

NETWORK RAIL PIPEJACK—THREE BRIDGES



**Pipejacking Case Study from
Perco Engineering Services Ltd.**



Scope: 1200mm Pipejack, Shafts & install ducts - **Project:** UTX Three Bridges - **Sub-Contractor:** Perco ESL

Perco ESL were approached by the Client/Consulting Engineers to undertake a substantial Under Track Crossing (UTX) at Three Bridges. The UTX at the railway corridor at Three Bridges runs north south and carries the Victoria to Brighton lines.

After viewing the requirements of the client and site constraints, Perco were able to offer 2 options of installation; Guided Augerboring or a 1200mm Pipe jack.

Upon working with the client, Augerboring was rejected as previous pipe augering had encountered buried obstructions and the pipe jacking method had a greater ability to cope with obstructions and installing extra ducts within the 1200mm pipe.

Perco commenced works on the

1200mm pipejack which ran under the main up and down lines at Three Bridges and two sidings lines. Monitoring of the tracks was carried out by TPS, with automatic readings every three hours on a system of 228 points, monitoring vertical, horizontal and twist on each track, with targeted warning at various set parameters.

Due to site restriction and existing services/utilities in the ground, Perco could not excavate a 3m diameter reception shaft to allow recovery of the steel shield, as due to the restrictions, the largest shaft/chamber that could be installed was 1800mm diameter.

With this in mind, Perco opted to lose the steel shield and continue tunnelling past the proposed 1800mm chamber and bury the 1200mm steel shield into

the ground and grout in.

One 1800mm access chamber was installed to a depth of 4mtrs & was constructed by bolted ring technique, this was dropped down onto the installed 1200mm pipe jack pipe to allow access for the 12 service ducts to be installed.

12 x 150mm ducts were installed, into holding frames which were bespoke manufactured by Perco for this scheme.

The client said "Throughout the operations, Perco proved themselves experienced and capable of overcoming any problems with tenacity & with the Client's targeted date in their minds in adaptation of the programme".

For more information please contact 0115 9335000.