



VolkerFitzpatrick



Foundations for an underpass



October 2017



8 weeks

As part of the WAML (West Anglia Mainline) upgrade works, Volker Fitzpatrick are widening the existing two-line track between Tottenham Hale and Stratford. Universal Piling were approached to install foundations either side of an existing pedestrian underpass, which would allow for an additional track to pass overhead, and also prevent destabilisation of the London Overground track running overhead.

Our contract was to design and construct some 34nr piles at 600mm diameter to support this new track slab, requiring pile depths of 26m. Works were adjacent to a live railway, and in 4.7m of limited headroom where beneath the London Overground, and required 7m of temporary 660mm diameter casing to set into the underlying clays.

In order to carry the peak 1,150kN loading, piles were required to toe 1m into the underlying granular Lameth Group strata, which created a few issues with water ingress at depth, so all piles were tremmie grouted with a full length tremmie pipe. Where headroom allowed, piles were drilled and cased off with a 9m mast Klemm 709-2 and then augered to depth with a Tescar CF3 for speed. Where headroom was limited, we utilised our short masted Klemm 709 over the full depth of the piles. 10nr of the piles were too close to the railway to be undertaken during ALO working, so were installed in weekend possessions of the track.

As pile cut-off level was close to the piling platform level, a complex bobbed-bar reinforcement cage arrangement was required to transfer the load, and these were achieved using couplers and L-bars installed after completion of the piling operations.



Universal Group

Unit 4, Nunn Close,
Huthwaite, Sutton In Ashfield,
Nottinghamshire, NG17 2HW

Reg03728536, VAT990830888