Suttle Projects

Project Profile No 18/06

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HAMBLE EMBANKMENT

Client: **Osborne (for Network Rail)**

Value: **£288,000**

Duration: **9 weeks**

Project Detail

The project was to stabilise the rail embankment at Hamble, using a combination of kingpost wall construction and grouted anchor soil nailing.

Suttle Projects were contracted to carry out some critical parts of these works during a 52-hour rail possession, commencing with the installation of the kingpost wall. The pile locations were set out and CAT scanned by the engineer, and the 5.0m long galvanised H-Pile steels were lifted and driven down at 1.5m centres with a RRV 22T excavator with Movax attachment.

Once the steels were in place, the bays between the king posts were excavated to the desired level ready for the concrete panels to be installed. Concrete panels were slid in between the steel sections, with the bottom row of the concrete panels embedded. Timber packers were placed between the concrete panel and the flange of the steel to hold the panel and keep it flush with the external face of the steel.

Having stabilised the upper part of the embankment, and established the kingpost locations, soil nailing could be undertaken to the lower part of the embankment. A setting-out engineer marked out positions for the soil nail installation and an excavator, equipped with a drilling mast and safety cage, was tracked into position. Grout hoses were connected to the drill head and grout was batched and pumped, strictly regulating the flow. The soil nails were installed in sequence, working from the toe to the crest where practical, to the design of 10m. Then a structural mesh and suitable textile was placed on the slope, and secured, utilising fall arrest systems.

After the completion of the kingpost wall and soil nails, class 1A granular was placed and levelled in 350mm layers and compacted sufficiently with a remote-controlled compactor plate, operated from a safe location on site. A 100mm thick layer of Type 1 was placed on top of the Class 1A fill, to form safe access to that area above the newly stabilised embankment.

Once the kingpost wall and all the earthworks were complete, a permanent galvanised steel handrail was installed for the length of the new kingpost wall.


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