

Second Severn Crossing, U.K.

Contractor—Laing/ GTM Joint Venture

Owner—Severn River Crossing PLC

1994

proserve
MARINE CONSTRUCTION ENGINEERS

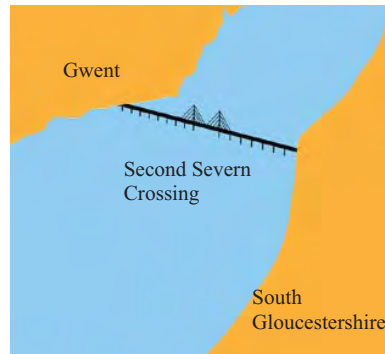
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Fabriform

The Second Severn Crossing comprises a 5.2 km crossing of the Severn Estuary between Severn Beach and New Passage. The crossing itself consists of a 0.9 km cable stayed bridge with the main span being 0.5 km long and gives a clearance of more than 37 m over the highest tide level. The viaducts connecting the bridge to the shores are 2.2 km and 1.9 km to the Gwent and South Gloucestershire sides respectively.



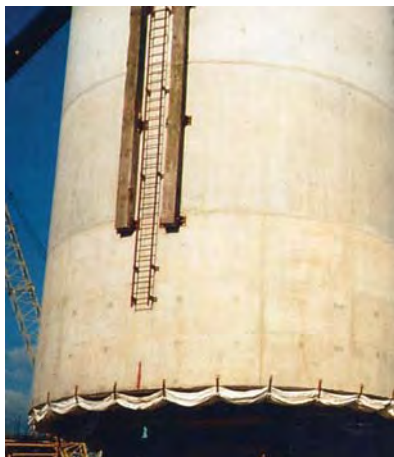
Location Plan



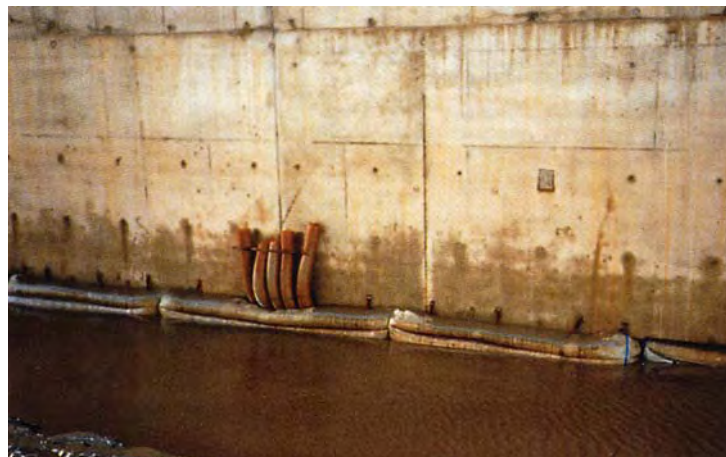
Second Severn Crossing

The foundations of the bridge were made of 37, 35 m long precast Concrete caissons, each weighing up to 2,000 tonnes each. Before these caissons were moved into their final position Fabric formwork units were positioned onto the underside of the caissons using high strength webbing, and held tight with stretch webbing so that they would be less likely to be damaged during positioning. This webbing was designed to break during the filling procedure.

All the units had internal porous diaphragms to help to distribute the stress to the outer walls and to aid filling. Each Unit was filled from one end. Internal pressures were monitored from the vent tubes to confirm the complete filling of each unit. The system was used to found the caissons onto dredged rockhead, and was designed to be part of the bearing area of the foundation. Once the units had been filled the caisson supports were removed and the caisson cells were then tremi filled with concrete.



Seals Positioned with
webbing straps



Filled Seals at Base of Caisson