



Photos showing the installation of precast concrete bridge units and the completed bridge and roadworks.



10th Line Lover's Creek Bridge Replacement Town of Innisfil

In June 2005, the Town of Innisfil retained the Ainley Group to complete the engineering design and contract administration for the replacement of the 10th Line Lover's Creek Bridge, located west of the Village of Stroud in Innisfil. The existing bridge was found to have extensive structural deterioration, insufficient structure width, and a triple load limit posting. In addition, traffic barriers were absent on both the existing bridge and approaches.

Lover's Creek is classified as an environmentally significant area in the vicinity of the bridge. This created a number of challenges with respect to hydraulic design and environmental mitigation. Based on the flow data provided by Lake Simcoe Region Conservation Authority, it was determined that the existing road profile over the bridge could not be modified in order to preserve the current flood lines of the watershed during the larger design storm events. The final design consisted of a precast concrete, open footing, rigid frame structure, which minimized the disturbance to the watercourse and duration of the required road closure, while maintaining the necessary floodlines and improving overall hydraulic capacity. The road platform was significantly widened and barriers were added to the bridge and approaches. In addition, the bridge structure was designed and constructed to accommodate for widening the 10th Line to four lanes in the future.

Another challenging aspect of this project was the poor soil conditions that were encountered at the bridge site. In order to provide adequate support for the structure and prevent large settlements, helical pulldown micropiles were installed into the founding soil below the concrete bridge footings

Project Facts

Client: Town of Innisfil

Scope of Work:

- Class Environmental Assessment (Schedule 'B')
- Detailed structural, hydraulic, and road design
- Contract administration
- Construction supervision:
 - Environmental protection measures
 - Removal and disposal of existing bridge structure
 - Earth excavation
 - Helical pulldown micropiles
 - Concrete footings
 - Installation of precast bridge units
 - Granular backfill
 - Armour stone retaining walls, concrete distribution and approach slabs, and concrete barriers
 - Site restoration.

Project Cost: \$700,000 (2007)