Buildings & Structures

Client:
Goosehill Bridge

Location:
Goosehill, West Yorkshire

Summary

Replacement of MVN/252 Goosehill Bridge single span bridleway/footway/cycle path bridge on the MVN2 line at Goosehill, West Yorkshire.

Project Overview

The single span bridge spans two tracks and one siding, situated approximately 1.5 km from Normanton Railway Station. Inspections of the original bridge by Network Rail determined it was in very poor condition, and not capable of carrying the required loading under current standards.

Repairs would have been significant and potentially costly so it was decided the best value option would be to reconstruct the bridge.

The new footbridge is designed to accommodate horses, pedestrians and cycles and utilises the existing abutments which were assessed as being capable of supporting the new structure. The removal of the main girders on which the deck was sitting and shallower construction depth of the new bridge allowed a 2200mm increase in headroom at the lowest point between the soffit and rails below, although the presence of a 250mm diameter gas main on the east side is still the limiting factor for headroom at this location.

The works faced a number of challenges

- The single span bridge spans two tracks and one siding, situated approximately 1.5 km from Normanton Railway Station. Inspections of the original bridge by Network Rail determined it was in very poor condition, and not capable of carrying the required loading under current standards.
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- The new footbridge is designed to accommodate horses, pedestrians and cycles and utilises the existing abutments which were assessed as being capable of supporting the new structure. The removal of the main girders on which the deck was sitting and shallower construction depth of the new bridge allowed a 2200mm increase in headroom at the lowest point between the soffit and rails below, although the presence of a 250mm diameter gas main on the east side is still the limiting factor for headroom at this location.

Summary of works

- Removal of fill material from the bridge deck to reduce weight and to expose the deck
- Removal of the concrete from the steel deck troughs to reduce the weight further during a series of possessions
- Removal of existing triangular bridge deck plates in sections, and removal off site
- Removal of the existing bridge deck and main girders, and removal off site
- Preparation of the existing abutments to receive the new pre cast cill units
- Placement of the pre cast cill units
- Installation of the new bridge and gas main cantilevered support
- Re-grade of approaches to the bridge
- Installation of drainage and downpipes

Successes

- Good relationships developed with the local community who were kept informed of progress throughout the works, Highways Authority in connection with footpath and bridleway closures and our specialist suppliers Carvers for the fabrication of the new structure.
- Overcoming potential problems with crane and outrigger positions which had to straddle a gas main, as well as managing the lift of the existing bridge elements which were in very poor condition.
- Collaboration between all parties to deliver a design change which significantly reduced the works required to the existing abutments.
- Cost and programme efficiencies were made as the cill units were re-designed to be placed directly onto the abutment brickwork instead of using riser units, which would have required significant additional works to reduce the abutment levels and install concrete riser units.