



Our Ref: BTB/ SMW 11023

Date: 26th April 2011

Broomhaugh & Riding Parish Council
c/o Sandyford,
Healey
Riding Mill
Northumberland
NE44 6BA

FAO Monica Anderton, Clerk to the Council

Dear Sirs,

MILLFIELD ROAD BRIDGE

We are pleased to enclose for your attention our inspection report on the Millfield Road bridge. In your letter of 21st March 2011 you have asked a number of supplementary questions. Our opinions on these are as follows:

- a) *Is the bridge currently adequate for purpose.* We consider that the bridge is, on balance, currently adequate for purpose. The restriction in the width installed by the County Council has the practical effect of directing vehicles on the bridge to the centre of the width, thus running over the central four bridge beams and avoiding loading onto the edge beams which are in poor condition. We have carried out a simplified analysis on the bridge structure. This suggests that the central beams in good condition are likely to be suitable for a 7.5 tonne weight limit, possibly more. Due to the corrosion, our checks suggest that the edge beams need to be limited to no more than 3 tonnes. There is however little to physically prevent vehicles accidentally straying onto the edge beams or towards the parapets and this is a matter of concern. There is in practice little if any means of allowing 7.5 tonne vehicles to cross the bridge whilst preventing 25 tonne vehicles from doing so similarly. This may be part of the background to the current system of bollards. If it were possible to design and implement some permanent vehicle barriers to prevent vehicles straying towards the edge then it is likely that, subject to a more detailed analysis, the current weight restriction on the bridge could be raised. It is unlikely however that the bridge could ever be assessed as suitable for carrying loads from unrestricted heavy goods vehicles. Some further, more detailed design and analysis would be required in order to provide a more permanent barrier restraint and to confirm the suitability of a higher weight limit.
- b) *If it is fit for purpose, how long might it last.* If nothing is done to the bridge then it is likely that the edge beams will become inadequate within the next 3-5 years. In our report we have suggested the possibility of cutting out the edge beams and replacing parapets, leaving a narrow single lane bridge. Taking such action, along with the carrying out of regular maintenance should allow a further life of, say, 25 years perhaps more.

- c) *What Remedial action would prolong its' life.* The remedial works described in the 'recommendations' section of our report will help to prolong the life of the bridge, as would permanent vehicle barriers as noted above. Given the degree of corrosion currently apparent to the edge beams it would be difficult to assess a figure of how long the life could be extended with a one-off maintenance, or with regular maintenance but clearly the more regular maintenance is carried out the longer the life of the bridge will extend..
- d) *Can you provide a 'ball-park' figure for replacing it to either the current weight limit or to a 40 tonne adoptable weight limit.* We have spoken to a local civil engineering contractor about this. We estimate that you should allow a budget of £145,000 for a replacement bridge. If you were to commission a new bridge you would want this to be unrestricted; we cannot conceive why you would want to provide a new bridge with a weight limit.
- e) *Can BT Bell provide us with a detailed spec for the immediate repairs needed so we can use this as a tender document?* We will be pleased to draw up a specification for immediate repairs. I shall work out a fee for this schedule and write separately regarding this.
- f) *Can they suggest a schedule of regular maintenance that we can adopt to minimize further deterioration of the bridge?* We can include this as a separate recommendation, along with the repairs specification.
- g) *Can they expand on their suggestion of narrowing the entire bridge to 3 m by removing the outer beams? How much would this cost? Would the new outer beams then corrode in the same way as the existing outer beams?* We would be pleased to look at this in more detail if this option would be of interest to the parish council as an alternative to the more obvious solution of a replacement bridge. It is probably inevitable that the newly exposed outer beams would then corrode in the same way as the current outer beams. However it may be possible to look at the bridge parapets in more detail and change these to include an edge kerb. This would reduce direct run off from the road surface onto the bridge beams but would require the provision of some surface water drainage if the free run-off is to be restricted.
- h) *The last paragraph of the covering letter says "we cannot conceive why you would want to provide a new bridge with a weight limit". The answer is that we'd want to consider this option IF it was considerably cheaper. If it's not, we can forget it. I suspect that we wouldn't save much by going for a new 3 ton bridge, but I'd like BT Bell to address this point because we may get questions on it.* We believe that the overall costs of a new 3 tonne or 7.5 tonne road bridge would be very similar to those for a bridge with a un-restricted weight limit; it would not be considerably cheaper. Given the signage etc required for a weight limit, such a bridge may prove to be more expensive.

We trust that this answers your queries.

Yours faithfully

Stephen M Ward

S M Ward
BT Bell