The Golden Crossing Constructors JV awarded the execution of a test pile including load test and the construction of the foundation piles for the main bridge piers of the planned cable-stayed bridge across the river Fraser to the Foundation Engineering Branch in March 2006.
For each of the 4 main bridge piers 12 large-bored piles with a diameter of 2.50 m and a depth between 70 and 80 m were constructed by grab drilling. The lengths of the piles up to the bottom level of the pile cap are between 73 and 90 m.
For the pile construction, left in place steel case pipes with lengths of up to 42 m, partly in two sections, were vibrated in by pile drivers in advance.
The steel pipes bridged the distance from the pile cap beam down to the river bottom and supported the drilling in the upper fine sand layers.
Underneath clay grounds are to be found in which sand and gravel layers are stored, some of them with groundwater under pressure. In this area the excavation down to the pile bottom was carried out without casing. Stabilization of the drilling hole was taken on by a polymersuspension. The verticalness of the uncased drilling was monitored during and after completion of the drilling works by the Koden-Test.
The pile reinforcement was prefabricated and delivered by the Bilfinger Berger subsidiary BB BAR in Bangkok in segments of 11.75 m. The reinforcement joints (bar diameter 50 mm) were executed as butt joints using the “BB Twin Shell Couplers”.

Main quantities:
48 Nos. piles, d = 2.50 m: length 3,680 m; on average = 82.50 m;
casing length average = 36.30 m;
3,300 t reinforcement; each pile on average = 68.58 t;
21,095 m³ concrete: on average 440 m³/pile