

# **Millfield Road Bridge - Inspection 8 December 2001**

## **1 Introduction**

This report describes the condition of the bridge, following inspection.

The scope of the survey was to inspect the visible and accessible parts of the bridge, and did not include for the removal of finishes, exposure of foundations or structural testing of materials.

The inspection of Mill field Bridge was carried out on 8th December 2001.

## **2 Description of the Bridge**

The bridge carries the single track private Millfield Road over Ridingmill Burn in Riding Mill, at O.S. grid reference 4016,5613.

The bridge is a single span simply supported steel universal beam with concrete deck, on mass concrete abutments.

The clear width between parapets is 4850mm and is fully surfaced with no defined verges or footway.

## **3 Access for Inspection**

It is possible to park on the road to the west of the bridge, where the carriageway is sufficiently wide to allow vehicles to pass.

Access to the underside of the bridge can be gained on the northwest side of the bridge, by climbing down the stream embankment.

The water depth was approximately 700mm on 8th December 2001, and the streambed is very rocky.

## **4 Condition Report**

### **4.1 General**

The bridge structure was in good condition with some minor defects to the steel beams, parapets and wing wall

There were no obvious signs of distress or instability.

### **4.2 Foundations**

The inspection of the substructure revealed no major defects to the abutments to suggest that the foundations had suffered any deterioration.

### **4.3 Substructure**

#### **4.3.1 Abutments**

The abutments were noted to be in good condition overall, although having a poor construction finish. The exposed face of the abutments is extremely honeycombed with the aggregate exposed, and visual signs of poor compaction. However there were no obvious signs of overstress due to possible lower compressive strength the concrete may have, and deterioration from freeze thaw due to the poor surface finish appeared to be minimal.

#### **4.4 Deck**

The deck was noted as being in good condition generally, however a few minor defects were noted.

The steel edge beams were noted as corroded, although there was little exposed corroding steel evident, suggesting they have since been treated and painted, thus limiting the future corrosion rate.

Measurements were taken of the loss of section to these beams, which are as follows:

	North Edge Beam	South Edge Beam
<b>Flange Average</b>	1.5mm	1.0mm
<b>Flange Maximum</b>	3.6mm	2.1mm
<b>Web Average</b>	0.8mm	0.5mm
<b>Web Maximum</b>	2.5mm	1.6mm

The remaining internal steel beams were all noted as being in good condition with no loss of section evident. The protective paint system to the steel beams is in good condition.

The reinforced concrete deck is in good condition with no spalling concrete or corroding reinforcement evident. An area of approximately 3m<sup>2</sup> to the deck soffit between beams 2 and 3 from the south end was noted as being wet, although the rest of the soffit appeared to be dry. Heavy rainfall had recently fallen, suggesting that there is a waterproofing membrane present, and it had failed in a localised area. This directly corresponded to a recently resurfaced area of carriageway above, indicating that the waterproofing membrane may have been damaged during these works. Photograph 5

#### **4.5 Wingwalls**

The wingwalls are constructed of mass concrete and were noted to be in good condition, with the exception of the north west wall where it was noted that erosion had taken place on the leading edge due to river forces. The void to the rear of the wing wall measured 0.4m<sup>3</sup> approximately.

#### **4.6 Parapets**

The parapets are constructed of steel angle uprights, steel "I" section top and bottom rails and steel lattice infill. The parapets were noted to be fair condition, with areas of corrosion evident together with loose and flaking paint. The vertical uprights have suffered some loss of section towards their base and the some connection bolts to the edge beams are heavily corroded.