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Borders Railway Project: Level 1 Standing Building Survey Sites 26, 52, 78 & 328

> Report No. 1694 (version 2)

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Borders Railway Project: Level 1 Standing Building Survey Sites 26, 52, 78 & 328

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1. INTRODUCTION

1.1 General

- 1.1.1 This report presents the results of a Level 1 standing building survey on four listed bridges that are to be subject to alterations as described in Schedule 9 of the Waverley Railway (Scotland) Act.
- 1.1.2 The methodology and structure of this report substantially follows that adopted for the bridges along the Airdrie to Bathgate Railway (Cressey 2009).

1.2 Background

- 1.2.1 A Cultural Heritage Management Plan (Haines *et al* 2009) has been produced that identifies the predicted impacts of the Borders Railway Project on the cultural heritage resource and identifies and commits to mitigation measures that will offset the predicted impacts. Those mitigation measures include the recording of the four listed bridges that form the subject of this report.
- 1.2.2 Schedule 9 of the Waverley Railway (Scotland) Act disapplies statutory controls in relation to listed buildings and buildings in conservation areas as these affect the works described in Schedule 9 of the Act. Schedule 9 states the limit of authorised demolition or alteration allowed on those listed buildings identified along the route of the railway. Schedule 9 of the Act applies in relation to any building along the route which has been listed after March 2003.
- 1.2.3 Each site recorded in the Cultural Heritage Management Plan has been assigned a number. Those numbers are retained as principal identifiers for the four bridges that form the subject of this report. In the Transport Scotland Asset Register and Schedule 9 of the Act, the bridges are identified by Overbridge (OB) and Underbridge (UB) numbers. In the National Monuments record of Scotland (NMRS) and the Statutory List, they are identified in yet further ways. A concordance between the various identifies can be found as part of Table 1 in Section 3, below.
- 1.2.4 Three of the bridges (**26**, **52** and **78**) were listed before March 2003 and are identified in Schedule 9 of the Act. The fourth (**328**) is not mentioned in Schedule 9, but, was listed after 2003; Schedule 9, therefore, applies to it.

1.3 Objective

1.3.1 The objective of the project was to carry out a Level 1 (English Heritage 2006) standing building survey of four listed bridges, using measured drawings and photographs produced by Scott Wilson Railways Ltd.

2. METHODS

2.1 General

- 2.1.1 CFA follows the Institute for Archaeologists' Code of Conduct, and Standards and Guidelines for Historic Building Survey as appropriate.
- 2.1.2 A Level 1 standing building survey was carried out, as defined by English Heritage (2006).

2.2 Desk-based Assessment and Field Visit

- 2.2.1 Desk-based assessment was confined to available on-line sources, including the National Monument Record (NMRS) and Historic Scotland's Information Supplementary to the Statutory List.
- 2.2.2 Measured drawings and photographs produced by Scott Wilson were used to inform the assessment and are reproduced here (Figs 2 to 5).
- 2.2.3 A reconnaissance visit was paid to the sites as part of the fieldwork for the Cultural Heritage Management Plan (Haines *et al* 2009).

3. SURVEY RESULTS

3.1 General

3.1.1 All four sites are recorded in the NMRS and in Historic Scotland's Information Supplementary to the Statutory List (Table 1). The bridge descriptions in the following paragraphs are based on those sources.

Site No	Site Name	NGR	Asset Register No	NMRS Record No	Listed Building No	Nature of proposed works
26	Glenesk Railway Viaduct	NT 32372 67136	UB12	NT36NW 171	Listed A (1445)	Structural repairs to the spandrels and wingwalls; provision of cantilevered walkway.
52	Eskbank South Bridge	NT 32367 66711	OB 14	NT36NW 215	Listed B (24473)	Re-pointing and masonry repairs.
78	Lothianbridge (Newbattle Viaduct)	NT 32695 64844	UB 18	NT36SW 41	Listed B (14544)	Re-pointing repairs and replacement of bricks.
328	Galafoot (Redbridge) Railway Viaduct	NT 51572 35251	UB 104	NT53NW 71.1	Listed B (50690)	Scour protection to pier bases; install ing concrete backing, fibre- reinforced concrete ring, new waterproofing system and backfill to bridge deck

Table 1: Concordance of identifiers and description of proposed works

3.2 Site 26: Glenesk Railway Bridge (Fig 2)

- 3.2.1 The Glenesk Railway Bridge spans the River North Esk and the A7 trunkroad at Dalkeith. The bridge served the Edinburgh and Hawick Railway, which was originally promoted as an independent railway. However, the right to build was bought by the North British Railway Company before construction on the line began.
- 3.2.2 The bridge is reputed by some authorities (eg Hume 1976) to have been opened in 1849, having been constructed on behalf of the North British Railway Company in 1847 by the engineer John Millar (1805-1883) to replace an earlier timber bridge (Paxton 1993). Paxton (1993) claims that the stone structure beneath deck level is nearly two decades earlier, and that no earlier timber bridge existed at this location. The elegant, late-Georgian styling of the bridge, which incorporates fine ashlar masonry, suggests to Paxton (1993) that it was designed by the engineer James Jardine (1776-1858), a close associate of Telford, and erected sometime between 1829 and 1831. If this is so, in terms of historical engineering, it should be considered the finest pre-Victorian railway bridge in Scotland (ibid).
- 3.2.3 The viaduct has a single segmented arch with 64 voussoirs. It has extensive curved wing-walls, tapering pilasters and archivolts.
- 3.2.4 The bridge is shown on the 1854 and 1895 Ordnance Survey maps. The online NMRS entry includes seven digital images of the viaduct.

3.3 Site 52: Eskbank South Bridge (Fig 3)

- 3.3.1 This bridge over the railway carried a minor road from Westfield and South Melville to the west. The bridge is listed as part of the larger former Eskbank and Dalkeith Station, foot, road bridge and platforms.
- 3.3.2 The bridge has a single span with a segmental arch. The structure is constructed of droved ashlar with a brick-arch ring and intrados. The arch is surmounted by an ashlar string-course and a saddleback coped parapet resting on four courses of ashlar.
- 3.3.3 The bridge is shown on the 1854 and 1895 Ordnance Survey maps.

3.4 Site 78: Lothianbridge (Newbattle Viaduct) (Fig 4)

- 3.4.1 The viaduct carried the Edinburgh to Carlisle 'Waverley Route' of the former North British Railway over the River South Esk and two public roads; the river here forms the boundary between the parishes of Cockpen, to the northwest and Newbattle to the south-east.
- 3.4.2 Accredited to the engineer John Millar and opened in 1849, the railway viaduct consists of 23 semi-circular arches and is constructed of coursed rock-faced sandstone with brick voussoirs and soffits. The bridge also contains ashlar imposts with hood moulding over the arches. The parapet is tooled

sandstone with ashlar copings and metal railings. Reinforcement using iron straps is present along the soffits and piers. The pier bases have projecting stonework and blind recessed arches infilled with coursed tooled sandstone. The last arch is skewed over a road at the south-east end which has stone voussoirs and flanking buttresses built of rock-faces stone. Two arches resting on a pier with deep curved ashlar cutwaters span the River South Esk.

- 3.4.3 The 1852 Ordnance Survey Name Book mentions that the viaduct was built at an expense of £21,000. There was considerable debate over the financing of this extensive viaduct, a structure that was necessary in order to bridge the River South Esk and access the Lothian and Dundass collieries. The Marquis of Lothian was reluctant to spend the money and it was considered unsuitable for Dundas, who owned the Arniston estate, to pay (Worling 1991). It was eventually built after a delay of some four years at the expense of the Marquis of Lothian (Thomas 1971).
- 3.4.4 The viaduct is shown on the 1854 and 1895 Ordnance Survey maps. The online NMRS entry includes 40 digital images of the viaduct.

3.5 Site 328: Galafoot (Redbridge) Railway Viaduct (Fig 5)

- 3.5.1 Situated to the east of Galashiels, Scottish Borders, this Grade B Listed viaduct was constructed in c.1849 to cross the River Tweed for the North British Railway and formed the first part of the line from Edinburgh to Carlisle. Also known as the Tweed or Redbridge Viaduct, it is constructed of squared sandstone rubble with ashlar voussoirs on its segmental arches. The piers comprise rusticated sandstone with boat-shaped cutwaters on the upstream and down stream sides. The parapet is constructed of sandstone with ashlar copings.
- 3.5.2 The viaduct is approached along embankments on both sides of the river; the 1972 Ordnance Survey map depicts a massive stone abutment to the west of the stream, while the viaduct also crosses a track to the east of the river.
- 3.5.3 The viaduct is shown on the 1856 and 1875 Ordnance Survey maps. The online NMRS entry includes 17 digital images of the viaduct.

4. **DISCUSSION**

- 4.1 The Glenesk, Lothianbridge and Galafoot viaducts were all designed and built to carry the former Waverly Railway. The smaller overbridge at Eskbank South Station carries the Westfield to South Mellville road over the Waverley Railway. The entire line closed to regular passenger traffic on 6 January 1969 and much of the route in Midlothian currently forms part of a cycle track.
- 4.2 All four bridges are to be subjected to various structural repairs (listed in Table 1), as part of the work required to bring the line back into use, all of which are covered by Schedule 9 of the Act. The Level 1 survey that forms the

subject of this report is considered sufficient mitigation. No further work is recommended.

- 4.3 The digital photographs and technical drawings supplied by the client will form part of the larger project archive and will be deposited with the NMRS in due course.
- 4.4 A summary of the results of this particular section of the project will be submitted to *Discovery and Excavation in Scotland 2009*.

5. **REFERENCES**

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Level 1 Standing Building Survey









Fig 2d - View from North West



Fig 2e - View from South West

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Fig 3a - South elevation



Fig 3b - South-west wing wall

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Key:	Fig. No:	3	Revision: A	Client: Transport Scotland		CFA The	ARCHAEOLOGY LTD Old Engine House
	Title:	Site 52:	Eskbank Sc		Eskr Mus East t: 01 f: 01	Eskmills Park Musselburgh East Lothian, EH21 7PQ t: 0131 273 4380 f: 0131 273 4381	
	Project: Borders Railway Project				ARCHAEOLOGY LTD e: info@cfa-archaeology.co.uk w: www.cfa-archaeology.co.uk		
Scale:		Level 1	Standing Bu	ilding Survey	Drawn by: LW	Page No:	Report No: 1694







Fig 5b - View from East-south-east

Fig 5c - View from East-north-east

Fig 5d - View from South-east

