

CASE STUDY

RESTRICTED ACCESS PILING, MEDGE HALL

Project: Ground improvement to main rail link between Doncaster & Scunthorpe

Location: Medge Hall, Nr. Scunthorpe

Client: Carillion

Project Overview

Network Rail has invested £10M at Medge Hall, near Doncaster to improve the ground to support the railway and remove a speed restriction following problems with drainage in soft peat that has led to track instability.

Work began at the beginning of June and possession was scheduled until the 27th July 2009. The improvement works required an 11 week full closure of the line between Doncaster and Scunthorpe, though operating restrictions meant that there were no



trains between Doncaster and Cleethorpes for the duration. Further work, worth an additional £10M was also completed along the line during this closure.

Due to the difficult site access, working constraints and the design proposed by Van Elle included in Carillion's bid, 2 Vermeer and 3 Mobi Drop restricted access piling rigs were used. For the main works 1250 No. bottom driven, steel cased piles were installed along a 1km stretch of the rail track next to the canal. The piling began on 22nd June with a proposed completion date of 27th July and due to the nature of these works and the requirement for them to be completed on time, Van Elle assigned 7 gangs to work in unison. Our geotechnical services team was also on site for the duration and carried out 10 No. static load tests and 80 No. dynamic load tests, all on working piles. All piles passed these tests and the maximum 5mm tolerance allowed by Network Rail.

Result

Understanding the rail-specific issues involved on this project allowed us to utilise the correct choice of rig for the job and maximise the effectiveness and efficiency of our design helping Carillion to secure the project and ensuring that both they and Network Rail were completely satisfied with the service we provided. Through careful planning Van Elle's project team were able to meet the proposed time frame allowed for the piling and testing moving off site on the 27th July. The project value to Van Elle was £991k.

Technical information

- 1) 1250 No. 273x5mm bottom driven steel piles installed by 2 No. Vermeer and 3 No. Mobi Drop rigs.
- 2) 40 No. 300Ø CFA anchor piles installed by a Soiltec S45 for static load tests.
- 3) 10 No. static load tests (5 No. prelim. piles tested to 2.5x working load and 5 No. working piles tested to 1.5x working load) and 80 No. dynamic load tests, all on working piles.