SUPPORTING BRIDGE STRENGTHENING AT LOUGHBOROUGH

PILING

GROUND IMPROVEMENT

HOUSE FOUNDATIONS

MINI-PILING

UNDERPINNING

CONCRETE PRODUCTS

PROJECT

Roger Bullivant Limited (RBL) installed a series of bottom driven cast in situ piles to support temporary platforms from which a road bridge over a railway at Loughborough was strengthened. Further piles had to be installed by RBL to support the new safety barriers on approaches to the bridge, to prevent stray vehicles from crashing onto the railway lines.

REQUIREMENT

Road bridges around the country are being strengthened to accommodate 40t lorries and many of these bridges cross busy railway lines. Work to upgrade a bridge crossing the Midland Mainline at Loughborough had to be carried out largely from two temporary access platforms – founded on piles – to significantly reduce periods of track possession.

Working from temporary platforms on either side of the bridge would mean that only one major track possession would be needed to position part of the bridge's new deck. The main contractor's scope of work also involved constructing cast in situ parapets and the building of new safety barriers.

SOLUTION

RBL installed 14 bottom driven cast in situ piles to support the temporary access platforms. Each 220mm diameter pile varied in length between five and nine metres and was cased through made ground and terrace gravels and founded in mudstone. Reinforcement was provided with high strength tubular steel and traditional rebar to cater for the lateral forces placed on the temporary access platforms from wind loading.

RBL also installed a series of 450mm diameter hollow stem grout injected piles, to depths varying between 6.5 and 11m into the bridge approach embankments, to support the new safety barriers. Piles installed closest to the bridge abutments were shortest in length but were heavily reinforced and the capping beams were tied together below the carriageway with Macalloy bars.

These piles were designed to maximise the load capacity of the safety barriers to enable it to restrain the huge overturning forces that would be created if the barrier were hit by a 40t vehicle.

ON SITE FACTS

MAIN CONTRACTOR	:	*Galliford Try*
FOUNDATION ENGINEER	:	*Roger Bullivant Limited*
PILE DIAMETER	:	*220mm*
PILE DEPTH	:	*Between five and nine metres*
REINFORCEMENT	:	*High strength tubular steel and traditional rebar*

Roger Bullivant Limited. *Walton Road Drakelow Burton-upon-Trent Staffordshire DE15 9UA.*
T: *01283 511115* **F:** *01283 512233* **E:** *marketing@roger-bullivant.co.uk* **W:** *www.roger-bullivant.co.uk*