

# Case Study

## Somerford A35 Footbridge, Christchurch

**Client:** Dorset County Council

**Consultant:** Dorset Engineering Consultancy

**Contractor & Anchor Installer:** Dorset Works Organisation

### PROJECT SPECIFICATION

Following an assessment to current standards, the relatively slim support columns of a footbridge, built in 1990, were considered vulnerable to vehicle impact damage and in need of protection. The bridge was not to be closed during any remedial works. The existing foundations were to remain in place, with no alterations to existing services and minimal disruption to traffic. A reinforced concrete protection-pier and foundation overlay was proposed, which would encase each of the four pairs of support columns and pad foundations. In the event of an impact, the pier and overlay had to withstand a potential, vertical uplift force of over 50 tonnes generated by the overturning moment.

### SOLUTION

The overlay was designed to extend 1 metre beyond the original pad foundation footprint and include 3 anchors at either end. Fill material was removed from round the existing foundations and replaced with mass concrete. This incorporated vertical pipe ducts, through which the anchors were driven vertically for 7metres into a known stratum of dense sand and loadlocked into position. A sleeve was placed over each driving rod and the reinforced concrete overlay cast round the existing pad foundations. Each anchor was proof loaded to 180kN, then released and locked off at 10kN; providing a potential 170kN resistance to any overturning moment. Finally, concrete was pumped into ribbed formwork to complete the protection-pier.

**Anchor System:** B06TB aluminium bronze anchor c/w 9m of 20mm Ø stainless steel threaded rod, 150mm x 150mm stainless steel load plate & stainless steel load nut.

**Quantity:** 24

**Anchor Design Life:** 120yrs

**Soil Type:** Dense Sand

