



# **Tavistock-Bere Alston Railway, Devon**

## **Archaeological impact and mitigation recording report**





Report No 2011R093	Report Name TVMHP Tavistock - Bere Alston Railway Watching Brief Report		Report Author Colin Buck	
Event Type				
Site Consultancy	Archaeological impact assessment	Archaeological watching brief		
Client Organisation TVMHP (West Devon Borough Council)		Client Contact Chris Hariades (TVMHP)		
Monuments (Mon UID)				
DHER	22719 (Railway line)	51334 (Abbotsfield Bridge)	3956 (Crowndale mine)	51335 (Shillamill Viaduct)
Fieldwork dates (From) (To)		(Created By)	(Create Date)	
1/10/2008 23/12/2008		Colin Buck	31/8/2011	
Location (postal address; or general location and parish)				
Tavistock to Bere Alston Railway (from Abbotsfield bridge to east end of Shillamill Viaduct)				
(Town – for urban sites)		(Postcode)		
West of Tavistock				
(Easting) X co-ord		(Northing) Y co-ord		
From: SX	47084	73657		
To: SX	46649	72191		

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## **Project background**

The study area forms part of the Plymouth, Devonport and South Western Junction Railway from Lydford to Plymouth, which was opened in 1890 to give the LSWR a direct route to Plymouth from Waterloo via Exeter and Okehampton. It includes 19 bridges, a tunnel and a viaduct, and is approximately six miles long. The railway closed in 1968, and has become overgrown and derelict since then, apart from a section in Tavistock itself which has recently been adopted as a public amenity. The current proposal as defined and funded by the Tamar Valley Mining Heritage Project was to convert the line within the study area to a footpath and cycleway, which would give improved public access from Tavistock to the World Heritage Sites in the Tamar Valley.

An archaeological assessment was tendered and undertaken by the Historic Environment Service of Cornwall County Council (CCC HES) Projects in 2006 (John Smith Report No. 2006R006). The assessment found the route of the railway to be substantially intact, with only two bridges having been demolished, and the trackbed overgrown in many places but essentially unobstructed. The remainder of the civil engineering works are in place and suitable for reuse. The line is a fine example of a late-Victorian main-line railway, and one of the last examples to be built in the west of England. From an archaeological and historical perspective, there are good examples of railway overbridges and underbridges, embankments, cuttings, a tunnel and a viaduct, all of which have excellent individual and group value and which clearly demonstrate the technology of railway construction. The landscape through which the line runs is designated as an Area of Outstanding Natural Beauty, and there are good views of both the Tamar and Tavy valleys from the track at several locations.

In the autumn of 2008 CCC HES Projects was commissioned by the Tamar Valley Mining Heritage Project (TVMHP) to produce an Impact Assessment (Project No. 2008069), and archaeological recording (Project No. 2008105), for a project to clear the railway line of vegetation for the provision of safe public access. Unfortunately, the lack of a defined project design prior to commencement of the site works meant an impact assessment could not be produced before works began, although the archaeological site impacts were minimised during the works as part of archaeological site consultancy. Instead, a smaller project (named Stage 1) was defined by Devon County Council (DCC - Graham Cornish) to undertake the works described in the aims and objectives. Site work began in early October 2008, and finished at the end of December 2008.

## **Aims and objectives**

The entire trackbed cannot be used for public access as there are plans to re-open the line as a going concern for a new railway line from Tavistock to link up with the existing railway terminus at Bere Alston. However, the line and bridges etc are still owned by Network Rail. Given that there has been no detailed project design produced by DCC (apart from a summarised planning application for change of use), the necessity of having archaeological recording for disturbed features was still paramount during the (undefined) works. CCC HES Projects (Proj No. 2008105) was commissioned to undertake this work based on a project design produced by C. Buck (4/10/08) as defined by DCC (Graham Cornish), who obtained grant funds to undertake the following works (by the end of December 2008):

- To clear the trackbed of vegetation/trees etc from the demolished railway bridge (Abbotsfield – A390) to the start of the Shillamill Viaduct.
- Securely fence/grille two mine shafts which are close to the west side trackbed
- Ensure the sides of the railway line in cuttings are secure for public access (H & S)
- Ensure track drainage operates effectively (original drainage systems are blocked etc) by minimal excavation
- Co-ordinate the project with Bill Horner (Devon County Archaeologist) and Chris Hariades (TVMHP Project Manager).
- To link the rail track route with the Tavistock Canal (pending planning permission), to create a circular route for walkers from Tavistock.



## Site background

The Tavistock-Bere Alston Railway line (Bere Alston SX 44016 67409 to Crease Lane Bridge SX 47167 73874), was constructed between 1887 and 1890, and covers a distance of approximately six miles (Figs 1 – 3). It was formerly the mainline link between the market town of Tavistock and the Bere Peninsula to the southwest. It follows a route along the watershed ridge between the Tamar and Tavy valleys before aligning with the western bank of the Tavy into Tavistock. The route is undulating through farmland and woodland and includes many embankments and cuttings and a spectacular viaduct over the Lumburn tributary to the River Tavy. The route was closed in 1968 (although the branch line from Bere Alston to Plymouth and Gunnislake remains), and the track was taken up. The route is now in a mixed condition, parts open and walked by the public, parts overgrown and blocked by scrub. However, the original track bed and structures along it are in good condition and are fine examples of Victorian engineering. This is summarised from an archaeological assessment undertaken by CCC HES Projects in 2006 (John Smith Report No. 2006R006).

## Impact Assessment

This summary impact assessment is intended to inform and guide Devon County Council Historic Environment Service, of the impact of the railway track clearance works and mine shaft safety works. This section of the report summarises the archaeological resource, and describes the impact and mitigation of the railway line works as part of a mitigation strategy. However, it should be noted that the mitigation procedure was undertaken during the project (due to the short project funding timescale and lack of advanced project specifications), by efficient communication between the report author (as site archaeologist), and both Bill Horner (DCC archaeologist) and Graham Cornish (DCC Project manager).

Sites 43 – 50 are described in detail (and in Smith 2006, Section 7 and Fig 40), and reproduced on plan in Fig 3. They are all affected by the railway line works to a greater or lesser extent. The impact of the building conservation works on each site is then described, and a final section details the impact remediation measures.

The potential impacts during works are described below. Impacts are described in the text section for each site on a feature-by-feature basis. The following site impact terms are used within each site identification description:

<b>Major positive</b>	Site continues in, or is restored to, its original design and use
<b>Moderate positive</b>	Site restored as far as possible respecting its original function, but its use is altered
<b>Minor positive</b>	Site partially restored; interpretation introduced
<b>Negligible positive</b>	Stabilisation/maintenance of site
<b>Negligible negative</b>	Benign neglect – losses of fabric over a long period of time
<b>Minor negative</b>	Site suffers areas of alteration or damage, which contribute to loss of meaning
<b>Moderate negative</b>	Significant loss of fabric or alteration, leading to erosion of original character
<b>Major negative</b>	Complete demolition/removal

## **2005 Assessment report site gazetteer description (Smith 2006) and impact assessment (2008)**

### **Site 43 Shillamill Viaduct to Crowndale Bridge SX 46615 72169 to SX 47090 72585**

#### *Description*

The line runs initially on a short embankment, then into a rock cutting, and onto the embankment again before Crowndale Bridge. This section of the railway has been little used by walkers (perhaps because the viaduct is walled-off), and the vegetation cover is dense on the embankments, with small trees, gorse and brambles making progress difficult. The rock cutting has caused stability problems in the past, and the up (north-west) side has had a retaining wall built against it over a considerable distance. This has been buttressed in places. Vegetation in the cutting is less dense, consisting mainly of small, slender trees. Just to the north of mine shaft (45) is the collapsed remains of a brick chimney stack, which marks the site of a wooden permanent way hut.

#### *Recommendation*

Vegetation clearance and surfacing work will be required. Stability of the cutting sides should be assessed as part of preparatory works for the Trail.

#### *Site works impact (2008)*

The conservation works relate to vegetation and tree management to immediately stop any further progressive damage to the track bed or sides of the steep railway cutting, which has already resulted in damage to the sides of the cutting where trees have fallen, removing localised sections of ground. In addition, minimal drainage works will be necessary to reduce the pooling of water in localised places, and from water outlets emanating from the steep rock cuttings.

The overall impact of the proposed works on this feature can be defined as '*Negligible positive*', although tree stumps in the track bed will be removed by machine. The works will provide more ground stability and a higher degree of Health and Safety for increased public access for at least another generation (providing the track is adequately annually maintained).

#### *Residual impact (2008)*

There are unlikely to be significant residual impacts in the medium term – apart from the positive aspect of being able to see an abandoned railway track cleared of vegetation/trees for many decades.

#### *Reduction of impact (2008)*

Site consultancy with the project manager (Graham Cornish) will minimise any negative impacts. Careful planning of stump removal and drainage scheme methodologies will minimise impacts to the ground surface.

### **Site 44 Mine Shaft at approx SX 4701 7247 (Devon SMR 3956 –Crowndale Mine)**

#### *Description*

The railway passes close by the sett of Crowndale Mine. Immediately adjacent to the up (north-west) side of the line is a small open mineshaft cut into solid rock. It has been poorly capped with two wooden sleepers and some steel mesh.

#### *Recommendation*

The stability of the shaft collar seems to be good, as it is in solid rock. Safety works will be required before the Trail can be opened, and it is suggested that a secure grill be fixed over the shaft mouth.

#### *Site works impact (2008)*

The conservation works should ensure safe public access along, and to features adjacent to, the railway line. It is likely that the open shaft mouth will need to be grilled and the exterior fenced.

The overall impact of the proposed works on this feature can be defined as 'Minor negative'. The site of this mine shaft, although near the railway track (in undergrowth), would have previously been overlooked by a majority of people. However, the safety works (although accentuating the site), will provide a higher degree of Health and Safety for increased public access.

#### *Residual impact (2008)*

There is no doubt that any shaft fencing is obtrusive and affects the site's character and an impression of its original function. This site is no exception (see Fig 10). It is likely that the significant residual impacts in the long term would be the fencing itself, because the grille design is of relatively low impact. The positive residual aspect is an awareness of a mine shaft close to the railway, part of Crowndale Mine.

#### *Reduction of impact (2008)*

Site consultancy with the project manager (Graham Cornish) will attempt to minimise any further negative impacts, by sensitive fence design (although it will need to be robust in case the railway track is, at a later date, re-used as a railway line).

### **Site 45 Mine Shaft at SX 47023 72489 (Devon SMR 3956 –Crowndale Mine)**

#### *Description*

A second mine shaft stands adjacent to the up side of the railway. It has run-in to a choked cone at surface, and is surrounded by a railway fence which is no longer in good condition.

#### *Recommendation*

Safety works will be required before the Trail can be opened. The shaft should be securely fenced and warning signs erected.

Refer to Site/Residual and Reduction impact comments given for Site 44 (although this site has a closed shaft – so no grille will be necessary).

### **Site 46 Crowndale Bridge 664 SX 47090 72585**

#### *Description*

The bridge carries the railway over a farm lane which is now disused and grown in. It has a single stone arch of rubble masonry, with cut granite voussoirs to the arch, rubble masonry wing walls and parapet. The parapet is missing its top courses and coping, and is in a poor condition. Ivy growth masks part of the structure.

#### *Recommendation*

The bridge should be the subject of vegetation clearance, a condition survey and consolidation measures as part of preparatory works for the Trail. There is the potential for access to the Trail from Drake's Walk (the Tavistock Canal) via the disused farm lane, and to the public road at SX 47243 72463.

Refer to Site/Residual and Reduction impact comments relating to vegetation clearance given for Site 43. It is doubtful if there will be sufficient funds to undertake any parapet conservation works during this track clearance phase - although these works will be undertaken if the railway line is to be re-opened as a railway line from Tavistock to Plymouth.

**Site 47 Crowndale Bridge to Crowndale Cattle Creep  
SX 47090 72585 to SX 47048 73440**

*Description*

The railway continues north on an embankment, which is densely vegetated with brambles, gorse and semi-mature trees. At SX 47157 72829 is a gated occupation crossing, which is no longer in use. The line then runs into a deep and impressive rock cutting with near vertical sides, and the vegetation becomes less dense, with semi-mature trees and small scrub. There are some drainage problems in the cutting, with standing water on the trackbed. At SX 47093 73251 is another disused occupation crossing. The line runs again onto an embankment, where the vegetation has been cleared in relatively recent times and the trackbed is mostly covered in grass. There is evidence that this part of the line is currently used by walkers. From the embankment there are excellent views of Tavistock and the western rim of Dartmoor.

*Recommendation*

Vegetation clearance and surfacing work will be required, together with reinstatement of the drains in the cutting.

Refer to Site/Residual and Reduction impact comments relating to vegetation clearance given for Site 43.

**Site 48 Crowndale Cattle Creep 663 SX 47048 73440**

*Description*

Distance from Waterloo – 214 miles 55 chains. The bridge carries the railway over an accommodation lane for farm access. This lane is now disused and blocked on the eastern side by new housing. The bridge has a rubble masonry circular arch with cut granite voussoirs and quoins, rubble masonry wing walls and parapets, one of which has been replaced with timber rails. Re-pointing is required to some of the structure, but otherwise the bridge appears to be in good condition.

*Recommendation*

The bridge should be the subject of vegetation clearance, a condition survey and consolidation measures as part of preparatory works for the Trail.

Refer to Site/Residual and Reduction impact comments relating to vegetation clearance given for Site 46.

**Site 49 Crowndale Cattle Creep to Abbotsfield Road Bridge  
SX 47048 73440 to SX 47093 73672**

*Description*

The line continues north on an embankment, overgrown with small trees and low scrub, but passable on foot.

*Recommendation*

Vegetation clearance and surfacing work will be required.

Refer to Site/Residual and Reduction impact comments relating to vegetation clearance given for Site 43.

**Site 50 Abbotsfield Road Bridge 662 SX 47093 73672 (Devon SMR 51334)**

*Description*

Demolished. The railway was carried over the A390 public road by an iron plate-girder bridge which has now been removed, leaving only the rusticated ashlar masonry abutments and wing walls on either side of the road.

### *Recommendation*

As the bridge has been removed and the next section of the line has been taken into private ownership, formal signed access will have to be provided from the public road to the Trail. At present there is an informal path which serves this function.

Refer to Site/Residual and Reduction impact comments relating to vegetation clearance given for Site 43. It is recommended that parapet conservation works are undertaken at a later stage. These works may be considered if the railway line is to be re-opened from Tavistock to Plymouth.

There do not appear to be any public access and interpretation measures that have visually impacted the site.

## **Impact mitigation strategy**

The impact mitigation strategy methodology is described in terms of three main stages: The pre-works consultancy, the Historic Buildings Consultancy during works and the archaeological recording record (during and after works). This mechanism demonstrates the steps that have been taken to avoid or minimise adverse impacts, confirms that the proposed works have been designed in close liaison with the historic environment consultant. This is based on a clear understanding of the significance of the site using appropriate methods and techniques for site monitoring and recording.

CCC HES Projects (Proj No. 2008105) was commissioned to undertake the three components described as the impact mitigation strategy. The project was based on a project design produced by C. Buck (4/10/08) the broad specifications defined by DCC (Graham Cornish), and recording specifications defined by Bill Horner (DCC archaeologist).

## **Working methods**

The following text summarises the general WSI for all archaeological consultancy and archaeological recording for projects relating to the TVMHP (Tamar Valley Mines Heritage Project: Written Scheme of Investigation: Historic Building and Archaeological Recording Consultancy 3/9/2009).

All archaeological recording work was undertaken according to the Institute for Archaeologists (IfA) *Standards and Guidance for Archaeological Investigation and Recording*. Staff will follow the *IfA Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology*.

The principal factor in effective project delivery will be the employment of key project staff who are expert in the management and recording of the industrial heritage. Cornwall Historic Environment Service project staff draw upon a substantial track record in undertaking similar work throughout Cornwall, as well as a detailed knowledge of the project area and its sites.

### **Historic buildings consultancy**

- CCC HES (Senior Archaeologist) will liaise with the Devon County Historic Environment Service - DCHES (Bill Horner), the TVMHP Project Manager (Chris Hariades) and the railway project manager (Graham Cornish).
- The HES Senior Archaeologist will attend regular site meetings at an approximate frequency of 0.5 day per week for the contract.
- HES will ensure that site conservation works are carried out to standards recommended by English Heritage best practice, and will halt inappropriate or sub-standard work and inform DCHES, the building engineer and TVMHP Project Officer.

### **Fieldwork: archaeological recording**

- Will be undertaken for all newly exposed archaeological features and any features revealed through excavation.
- If appropriate, measured survey will be carried out by hand measurements (using offset techniques at a scale of 1:50), using a paper copy of the survey supplied by the Client. This record will then be added to the original survey using CAD (or equivalent) software.
- The resulting survey output will be a revised measured survey drawing showing all conservation works that have been undertaken. This will be reproduced at a scale of either 1:50 or 1:100 (appropriate to the size of area recorded) and will form part of the Historic Buildings archive watching brief report.
- Analysis of the building fabric will be recorded in the form of field notes and written up at the archive report production stage.

### **Fieldwork: archaeological recording during mine shaft and safety works treatment**

- DCHES (Bill Horner) has advised that archaeological recording should be undertaken during any excavation that has revealed archaeological features. Recording will be undertaken using a mix of direct measurement, sketch plotting and photography, as appropriate (constrained by safety factors).
- Where significant remains are encountered the site archaeologist will be given the opportunity to make an appropriate form of record before work proceeds; where a temporary stop of work is required to undertake this, the site archaeologist will make a request via the project resident Engineer.
- If archaeological deposits of a regional or national importance are uncovered, contingency should be allowed within the works programme to review options to ensure their preservation in situ. In the event that significant remains cannot be preserved in situ, strategies for their relocation or detailed recording will be agreed with the Devon County Archaeologist.
- Any variation in named personnel for archaeological recording and historic buildings consultancy will be agreed with DCHES, and the TVMH Project Officer.
- The chosen site archaeologist will adhere to Health and Safety Policies (see below), under the direction of the designated Site Safety Officer.

### **Site recording (general)**

- Site drawings (plans, sections, locations of finds) will be made by pencil (4H) on drafting film; all plans will be linked to the Ordnance Survey landline map; all drawings will include standard information: site details, personnel, date, scale, north-point.
- The site archaeologist will undertake recording in line with recommendations given by IFA. Sections and plans will be drawn on site at appropriate scales which will adequately record structures or features at appropriate levels of detail, and appropriate sections reproduced in the archive report at either 1:50 or 1:100 to adequately demonstrate revealed archaeological features.
- All features and finds will be accurately located by means of a National Grid reference and all archaeological contexts will be described using a standard format and linked to a continuous numbering sequence.
- The archaeological watching brief report will detail (and if appropriate summarise) all forms of archaeological recording that has been undertaken at each of the mine sites. Each major mine site will have a single archaeological watching brief report that details all project related work to that site (ie trails works, building conservation works, interpretation works etc).

For Treatment of finds, Photographic recording specifications, report production and archiving specifications refer to the TVMHP WSI (2009).



# Results

In late 2008, the work required for conversion of a disused railway line to a footpath and cycleway was extensive rather than intensive, and included a great deal of vegetation clearance, tree and stump clearance, the reinstatement/cutting of surface drains in the cuttings, safety fencing to bridge parapets, and safety works with fencing to two mine shafts (see Fig 2 annotations for project plan details).

## Track bed/cutting vegetation removal

The initial site work from early October 2008, consisted of gaining access along the railway line (by brush cutting/chain sawing) of a large amount of vegetation and trees (mainly ash/hazel and sycamore), both on and overhanging the former railway line. This was then followed by the use of a tracked machine to remove the tree stumps from the track bed, and the excavation of a shallow drainage ditch (0.25- 0.4m deep and 0.5m wide), along the (lower) side of each of the two main track cuttings (both above and below the site of the two Crowndale mine shafts - see Figs 2 and 3). Figure 4 is a view of the railway track during clearance of trees and residual stumps, following extensive strimming/removal of track vegetation, and the excavation of a shallow drainage route next to the side of the railway. During periods of heavy rain, water poured out of the rock cut sides and into the track bed – causing ponding in places. There would have been a drainage system in place throughout the use of the railway line - but presumably this had become blocked. However, the drainage of water from the cuttings track bed (via the shallow surface drainage ditches), has been important to maintain and keep the tracks relatively clear and dry for public access all year round. The track bed (which still contains the original ballast stone), was scraped and levelled, to form a stable surface from which walkers can use the track. Figure 5 is a view of the trackbed over two years after the project was finished – it can be seen that vegetation is once again taking hold of the track bed; bi-annual cutting/clearance appears to be necessary.

## Mine shaft capping/bridge parapet fencing

The archaeological assessment located two Crowndale mine shafts close to the railway line. The first, (Site 44) is named 'Unnamed Shaft', the second, Gill's Shaft (Site 45). Frederick Sherrell, Geotechnical Mining Engineers of Tavistock, were asked to produce a geotechnical mining report (No. 3006, 16<sup>th</sup> October 2007), on the shafts and any related factors affecting the nearby railway line. Their report not only described the shafts in detail, but also the related (Main) lode that underlies the adjacent railway track (see Figs 6 and 7). The report made fencing and shaft capping recommendations.

### *Site 44 (Smith 2006) Unnamed Mine Shaft*

During archaeological recording in mid October 2008, this partly open mine shaft was photographed before any works were undertaken. The opening was partly obscured by timbers supported across the shaft by a section of old tramway line (see Fig 8). The shaft was located on the south side of an inclined rock cutting of surface slate bedrock, close to the railway line. The opening was approximately 1.1m x 2.5m in plan, with a shaft depth in excess of 10.0m to solid ground. Sherrell's 2007 geotechnical letter report includes a detailed account of the underground stope and Main lode that was inspected from the open shaft. A sketch plan and section (Sherrell Figs 4 and 5) of the site inspection and the related underlying stope/lode extending under the railway line has been reproduced (with permission) in Figures 6 and 7 respectively, of this report.

By late October the site around the shaft had been levelled to a flattish surface with a machine digger to form an inclined surface (approximately 5.0m x 4.0m) around the shaft. Approximately 5.0m of ground varying from 1.0m in height at the east end and 0.7m at its west end for a width of 1.0m was removed to form the flat rock surface. A low masonry wall (on a concrete foundation) was constructed around the shaft to form a 0.25m high feature upon which a galvanised steel frame was formed and attached (see Figs 9 and 10, Grille specification). Figure 9 is a view of the shaft area after site excavation, after shaft grille erection and after shaft area fencing. The heavy duty timber and steel mesh fence is designed to be retained if the railway line is to be re-instated at a later date.

Given the extent of the Crowndale mine workings extending under the railway line (and beyond to other shafts), it was thought prudent to insert a geotex permagrid (Tensar Triax) at a depth of approximately 0.3m under the entire width of the railway line – to support the trackbed in case of sudden mine working collapse at depth.

#### *Site 45 (Smith 2006) Gill's Mine Shaft*

During archaeological recording in mid October 2008, this closed mine shaft was photographed before any works were undertaken. The shaft was fenced with wire and concrete/timber posts (see Fig 11). The shaft is located approximately 5.0m north of the railway line (see Fig 2) and is approximately 5.0m long and 3.2m wide. The shaft is visible to a depth of only 2.0m, where it is blocked. The western side of the site is partly enclosed by a stone wall that was presumably a remnant of an enclosing collar safety wall. Some trees are growing both within the shaft fencing and on its south east side. The shaft itself was re-fenced with timber posts and barbed wire, whilst another outer fence (adjacent to the railway line – see Fig 12) was also constructed, to the same specification as Site 45.

#### **Railway bridge parapet fencing**

Sites 46 (Crowndale Bridge – No. 664) and 48 Crowndale Cattle creep – No. 663), were both fenced with 1.3m high tanalised post and rail fences (each fence overall approximately 12.0m long). In addition close steel mesh was fitted to the sections of fencing immediately parallel to the former railway line (see Fig 5). Site 50 (Abbotsfield Road bridge), was also fenced (8.0m long), where the bridge was removed as it went over the road – leaving a vertical drop from the railway line. However, vegetation covers this site from the public access track which deviates from the end of the railway bridge to go down the west side of the embankment to join Abbotsfield Road.

## **References**

- Buck, C., 1998, *Preliminary assessment of industrial sites of archaeological importance in the Tamar Valley*, CAU
- Smith, J., 2006, *Bere Alston to Tavistock Railway – Archaeological Assessment*, HES (2006R006)
- Sherrell, F., 2007, *Bere Alston Railway Line, Devon: Results of mine shafts inspections. Letter Report 3006 (16/10/2007)*.

## **Project archive**

The HE project number is **2008105**. This report also amalgamates the Bere Alston Railway impact assessment project (2008069).

The project's documentary, photographic and drawn archive is housed at the offices of Historic Environment, Cornwall Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. Project file containing site records and notes, project correspondence and administration (2008105).
2. Black and white photographs archived under the following index numbers:  
GBP 2042/3-5; 2043/19 – 23; 2073/34 -36 (before and during works photos)  
GBP 2009/1-4 (after works photos)
3. Digital photographs stored in the directory: R:\HE Images\Sites\Devon\Bere Alston-Tavistock Railway WB
4. English Heritage/ADS OASIS online reference: cornwall2-108677

This report text is held in digital form as: G:\CAU\HE Projects\Sites\Devon\Bere Alston-Tav WB 2008105\Report\TVMHP Tavistock-Bere Alston Railway WB Report.doc

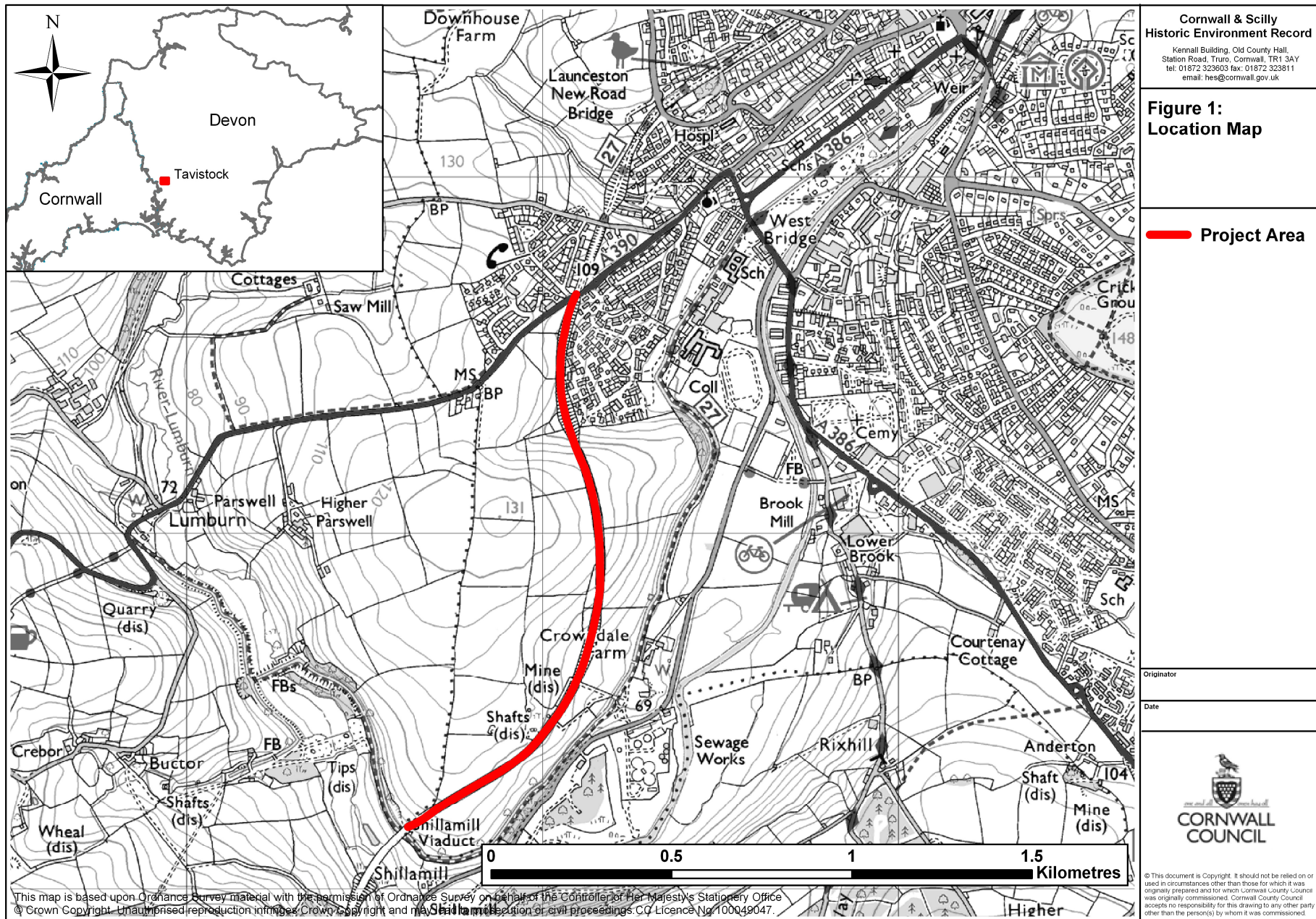


Figure 1 Project location plan



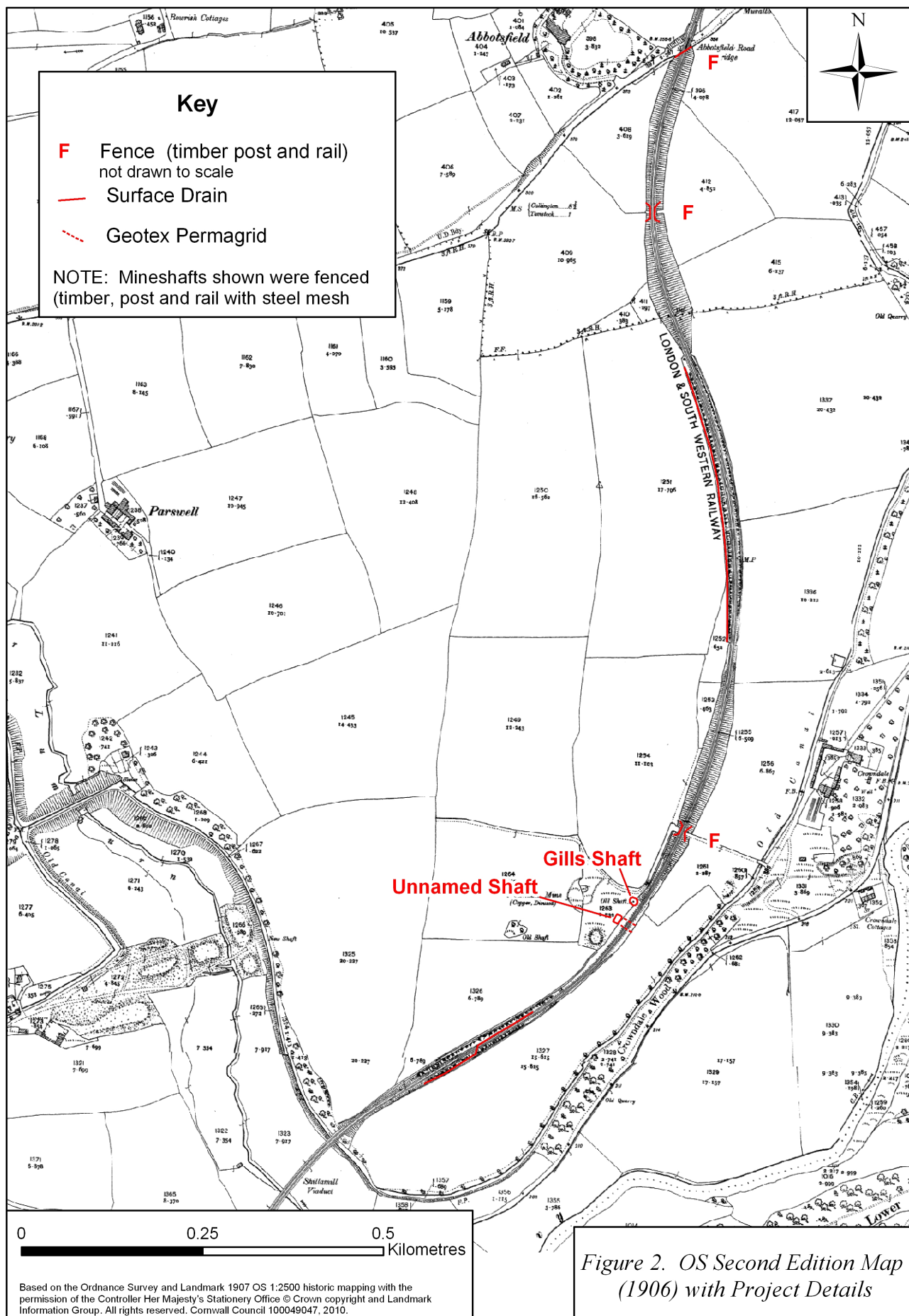


Fig 2 1906 OS map with site plan project details

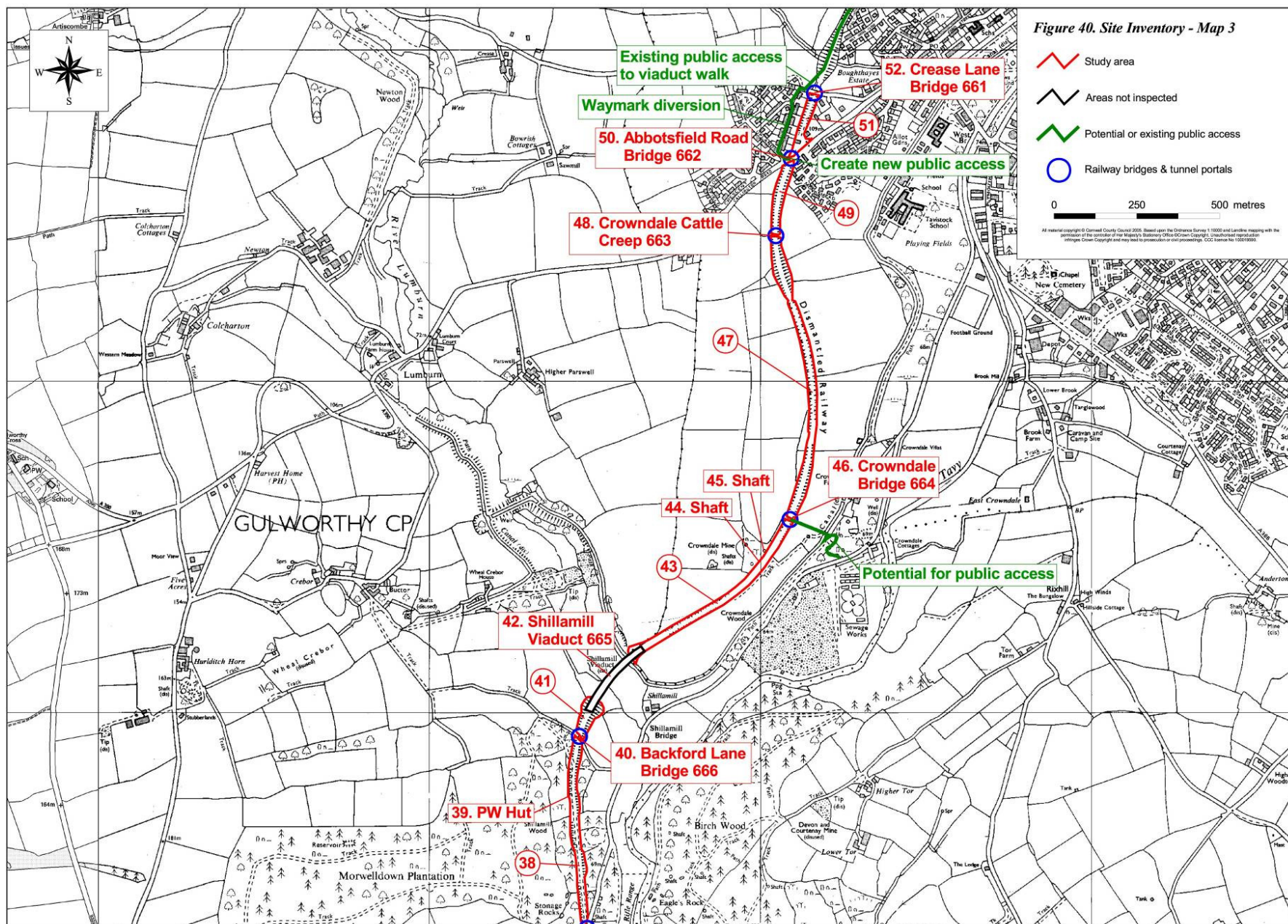
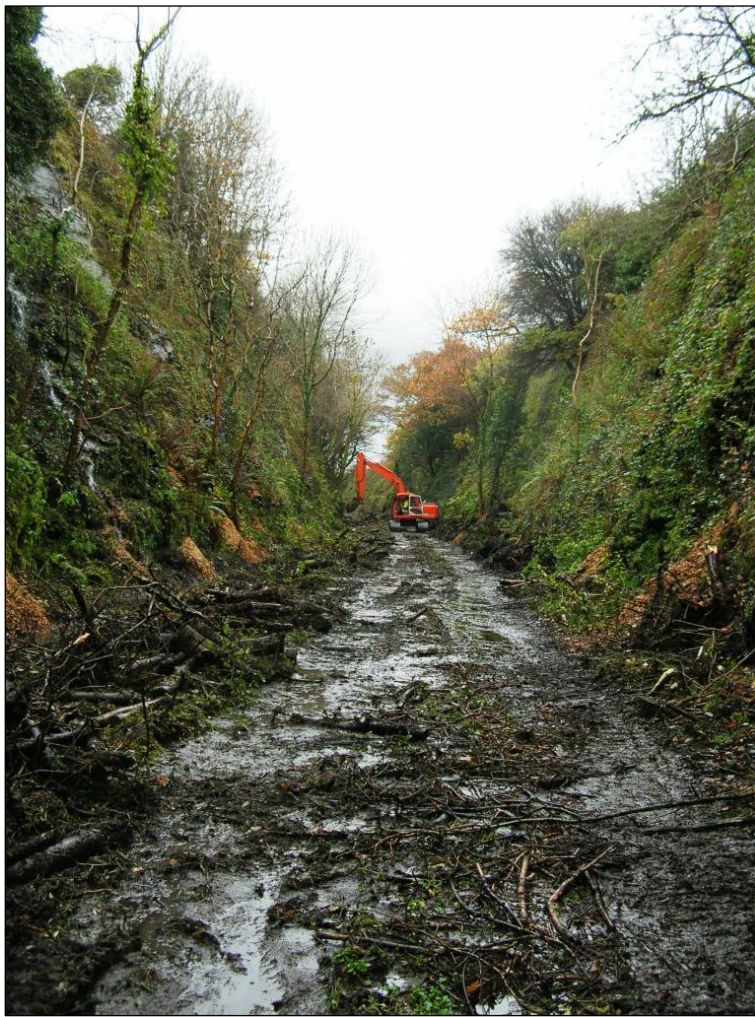


Figure 3 Tavistock to Bere Alston Assessment – Site inventory plan excerpt (Smith 2006)





*Figure 4 Tavistock to Bere Alston railway track during vegetation/tree clearance/drainage works (© CC HE 2008)*



*Figure 5 Railway track after clearance works and bridge parapet fencing (© CC HE 2011)*



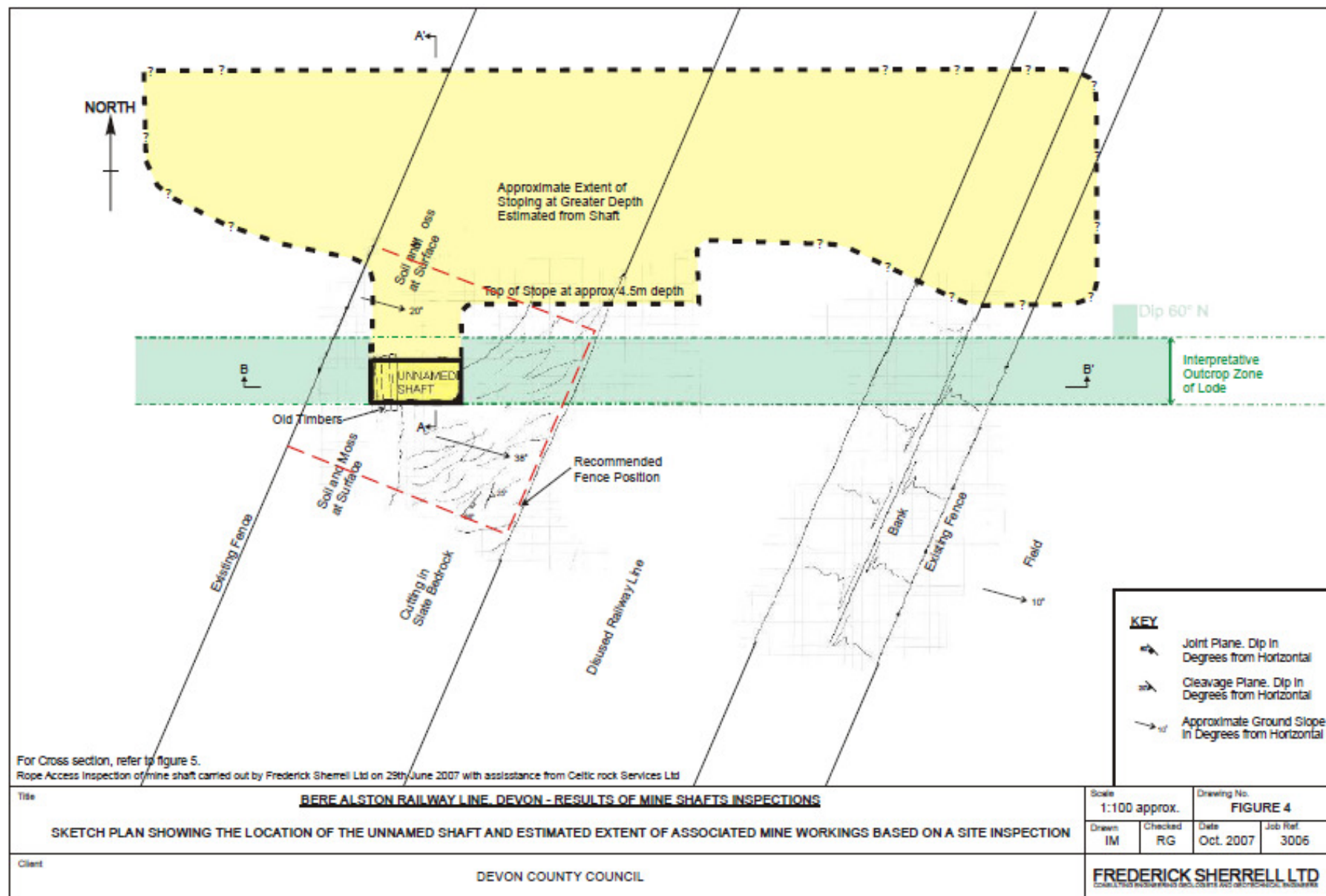


Figure 6 Sketch plan showing the location of Unnamed Shaft and estimated extent of related mine workings (© Sherrell 2007)

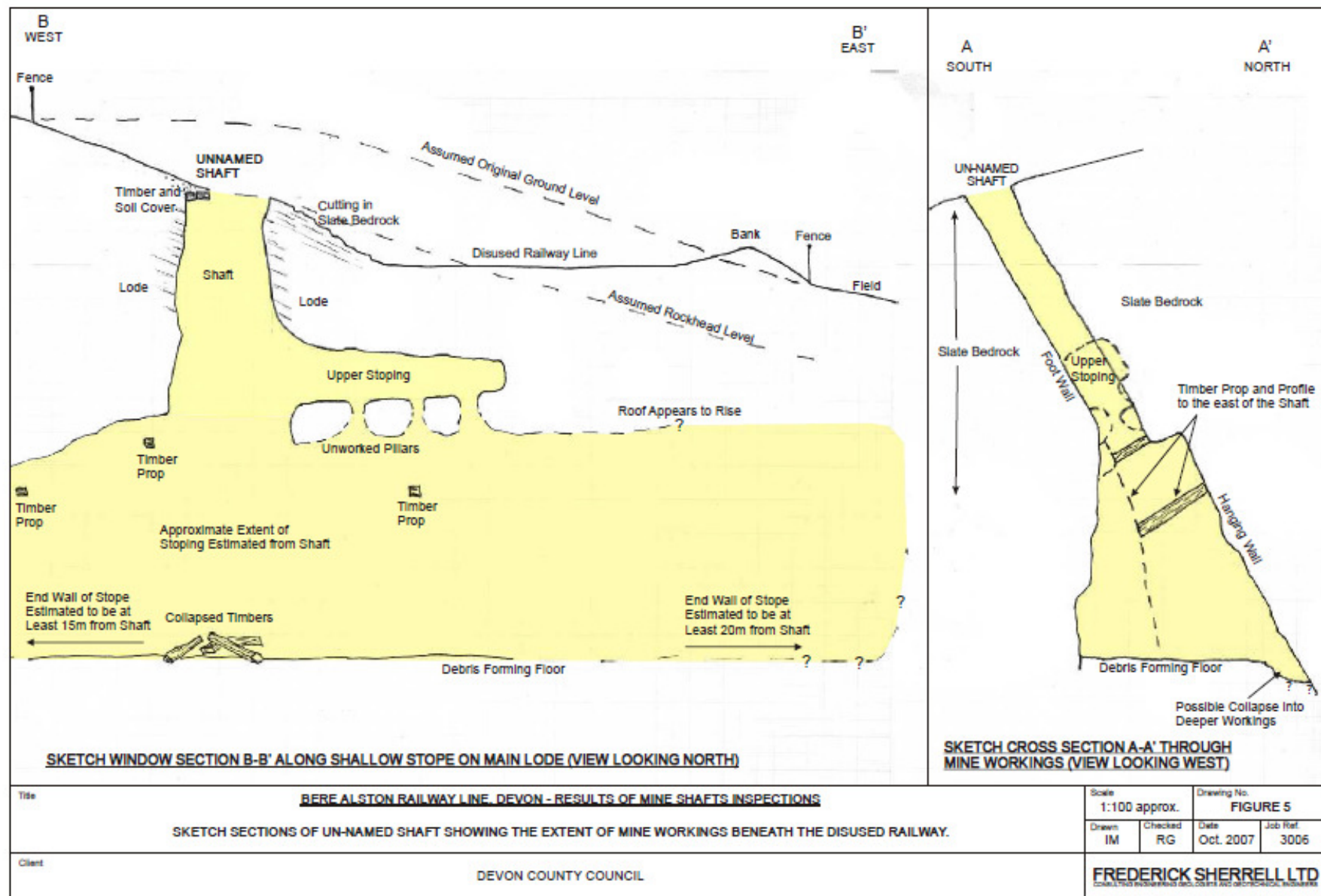


Figure 7 Sketch sections A-A and B-B of Unnamed Shaft and estimated extent of related mine workings (© Sherrell 2007)



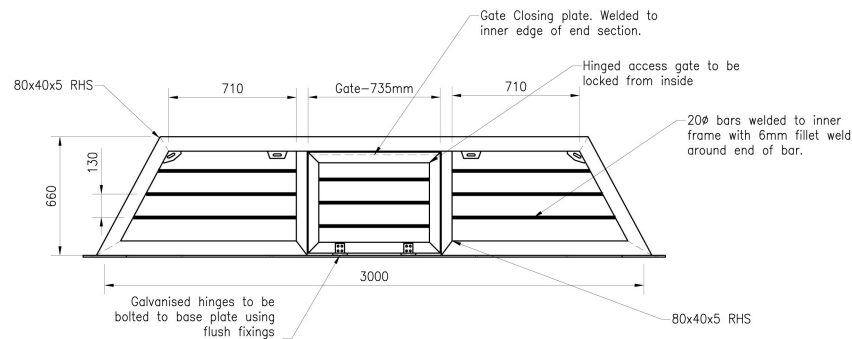


*Figure 8 View of Unnamed Shaft before grilling/fencing works (© CC HE 2008)*

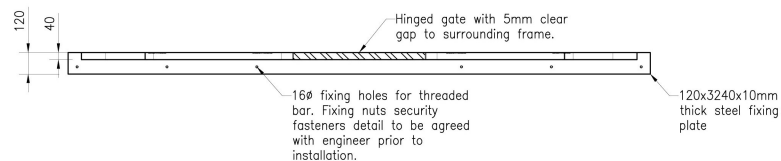


*Figure 9 View of Unnamed Shaft after grilling/fencing works (© RG 2009)*

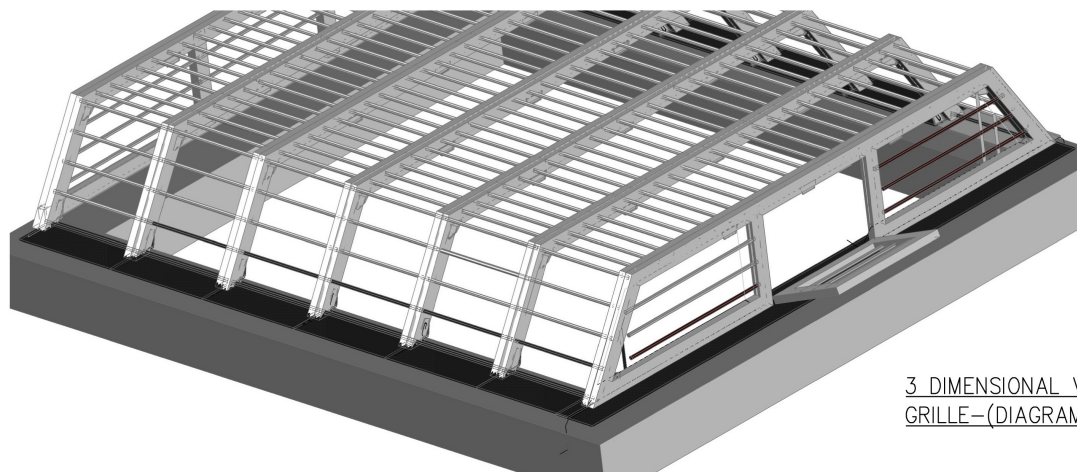




ELEVATION ON END FRAME(Track side)  
SCALE 1:25



PLAN ON END FRAME(Track side)  
SCALE 1:25



3 DIMENSIONAL VIEW OF  
GRILLE-(DIAGRAMMATIC ONLY)

NOTES CONTINUED		REVISIONS	
no.	details	No.	date details
8.	Finish to frame steelwork – <u>GALVANISING</u> Shop preparation: Grit blast clean to comply with N.S.S.S. 10.2.2 Preparation Grade; SA2½ Galvanising to EN 150 1461 1999, min coating thickness 140 microns.		
9.	All structural bolts (except cast in bolts) to be galvanised to BS 7371–6. Nuts to be tapped after galvanising.		
10.	All hollow section members to be sealed with continuously welded end plates. Vent holes to be provided for galvanising. Vent holes to be plugged after galvanising/before erection.		
	<u>GENERAL</u>		
11.	Bars to be plain round bars with a clear aperture of 110mm ± 5mm.		
		<b>NOTES</b>	
		no.	details
		1.	All dims in millimetres unless stated otherwise.
		2.	Frames to be bolted together using M10 bolts. Use anti vandal nuts for outer fixings and locking star head nuts for central frames for emergency egress.
		3.	All materials and workmanship will be in accordance with BS 5950, the specification and the current edition of the National Structural Steelwork Specification.
		4.	All details are to be approved by the Engineer prior to fabrication (allow 1 week for comments by Engineer).
		5.	Steelwork to be grade S275 unless stated otherwise. NOTE – All main frame structural rectangular hollow sections to be Grade S355.
		6.	All connections to be as detailed on drawings or if not shown then a minimum M12 bolt fixing is to be used.
		7.	All welds, unless noted otherwise, to be 6mm full profile fillet welds.

Do not scale from this drawing in either hard or electronic format. No responsibility is accepted where this drawing is used in circumstances other than that for which it was originally prepared and issued.					
Designed	BMN	Drawn	BMN	Reviewed	DP
checked	AS SHOWN	Date	21/11/08		

Devon

County Council

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JOB

NCN ROUTE 27  
BERE ALSTON RAILWAY LINE

DRAWING TITLE

MINESHAFT SECURITY FENCING  
MINESHAFT GRILLE

Dwg. No.

B.S.7.(1657)/05A

Figure 10 Specifications for the Unnamed Shaft surface grille (© DCC 2008)





*Figure 11 View of Gill's Shaft before fencing works (© CC HE 2008)*



*Figure 12 View of Gill's Shaft after fencing works (© RG 2009)*