



MOTORWAY VIADUCTS

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Geotechnics Limited has been involved with the investigation of selected Midlands Links Motorway Viaducts on behalf of the Highways Agency. Many of the viaduct sections are undergoing a programme of maintenance and repair and hence the investigation was designed to check on ground conditions and to supplement the data on existing foundations in the Bescot and Oldbury areas for both temporary and permanent works.

Geotechnics Limited was appointed as Principle Contractor under the CDM Regulations and supplied a detailed Health and Safety Plan - Stage 2 to W S Atkins who were both the consultant for the scheme and Planning Supervisors.

Whilst the ground conditions at Bescot were investigated using traditional techniques of boring, drilling, probing and trench excavation, special insitu testing also formed an important aspect of the investigation. Pressuremeter testing, using

a High Pressure Dilatometer, was carried out in selected drillholes to test the soft to weak rock. This equipment applies a horizontal load to the sides of a specially formed pocket in the rock to provide stiffness, shear and creep parameters.

The length of existing piles at the viaduct supports was checked using Parallel Seismic tests down a preformed hole adjacent to a known pile cap. A vibration sensor was lowered incrementally down the hole while an elastic compression wave was imparted to the top of the pile cap using an instrumented hammer. Results indicated that the pile length was greater than 20m - far more than anticipated.

Under a separate contract a further section was investigated near Oldbury to provide data for foundation design of temporary support structures. This section ran through the valley of the Birmingham Canal and required exploratory holes to be undertaken on steep slopes as well as adjacent to the canal, thus necessitating special access, safety and contamination prevention measures.

The combination of conventional investigation and more complex insitu testing under difficult access and working conditions, has illustrated the company's capability and flexibility to provide data necessary for the maintenance and enhancement of the nation's Motorway Network.

If you would like any more information on this or any other geotechnical matter, please write to mail@geotechnics.co.uk

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