

# PIPE JACKING CASE STUDY

## Inglewood Sanitary Trunk | Phase One | Calgary, Alberta



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

PROJECT	<b>Inglewood Sanitary Trunk   Phase One Calgary, Alberta</b>
CLIENT	<b>City of Calgary</b>
CONTRACTOR	<b>Ward &amp; Burke</b>
PIPE SUPPLIER	<b>Precon Manufacturing Ltd.</b>
TUNNELLING MACHINE	<b>Herrenknecht AVN2500 &amp; AVN2286 MTBMs</b>
VALUE	<b>\$55.3million</b>



### PROJECT OVERVIEW

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Ward & Burke were responsible for the design and construction of eight reinforced concrete caisson shafts and 3.5km of 2286mm and 2500mm internal diameters - 4m length reinforced sewer pipeline installed by the method of micro-tunnelling.

#### DESCRIPTION OF WORKS

Works involved providing 3.4Km of HDPE lined, RC pipe from 42 Ave / 13 St SE to 8th Ave / 9St SE. This included 2.7Km of 2500mm ID Pipe and 0.7Km of 2286mm ID pipe. The micro-tunnelling was split into 7 drives, ranging from 250m to 850m. The project was located in the Inglewood area of Calgary which includes residential, commercial and heavy industry. This mixed environment introduced various challenges to each drive. These challenges included, High Voltage power lines, CP and CN railways, underground services and heavily trafficked roads such as Blackfoot trail and 11St. For all drives, the VMT guidance system was used. This ensured that the MTBM remained on the correct alignment, which included 500m radius horizontal curves.

The most challenging drive on the project was the from shaft 4 to shaft 3. 850m, underneath 11St in loose gravel which contained large volumes of cobbles and boulders. There were many services to cross as well as a CP railway. Due to the ground conditions and risks involved, Ward and Burke implemented the Herrenknecht D-mode system. D-mode is an independent unit which provides and maintains a constant face pressure using bentonite. D-mode created a stable face and bore for the MTBM, this then substantially reduced settlement throughout the drive.

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

