

A556 Knutsford to Bowden Pipeline Protection Slab

Client:
WB Civil & Mechanical Ltd

Reinforced Concrete Protection Slab over Live Fuel Infrastructure

Project Overview & Scope

Gill Civil delivered a reinforced concrete fuel pipe protection slab as part of the A556 works, developing a cost-effective alternative to diverting live fuel pipelines crossing the scheme. The solution involved construction of a heavily reinforced slab directly above the pipeline corridor, reducing design complexity and programme duration while maintaining full infrastructure protection. Works included installation of 150mm concrete blinding, proprietary formwork, and a 900mm thick RC30/37 reinforced concrete slab using pumped concrete placement, alongside induction saw cutting and formation of expansion joints.

Challenges and Execution

Works were undertaken above live fuel pipelines, requiring strict controls while constructing a heavily reinforced 900mm-deep slab. Restricted access and dense reinforcement required carefully planned pumped concrete placement, controlled layering, and systematic vibration to ensure full compaction. Continuous pours eliminated cold joints, supported by coordinated batching and pump delivery, while proprietary formwork maintained stability under high concrete pressure. Enhanced curing and thermal controls were also implemented during hot weather to mitigate thermal cracking.

Benefits and Outcomes

The protection slab solution provided a cost-effective alternative to pipeline diversion, reducing design complexity and programme duration while maintaining full protection of critical fuel infrastructure. Successful delivery of the reinforced slab ensured structural integrity, durability, and consistent quality, with no service disruption or defects, demonstrating safe and efficient delivery within a constrained environment.

