VolkerLaser

ways, bridge and tunne

M2 Stockbury Viaduct

Following over six months of Early Contractor Involvement (ECI), VolkerLaser was contracted to undertake bearing replacement works at the M2 Stockbury Viaduct in Kent.

Forming part of the wider scheme of improvements to the strategic road network from the Port of Dover, vital bridge replacement works were identified on the structure, which was originally built in the late 1960's.

The project focused on three key areas: the half joint, east abutment, and west abutment, each with 11 rocker/roller bearings to be upgraded to mechanical bearings.

During the ECI phase, our team worked with A-one+ to understand the structure and design bespoke temporary works—an 80-tonne steel sway frame for the half joint and a hanging gallows system for the abutments.

The sway frame was supported by a 34m-long concrete pile cap with 22 CFA piles. Built at ground level using 400 steel sections and over 1,400 tension control bolts, it was connected to the concrete support beam with hinged joints and lifted into place by two 250-tonne cranes.

All 11 beams at the half joint were jacked simultaneously in a complex structural operation. Each beam was supported by a 250-tonne jacking assembly that replicated bridge articulation and allowed sway, controlled by a fully automated 12-point synchronised lifting system. At the abutments, an innovative hanger beam solution eliminated the need for traffic management on the M2 while maintaining bridge fixity. Beams were jacked in four phases, replacing 2–3 bearings per phase. Due to unforeseen stiffness issues, the team developed a new method to connect and preload the bearings without disrupting the process.

Working 24-hour shifts where possible, we also delivered a range of specialist services, including pile testing during ECI, CFA piling, expansion joint replacement, bridge deck waterproofing, kerbing, thermic lancing, and highpressure water jetting.

