Buildings & Structures

Client:
Shibden Hall UB Strengthening

Location:
Hipperholme, Bradford

Summary

Design and installation of an RC ground beam and spandrel wall stabilisation, at Underbridge 27 at Hipperholme, located near Bradford.

Project Overview

The structure is located on the MRB line, and carries the Up and Down main of the Milner Royd Junction to Bradford, Mill Lane Junction.

A survey identified the downside spandrel was in poor condition with bulging and displaced stonework. Structural strengthening works were required to be undertaken to the Spandrel wall, including replacement of the timber part of the structure with stone to match the existing parapets. Both existing parapets were raised, using Kee Klamp handrails, to provide a 1.25m internal parapet height. A concrete ground beam behind the spandrel wall will be used to stabilise it.

The works were undertaken during a night time possession and good communication between ES and COSS was established. This was carried out during line blockages to eliminate the ALO risk with the adjacent lines. During preparation and follow up works, plant and equipment were brought to site in vehicles and delivered into the road closure.

Scope of work

- S&T cables and troughing were moved clear of the dig location during preparation shifts
- Excavation of the ground beam working in the direction of low mileage to high mileage
- Trench support/formwork was installed in the trench as the excavation progressed in accordance with the temporary works design and under the supervision
- Steel reinforcement was placed into the form using the RRV
- Dowel bars were inserted through pre-drilled holes in the spandrel wall.
- A concrete pump was placed on concrete into the formwork in a uniform manner to avoid eccentrically loading the structure as much as possible.
- Ballast top up in surrounding areas on the sleepers and ground beam
- Track alignment was checked to ascertain any changes from original position and any non-compliances that required correction
- Track lifted into place and all sleepers tamped to ensure full consolidation
- Handback engineer certified the track was suitable to re-open at line speed, after completion of tamping
- Track monitoring engineer taken a new set of readings to establish a new baseline for ongoing track monitoring

Successes

The road closure reduced possible disruption by members of the public during the works and allowed for smooth transitioning of plant and equipment to reduce delays.