M5 Real Time Fuel Sign Foundations by FLI

FLI Structures, a member of The Haley Group, has recently installed 4 innovative Fuel Sign structures and foundations on the M5 for Skanska’s Area 2 Asset Support contract for a new Highways England trial on the road network.

The project brief required an innovative approach to the design work and a short lead time for installations, FLI were asked to deliver reduced whole life costs, less risk to road workers and a lower environmental impact, compared to a traditional solution.

FLI was contracted to develop the screw pile foundations and sign supports columns in accordance with Eurocodes and obtain AIP’s, departures and approval, for four site specific locations between Bristol and Exeter on the M5. Due to the varying ground profiles and topography, including steep slopes, FLI provided sign posts integrated within an innovative modular grillage solution. This grillage incorporated retaining walls and cladding where needed.

The steel grillage consists of a core frame to support the signage and a modular extension with integral A chamber to cater for two cabinets. An access platform with a staircase was incorporated to allow for maintenance of the sign, removing the need for onsite plant and reducing working at height issues. FLI’s grillages are designed to interface with either FLI’s screw piles or micro piles with driven shear tubes, and a range of stub / leg heights fixed into place for use on varying degrees of slope. This wide range of options available within the design, enabled FLI to produce a solution for each site more efficiently from a number of common parts, reducing the design and manufacturing programme on the project. The frame incorporated a retaining wall for backfilling on the face closest to the kerb and cladding on the exposed faces.

The Fuel Sign and cabin grillage needed only eight supporting screw piles. FLI’s innovative grillage foundations are quick to install, requiring fewer on-site installation shifts compared to concrete. This helps to improve site safety and lower the road works.

Traditional foundations can take up to 4 weeks to excavate, shutter, level concrete and cure and present additional problems on sloping sites such as those within this project. The screw pile foundations which were produced in FLI’s factory, were installed in two shifts, with pile testing and
assembly completed to signage fix, in only three more shifts. This was despite the fact that the ground was very soft, so the piles were relatively long.

The scheme was completed for Highways England, incident free and fabricated in accordance with HSS20 and steel execution class 3.

The trial, launched at the end of March, will provide fuel price information from Gordano, Sedgemoor, Bridgwater, Taunton Deane and Exeter motorway service areas, and will run until the end of 2017.

**Highway Project Manager at FLI commented:** “FLI’s “can do” approach to this important and high profile trial project and their design flexibility helped us get the signs installed and commissioned ahead of schedule. Road users are now able receive live pricing information and better plan their journeys whilst on the go.”

![Britain's first real time comparative fuel price sign. The complete structure including foundations installed over just five night shifts.](image-url)
A single structure carrying all services and sign maintenance access, built up from just eight screw piles.

About FLI Structures
Francis & Lewis International Ltd (FLI Structures) is part of the Haley group, a collection of specialist engineering companies based in Great Britain. FLI have over 60 years experience in the design, manufacture and installation of steel structures and steel piled foundations.

Media Contact
For further information please contact Marcus Hole, Marketing Executive at FLI Structures, via MarcusH@fli.co.uk or 01452 722200. Alternatively visit our homepage at www.fli.co.uk