

## Embankment Stabilisation WILLENHALL, COVENTRY

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*Client*  
*Stroy Rail*

*Solution*  
CFA Piles

*Plant Used*  
*Soilmec 208*

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Piling works were required to improve the stability of an existing 10m high Network Rail Embankment.

The embankment at Willenhall had shown evidence of a deep seated rotational failure. Using good asset management practice, a feasibility scheme was developed to significantly reduce the risk of future movement. The chosen option of piling plus rock-filled shear key was designed to improve the slope stability of the embankment.

### **Result**

The tough Bromsgrove sandstone meant that a customised auger for the piling rig was required and Van Elle's expert fabricators built a 450mm diameter, 1.5m auger with cutting teeth and rock cutters in house. This ensured that the necessary penetration of the sandstone was achieved by the rig on site.

As well as the demanding ground conditions, we had to work within the usual clearances from railway traffic and overhead line electrification. The piling design and installation also had to take into account that only one side of the embankment was accessible and the Soilmec 208 piling rig had to work from a 7.5m wide, 5m high piling platform running adjacent to the track for some 220m.

Despite the conditions and the live track, the job was managed within the schedule and came in on budget.

### **Technical information**

220No. 450 mm diameter CFA (Continuous Flight Auger) piles drilled to depths of 10m - 12m. CFA piles were designed for this project as bored piles would have been a much slower operation and driven piles would not penetrate the Bromsgrove Sandstone. The piles were reinforced using standard longitudinal reinforcement with helical links.

