

# PIPE JACKING CASE STUDY

## Cockburn & Calrossie Trunk Sewer Relief Works



[www.pipejacking.org](http://www.pipejacking.org)

PROJECT	Cockburn & Calrossie Trunk Sewer Relief Works
CLIENT	City of Winnipeg
CONTRACTOR	Ward & Burke
PIPE SUPPLIER	Decast Ltd. Ontario
TUNNELLING MACHINE	Herrenknecht AVN
VALUE	\$8.9million



### PROJECT OVERVIEW

In May 2017, Ward & Burke were awarded to construct 526m of 2700mm ID microtunnel for the Trunk Sewer project. Unique project aspects include:

- Tunnelled underneath a live CN railway and a major roadway.
- Large diameter pipe installation in narrow urban construction easements.
- Trenchless constructed tie-in between newly installed 1350 & 2700 pipeline.

### DESCRIPTION OF WORKS

- The project was carried out in an urban environment with narrow construction easements.
- 3 No. concrete caisson shafts were constructed to facilitate a double launch of the TBM and the requirements of the contract.
- The primary launch shaft was 10.4m internal diameter (ID) with 8m ID reception shafts. A 4th shaft was constructed to act as both the launching point for the shorthand mined section, installing a 1350mm ID concrete pipe in a single pass behind a steel shield and tying into the side of the newly installed 2700mm ID main line, and also as a safe working environment for the installation of the permanent works manhole.
- The ground presented mixed conditions, including silty clay and stiff to soft clay medium to high plasticity clay. Tunnelling was carried out using a slurry machine manufactured by Herrenknecht. The rail crossing, with a length of 112m was constructed in approx. 7 days. The second and longer drive, with a length of 414m, was completed in 5 weeks. All tunnelling operations were conducted on a single 12-hour shift basis with an average advance rate of 15m per shift. An intermediate jacking station was installed in the second drive but was not required due to the low jacking forces on the pipeline. No issues were encountered during tunnelling operations.

FURTHER INFORMATION: [www.wardandburke.com](http://www.wardandburke.com)

