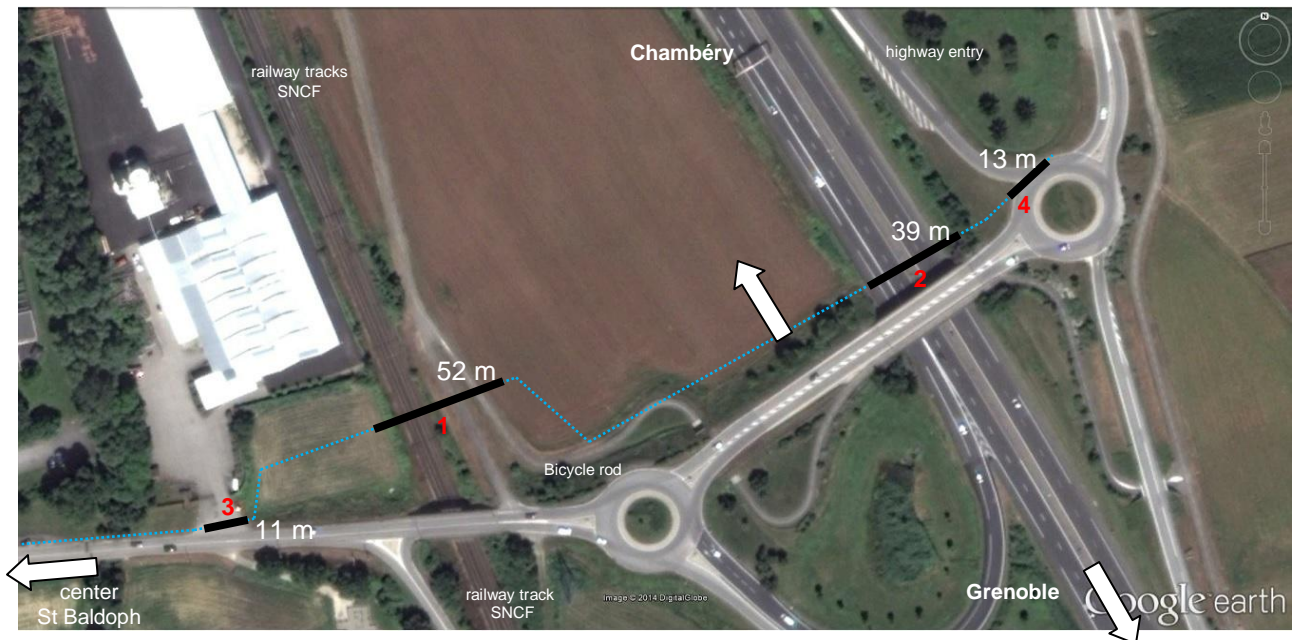


## Fresh water pipes under railway and highway

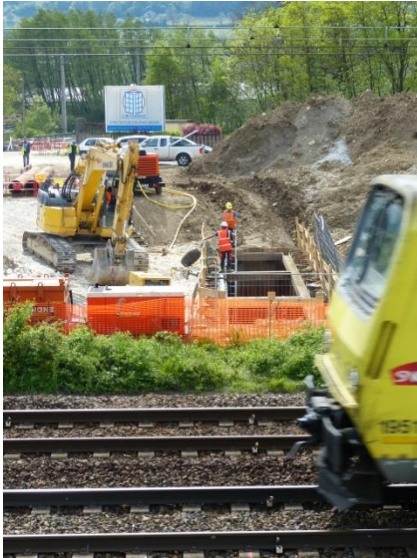
city:	St Baldoph (73), France
client:	Chambéry Métropole
contractor:	SOGEA 38
length:	Ø 600 mm : 52 + 39 m ( Ø 24" : 172 + 129 ft) Ø 400 mm : 13 + 11 m ( Ø 16" : 43 +36 ft)
pipe:	HDPE OD 250 mm (10")
machine:	steel pipe ram TERRA-HAMMER TR 360
underground:	mixed, boulders, sand, clay (ground water)



The French contractor SOGEA 38 had to ram several steel pipes with diameters 400 mm (16") and 600 mm (24"). These steel pipes undercrossed the highway A41, the highway entry and the railway tracks (RFF - SNCF, connection between Grenoble and Chambéry).

The longest ramming jobs were also the most critical ones: All the safety precautions of the state owned railway track owner RFF had to be fulfilled, to ensure that the railway track will not be damaged. One control station with 44 measuring points controlled and stored all data on top of the ramming path. If only one measuring moves, an automatic alarm starts, informing the RFF and the construction manager M. Crupi of SOGEA 38. The safety precautions for the highway crossing (AREA) were also strict. This is the reason why SOGEA 38 was chosen by the Department of the Metropolis Chambéry for these critical steel pipe ramming jobs.

**Job site report  
TERRA-HAMMER TR 360**



The 52 m (172 ft) ramming with Ø 600 mm (24") underneath the railway and the bicycle road could be done in one go without intermedium cleaning of the steel pipes with a ramming speed of 35 m/h (115 ft/h) to 12 m/h (40 ft/h) during the last meters. These excellent ramming speeds prove the power of the TERRA steel pipe ram TR 360. Pic. right: The groundwater level can be seen at the orange colour of the sheet piles.



Left: Inside of the steel pipe you can recognise the ground. Above: The 39 m (129 ft) pipe section under the highway during the cleaning of the Ø 600 mm (24") steel pipe.



Left: The 39 m (129 ft) pipes Ø 600 mm (24") under the highway. Right: The installation of the TERRA-HAMMER TR 360 for the 13 m (43 ft) long ramming section with Ø 400 mm (16") under the highway entry. The clients Chambéry Metropolis, AREA and RFF/SNCF had been very satisfied about the excellent procedure. Concerning the steel pipe ramming method there had be no influences to the underground or foundations of existing buildings. The team of M. Crupi had done a very good job.

