

# 18-METRE TRI-SPAN: GREAT LENGTHS TO PRESERVE NATURE CASE STUDY



DG Group



## THE CLIENT

DG Group - a leader in land acquisition, development and sustainable community building.

## TIMING

Phase 2B of the project began in late November of 2023, with Tri-Span installation completed in late October 2025.

## THE CHALLENGES

- A structure that could span 18-metres wide
- Installation that would leave the existing watercourse undisturbed
- A solution that would reduce local traffic congestion on Mayfield Rd. from the new neighbouring community of Countryside Village.

## PROJECT OVERVIEW

DG Group required a precast structure capable of supporting local traffic in a new neighbourhood and spanned the width of a pre-existing watercourse.

The existing watercourse meanders south of Mayfield Rd. to Bramalea Rd. The valley land is located in Block 317 and Block 318 of the development. The Meandering Belt limit is 18 m with an addition 30 m set back on either side.

Located southwest of Mayfield Rd. and Bramalea Rd. in Brampton, Ontario, this new development, Countryside Village Phase 2B, needed a robust solution that could provide access to Bramalea Rd. to the east. This would help to alleviate local traffic from accessing Mayfield Rd. and offer relief from traffic congestion.

In addition, once the development of Countryside Village is completed, Inspire Blvd. will also provide access to Bramalea Rd. to the East.

The consulting engineering firm for this project was Schaffers Consulting.

## THE SOLUTION:

Concast delivered a Tri-Span solution, installed by partner company Condrain, that included:

- 64 custom footings - 50 to support the Tri-Span, measuring 6100 mm x 1200 mm x 2.016 m. An additional 14 footings were manufactured to support 14 wing walls.
- 74 Tri-Span units - 18,000 mm x 3460 mm x 675 mm, weighing 36,150 kg ea. These were Concast's largest spans to date. In addition, 4 precast concrete headwalls were installed on top of the Tri-Span, with each headwall measuring 9743 mm x 1770 mm x 0.45 m tall.
- Tri-Span units were delivered on Trombone Trailers, with wide load permits and escorts.
- Each Tri-Span was braced and connected. They were post-tensioned with each unit having two 100 mm ducts for post-tensioning, using 32 mm diameter threaded rod (500 MPa).
- The Tri-Span units were designed for 4.3 m Design Earth Cover. Designed in accordance with CAN/CSA -S6-14 with a concrete design strength of 50 MPa.
- Load Bearing Capacity of the soil needed to be compacted to withstand an SLS=200 kPa and ULS=300 kPa.
- Throughout the subdivision, additional Concast precast products were installed, including pipe, maintenance holes, catch basins, and more.



## RESULTS:

- Inspire Blvd. will provide access to Bramalea Rd., providing local traffic with a reduction in congestion, as well as reducing the need to access Mayfield Road from the subdivision.
- The existing watercourse remained untouched, preserving natural habitats.
- A sustainable solution that will exceed the design life of the project.

## CONCLUSIONS

Concast's established relationships in the industry, coupled with strategic partnerships for installation, made this a successful project. Our internal field services and support ensured a smooth transition from start-to-finish for the duration of the project.

Special thanks to DG Group, Condrain, and Schaffers Consulting for partnering with us on this project.



## WORK WITH CONCAST

Interested in building a partnership with Concast on your next infrastructure project? We want to hear from you! Our team of in-house engineers can custom design a solution that meets your exact specifications.

Get in touch by emailing [sales@concastpipe.com](mailto:sales@concastpipe.com) today to begin planning your project. Visit [concastpipe.com](http://concastpipe.com) to see our full product line and services offered.

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