



<b>Client</b>	Cleveland Bridge for Costain for Highways England
<b>Project Description</b>	<p>The 1975 prestressed concrete viaduct carrying the A14 over the East Coast Main Line and a minor road has suffered from weak half joints in the main cantilever/suspended span for a number of years. In 2003 temporary strengthening of the joints was installed in the form of rows of underslung steel box beams with design life of 12 years. A more long term solution was pursued in 2013 due to changes in investment plans and the steel box beams were replaced by deeper, stiffer and heavier I beams. Installation of the new beams to the low headroom soffit of the concrete structure was not practical with cranes and novel techniques using a combination of heavy duty trailers, scissors lifts and fork lift trucks was used.</p>
<b>Cass Hayward Role(s)</b>	<ul style="list-style-type: none"><li>• Three dimensional modelling of strengthening steelwork for the 2002 contract and preparation of drawings for fabrication</li><li>• Temporary works design for the lifting schemes for the 2013 steelwork installation</li></ul>
<b>Project Statistics</b>	<ul style="list-style-type: none"><li>• Completed August 2013</li><li>• Value £11m</li><li>• Beams increased in depth from 750mm to 1775mm</li><li>• Lifting weights of beam assemblies 21 tonnes</li></ul>
<b>Special Features</b>	<ul style="list-style-type: none"><li>• Internal anchoring steelwork in voids of concrete box girders detailed to accommodate significant variations in site dimensions and confined space working</li><li>• Lifting over railway possession</li><li>• Use of fork lift trucks</li><li>• Use of SPMT's with mounted with scissors lifts</li></ul>