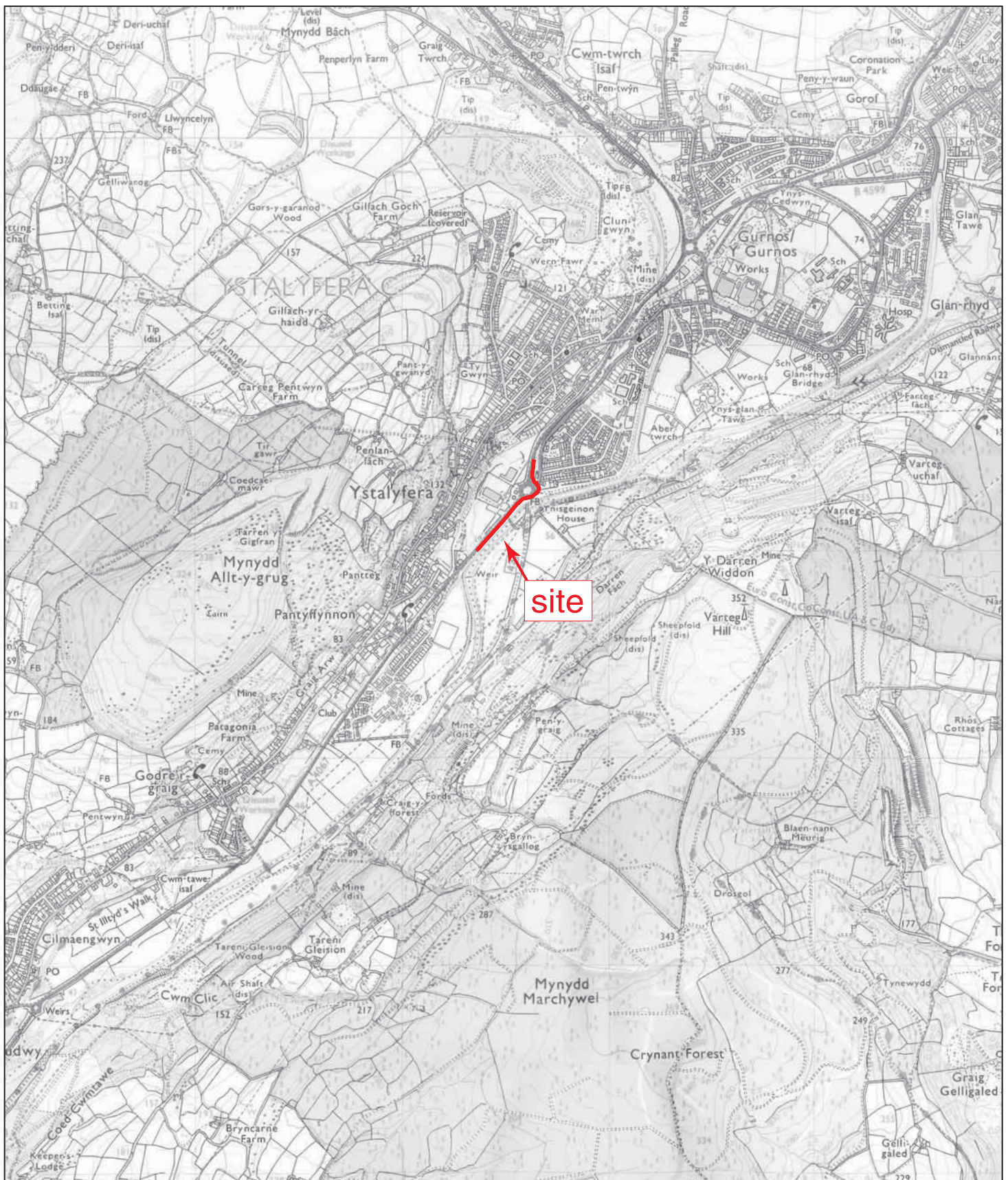
Midland Railways Company 1870s *Map of Swansea Canal Properties*



## APPENDIX A: CONTEXT DESCRIPTIONS

Trench No.	Context No.	Type	Fill of	Context interpretation	Description	L (m)	W (m)	Depth /thickness (m)	Spot-date
1	1001	Layer		Topsoil	Dark Brown silt clay			0.2	
1	1002	Layer		Made ground	Dark grey-brown silt clay with stone and brick rubble			>1	
2	2000	Layer		Topsoil	Dark brown silt clay			0.2	
2	2001	Layer		Made ground	Black-brown silt clay with rubble and lenses of building waste such as sand			0.8	
2	2002	Layer		Buried Road	Tarmac and concrete				
2	2003	Layer		Modern pavement	Tarmac and sand/type 1		2.5	0.3	
2	2004			Services	Generic number for services				
2	2005	Layer		Made ground	Dark grey-brown silt clay with stone and brick rubble				
RDX 3	30.1	Layer		Road surface	Tarmac and concrete			0.3	
RDX 3	30.2	Layer		Made ground	Dark grey-brown silt clay with stone and brick rubble				
3	3000	Layer		Pavement	Tarmac			0.1	
3	3001	Layer		Pavement	Type 1 and builders sand			0.4	
3	3002	Layer		Slag heap	Black-grey silt sand gravel with slag			>1	
RDX 4	40.1	Layer		Road	Tarmac and type 1			0.3	
RDX 4	40.2	Layer		Slag heap	Black-grey gravel silt with slag			>1.1	
RDX 4	40.3	Cut		Service trench	Cut of service trenches			0.4	
RDX 4	40.4	Deposit	40.3	Fill of service trench	Fill of service trenches			0.4	
4	4000	Layer		Pavement	Tarmac			0.1	
4	4001	Layer		Pavement	Type 1			>1.1	
4	4002	Layer		Slag heap	Black-grey silt with gravel and slag				
4	4003	Layer		Topsoil	Mid brown sand silt			0.3	
4	4004	Layer		Bank	Mid grey-brown silt clay			0.3	
4	4005	Layer		Road	Tarmac Road			0.25	
4	4006	Deposit		Foundation	Concrete	6.8		0.8	
4	4007	Cut	4006	Foundation cut	Northwest-southeast aligned vertical cut in profile	6.8		0.8	
4	4008	Deposit		Foundation	Concrete. Same as 4006	3.9		0.95	
4	4009	Cut	4008	Foundation cut	Northwest-southeast aligned vertical cut in profile	3.9		0.95	
4	4010	Cut		Cut of track way	Northwest-southeast aligned vertical sided cut.		0.5	0.8	
4	4011	Structure		Track	3 Iron tracks no sleepers	0.4	1.8	0.15	
4	4012	Layer		Slag heap	Dark brown cinder and slag	4.2	0.45	0.55	
4	4013	Deposit	4010	Fill on construction cut	Dark brown cinder and slag bedding for 4011	0.4	0.5	0.4	
4	4014	Structure		Track	4 Iron tracks	0.4	1.75	0.15	
4	4015	Layer		Track base	Slag gravel and concrete	0.4	3.1	0.25	
4	4016	Structure		Sleeper	Timber sleeper for tracks 4014	0.4	2.7	0.2	
4	4017	Layer		Surface	Concrete and gravel make up around tracks	0.4	3.3	0.3	
4	4018	Layer		Slag heap	Dark brown slag and gravel	3.6	0.4	0.5	
4	4019	Cut		Culvert cut	Northwest-southeast aligned	0.4	0.7	0.3	

					vertical sides in profile.				
4	4020	Structure	4019	Lining of culvert	Stones lining culvert	0.4	0.7	0.3	
4	4021	Deposit	4019	Fill of culvert	Dark grey-black silt sand	0.4	0.5	0.3	
4	4022	Structure		Track	2 iron tracks	0.4	0.3	0.1	
4	4023	Structure		Pipe	Iron pipe in 4017	0.4	0.1		
4	4024	Layer		Redeposited slag heap	Dark grey-black cinder slag and gravel	70	0.4	0.3	
4	4025	Layer		Buried soil	Grey-brown sand silt	15	0.4	0.3	
4	4026	Layer		Natural	Grey-orange-brown silt clay	70	0.4	>0.6	
4	4027	Layer		Natural	Grey-brown sandstone	3	0.4		



0 1km



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PROJECT TITLE

Glan Yr Avon, Gas Main Replacement  
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FIGURE TITLE

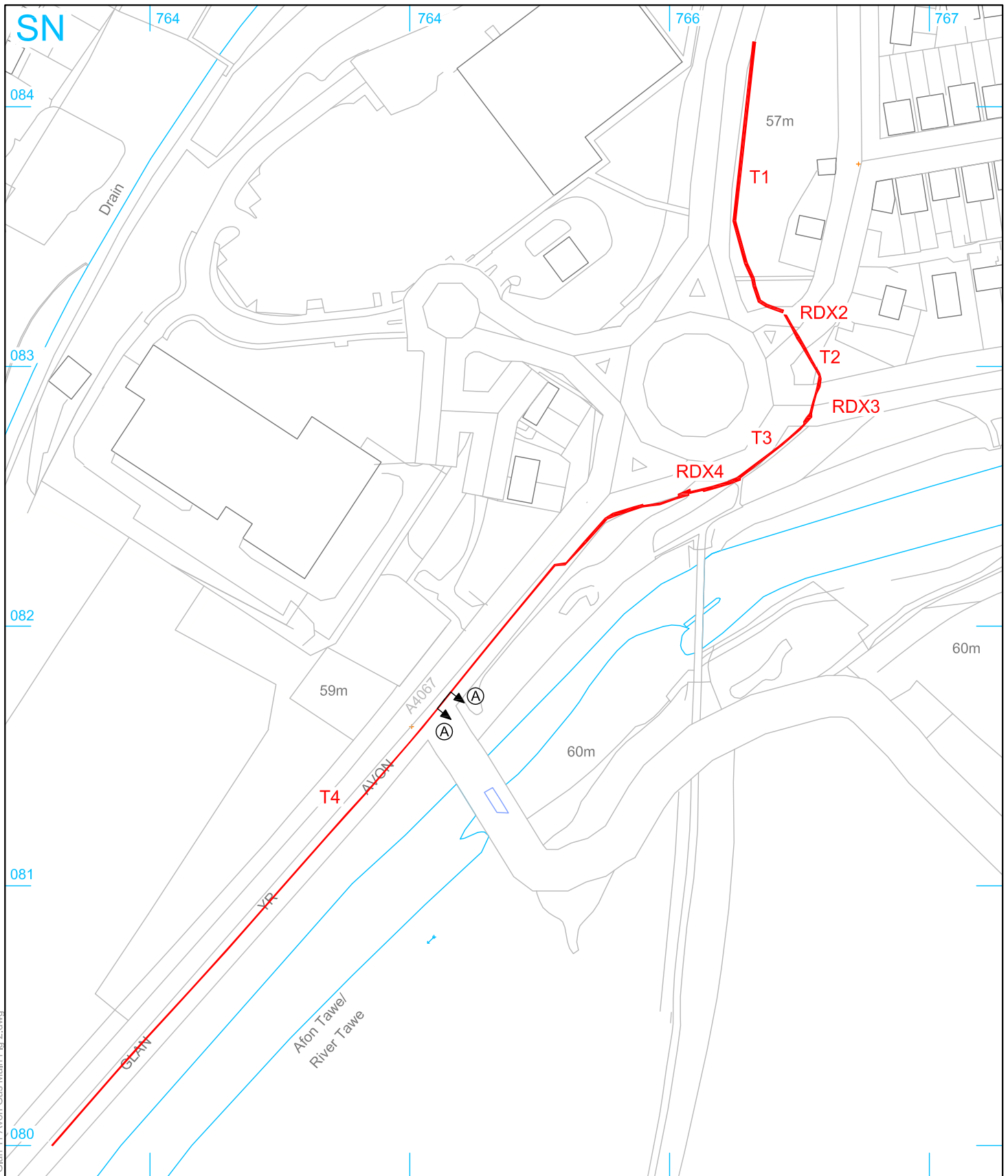
Site location plan



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FIGURE NO.

1



 Observed groundworks  
 location of trench section



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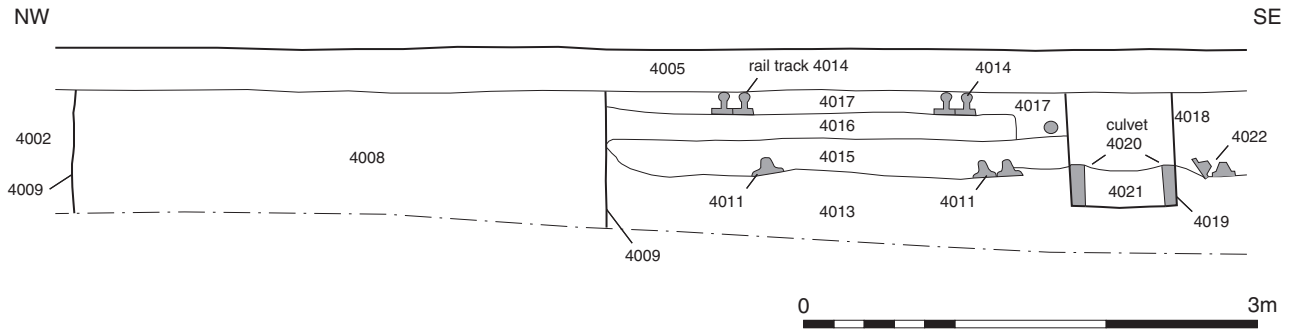
PROJECT TITLE  
**Glan Yr Avon, Gas Main Replacement  
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FIGURE TITLE  
**Area of observed groundworks**



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Section AA



Southern rails of earlier rail track 4011



Rail track 4014, looking north-east



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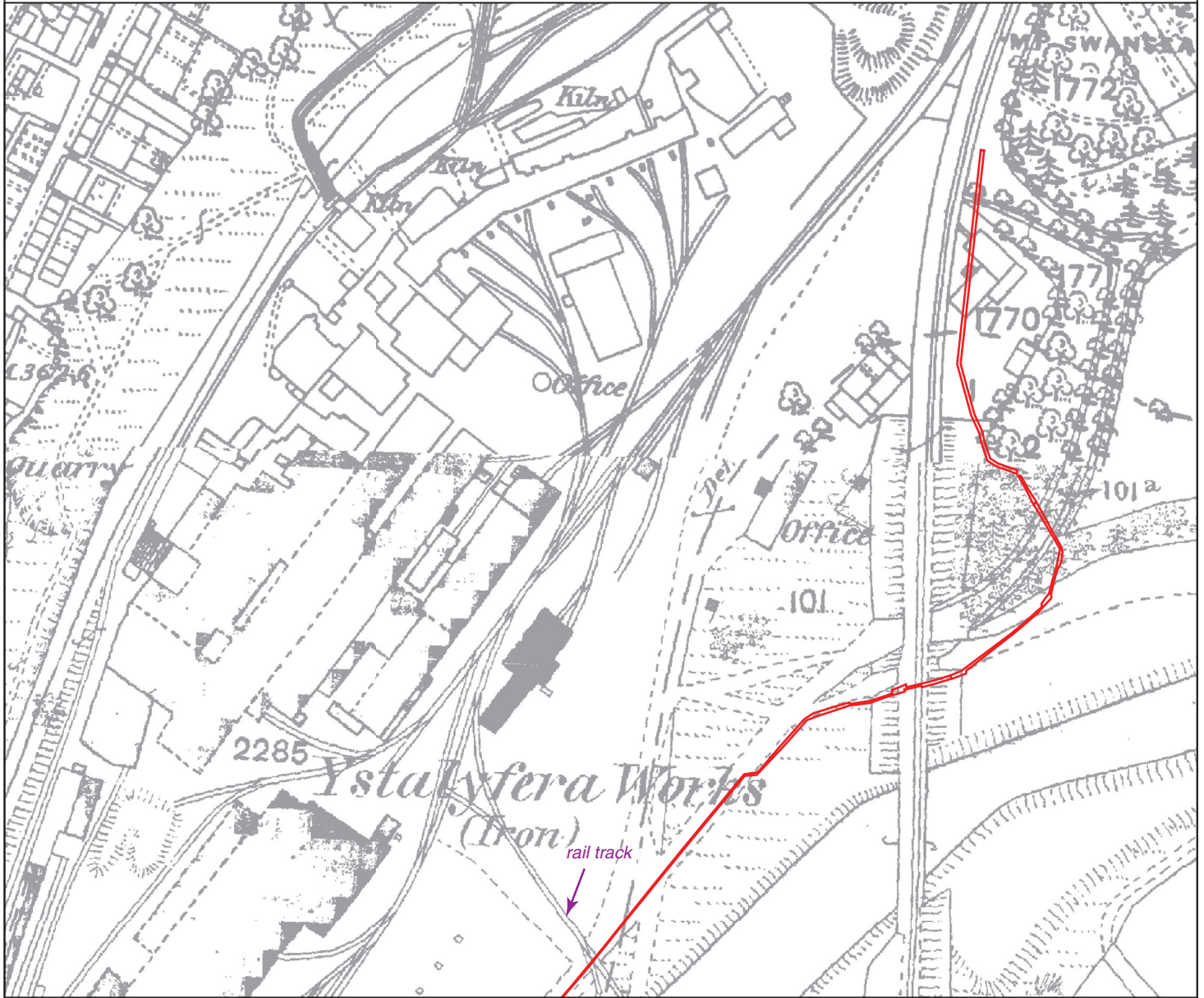
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PROJECT NO.	4572	DATE	11/12/2013	FIGURE NO.
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 Observed groundworks



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**PROJECT TITLE**

Glan Yr Avon, Gas main replacement,  
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**FIGURE TITLE**

**Extract from the 1877 to 1878 map of  
 Ystalyfera showing observed  
 groundworks**



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FIGURE NO.

**4**