

CASE STUDY



Project: Civil Engineering Works
Location: Headstone Lane
Client: Network Rail
Value: £400k



Project Introduction

Coleman Rail successfully delivered a fully project managed railway civil engineering package of works including a 6-line UTX at Headstone Lane, Harrow, as part of the London Overground Capacity Project. Coleman Rail's scope as responsible contractor, covered the provision and installation of all necessary temporary sheet piling in advance of the permanent installation. The subsequent construction of permanent works included the use of a thrust boring auger, removal of spoil as work proceeded and careful management of plant and materials, both in and out of the work site.

The works were subject to ALO whilst working within the Reception Pit located in the cess of the down slow line, whereby the excavator was fitted with a height and slew restrictor. Removal of the temporary sheet walings and piles in this area were also subject to track possession.

Works were successfully completed on behalf of the client in accordance with the designated programme, both without incident and accident.

Project Deliverables

Construction of a UTX at Headstone Lane beneath 6 lines. The works covered the construction of the temporary works for the thrust and reception

pit and also the construction of the permanent chambers. Temporary works support included interlocking sheet steel piles driven by EMV, the excavation of pits, concrete works, chamber construction, removal of spoil with a 6 tonne dumper and moving materials and equipment to and from site using a 14 tonne excavator (reception pit side) and a 24/T excavator (thrust pit side). The sequence of deliverables was as follows:

- Installation of the temporary sheet and frame works to the reception pit with EMV under a track possession
- Excavation of the reception pit and construction of a concrete pit floor during daylight hours under live railway traffic conditions with ALO management in place
- Installation of the temporary works to the launch pit with EMV during daylight hours in a high street environment
- Excavation of the launch pit and installation of a concrete floor using a 24/t excavator during daylight hours under live railway traffic conditions
- Installation of thrust block wall formwork as temporary works within the launch pit daylight hours under live railway traffic conditions

- Pouring of concrete to form the thrust block wall within the launch pit
- Installation of temporary works on completion of the thrust bore auger works and the installation of two stakka box chambers
- Pouring of concrete surrounds for the thrust and reception permanent works using the excavator bucket, including provision of a temporary platform for operatives to vibrate as necessary
- Backfilling with layered type 1 and subsequent lifting out and removal of the temporary sheet piling under track possession to the reception pit
- Removal of temporary works and backfilling on completion for the launch pit
- Pumping and disposal of water and removal of spoil from site

Challenges and Solutions

- Due to the depths of the excavations, metal heras fencing was installed, double clipped and signed appropriately. All pits had ingress and access point and ladders were provided and checked daily. A davit arm was also fixed to the pits for emergency purposes. A top man was supplied at all times and clear communication was in place throughout the works
- Due to the proximity of the railway, all site areas were segregated using approved fencing and ALO restrictions were in place
- Due to the complexity of the temporary works, a Temporary works supervisor was provided full time for the project and hold points were added during construction sequencing. Once installed, all temporary works were signed off daily and checked prior to any works within the pits being undertaken
- All lifting activities were subject to a stringent permit to work system and all plant was checked daily, with test lifts undertaken prior to any work being undertaken
- Passenger trains running - clear/daily briefings were held to ensure all movements were known and a safe system of work in place with all staff on site signed in

Benefits

- With all plant being owned and self-managed through Coleman Rail's sister company Coleman Plant Hire Limited, the company was able to provide project surety to their client
- In house staff with the required rail civil engineering competence, enabled the project to be delivered to meet all programme and budget requirements
- Coleman Rail has a 24/7 on call service, which added additional support to the site teams and allowed late changes to be dealt with, without impacting the project