



# CRS Tunnelling makes Canadian debut with King Street feedermain project

The project included the construction of approximately 850 metres of 1,200-mm concrete tunnel using microtunnelling technology

BY ANDREW TOPF

**C**RS Tunnelling is the Canadian division of Super Excavators, a well-established, Milwaukee-based heavy civil construction company with a focus on tunnelling, microtunnelling, foundation work, slip lining and open-cut construction.

CRS was launched just over a year ago to meet the growing demand for microtunnelling and tunnelling work in Canada. Based in Oakville, Ontario, the firm specializes in the construction of microtunnels from 0.760 metres (2.5 feet) up to 2.1 metres (7 feet) in diameter; and large diameter tunnels up to 7 metres (23 feet) in EPB or hard rock conditions; for telecommunications, water mains, sewers and combined-sewer overflow tunnels.

In August of last year, CRS and Dibco Underground formed a joint venture and won a bid to construct the King Street Feedermain project in the Town of Caledon, Ontario, located about 50 kilometres northwest of Toronto. The project owner was the Region of Peel and the engineers were Gamsby and Manne-row along with CIMA. The \$11.9 million contract involved constructing 850 metres of 1,200-mm concrete tunnel using microtunnelling technology, and about 900 metres of 600-mm concrete pressure pipe watermain and appurtenances. Also included in the job was testing and commissioning of watermain and the reconstruction of urban standards including storm sewers, gutters, sidewalks, lighting and streetscape improvements.

### Installation of concrete tunnel via three microtunnel drives

The joint venture finished the first of three microtunnels on February 6 (152 metres long), and recently completed the other two drives on April 2 (382 metres long) and April 30 (316 metres long) respectively. Finishing touches on the project are expected to be completed by mid-July. CRS broke ground with an Akkerman SL60 slurry microtunnelling machine, and used a Derrick separation system for handling spoils. Dibco supplied heavy equipment including cranes, front-end loaders, haul trucks and trailers, plus any additional labour requirements.

Walter Trisi, vice-president and general manager of CRS Tunnelling, told CUI that for Super Excavators, the King Street Feedermain was significant because it was their first microtunnelling project in Canada, and second, it was the first microtunnel in the downtown centre of the historical community with deep roots extending back to 1794 with the founding of Bolton's flour mill.

### Challenging conditions

Microtunnelling was the best way to bore the tunnel because the technique does not involve dewatering, which might have weakened the structural integrity of some of the town's older buildings, explained Trisi, a trenchless veteran whose resume includes 18 years with Caterpillar/Lovat.

"They were worried that dewatering would cause settlement in the old downtown corridor where some of the homes date back to the late 1800s or so. They wanted to minimize the risk due to damage that could be caused by settlement," Trisi said. "We had a series of monitoring points to check for surface cracks, surface settlement, deep settlement, vibration and noise. We had plenty of monitoring on the job to ensure the protection of the local area."

With microtunnelling, working in congested areas is sometimes a problem, and Trisi said one of the challenges of the job was its location, in the town's busy downtown corridor, which gets a lot of car and pedestrian traffic. "It was difficult to maneuver, and we had a lot of restrictions, such as: the inability to use hauling equipment before 9 a.m. and between



3 and 5 p.m. In certain locations, there were also restrictions on the 24-hour work clock.

"That was difficult contractually," Trisi said of the restrictions. "But with proper planning, communication and teamwork with the Region of Peel and the engineers, we were successful with overcoming the challenges and restrictions."

Another fly in the ointment was the weather, with all of the tunnelling needing to be completed during the winter, one of the coldest on record for Central Canada.

"Freezing was definitely an issue. And the fact that we couldn't mine 24 hours a day during the winter caused us some headaches," Trisi said, adding the company needed to take other precautions to winterize equipment. "We got through it. But it was definitely difficult."

### Forging ahead

The success of the King Street feedermain project has already borne fruit for CRS; the company has picked up another contract in Guelph and is bidding work in other Canadian cities including Calgary, Vancouver and Montreal. "It's full speed ahead," said Trisi. "We're looking for work Canada-wide."

### CRS Tunnelling

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### PROJECT AT A GLANCE:

#### Project completed by:

CRS Tunnelling/Dibco Underground, a joint venture

**Location:** Town of Caledon, ON

#### Direct customer:

Region of Peel, ON

#### Underground construction

**equipment used:** Akkerman SL60 Microtunnelling Boring Machine, Derrick separation system.