



ENGINEERING PROJECT CASE STUDIES

Paflor Technical Services

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Case Study 1: Fairview Street Widening Project (City of Burlington, ON)

Project Overview

Widening Fairview Street east of Brant Street to add a new intersection/turning lane for a major retail development, including bridge extension, utility relocations, traffic staging, and environmental compliance.

FIELD SERVICES — Site Visits & Surveys

- Site Visit — Reconnaissance: Photographic survey, notes to baseline existing conditions.
- Drainage survey: Drainage features, photos, notes for culverts/creek interface.
- Topographic survey: Topographic grid, photos, notes for roadway geometry and bridge tie-ins.
- Quantity survey: Topographic grid, volumes, notes for cut/fill and materials planning.
- Legal survey: Legal boundaries, buildings, service locations for easements and impacts.
- Servicing survey: Drainage, storm, sanitary, water & surface features to plan relocations.
- Layout: Vertical and horizontal controls, staking for lane additions and intersection geometry.
- Horizontal and vertical controls: Benchmarks, monuments, local data to control the bridge extension.
- Environmental buffers, setbacks, driplines: Benchmarks, staking, markings, photographs for conservation approvals.
- Drone survey — Photogrammetry: Aerial photography for corridor-wide coordination.
- Bathymetry survey: Ground and water elevations, areas for abutment and scour checks.

Testing & Monitoring

- Pavement and concrete sampling: Videos, test forms, notes, photos for widening and bridge components.
- Surface flow measurement (creek): Geo-referenced cross-section, velocities, depths for hydraulic checks.
- Storm event flow measurement (SWM facilities): Flow rates, depths, velocities, outlet dimensions near crossing.
- Transducer data collection (as required): Transducer records, photographs, notes for stage/level monitoring.

Inspections

- Health and safety: H&S measures, photos, videos, notes; traffic control compliance.
- Erosion and Sediment Control (ESC): ESC control condition, photos, notes at the creek interface.
- Earthworks & Grading: Partial Pregrade/Grading Plan compliance, photos, videos, notes.
- Servicing & Utilities: Partial Servicing/Utility Plan compliance for hydrant relocation and transmission lines.
- As-builts & Physical condition assessment: Earthworks, Grading & Servicing Plan compliance; visual inspection, photos, notes.

Documentation Produced

- Photographic survey log; topo/control files; drainage and bathymetry records; ESC inspection reports; concrete/pavement test forms; traffic staging notes; as-built markups; permit files.

Results & Outcomes

- Completed widening and new intersection to specification.
- Uninterrupted utility service throughout construction.
- Compliant bridge extension with environmental approvals.
- Hydrant upgrades and relocations to authority standards.
- On-schedule delivery with strong stakeholder relations.

Case Study 2: Tomken Road Watermain Twinning (City Corridor)

Project Overview

Parallel watermain installation in a high-traffic corridor with continuous service, curb-lane construction, and full restoration.

FIELD SERVICES — Site Visits & Surveys

- Site Visit — Reconnaissance: Photographic survey, notes for business/frontage access.
- Topographic survey: Grid, photos, notes for trench alignment and restoration grades.
- Servicing survey: Storm/sanitary/water & surface features to coordinate tie-ins.
- Layout: Vertical/horizontal controls and staking for trench, valves, hydrants.
- Horizontal and vertical controls: Benchmarks, monuments, local data for precise installation.
- Drone survey — Photogrammetry: Aerial progress and staging verification.

Testing & Monitoring

- Hydrant flow test: Hydrant location, photographs, notes to confirm fire flows.
- Watermain testing: Watermain location, videos, notes for pressure/leakage/disinfection.
- Flow meter installation/reading: Meter location, photographs, notes for commissioning.
- Pavement and concrete sampling: Test forms, notes, photos for curb/sidewalk/roadway restoration QA.

Inspections

- Health and safety: Lane closures, worker/public protection compliance.
- Erosion and Sediment Control (as needed): Control condition during trenching.
- Earthworks & Grading: Trench support/backfill compaction checks.
- Servicing & Utilities: Partial Plan compliance for connections, crossings, and clearances.
- As-builts & Physical condition assessment: Location verification, valves/fittings documented.

Documentation Produced

- Flow test sheets; pressure/disinfection reports; meter read logs; compaction/testing forms; photo logs; traffic control records; as-built sketches.

Results & Outcomes

- Zero service interruptions during construction.
- Full curb, sidewalk, and roadway restoration to city standards.
- Improved system capacity and redundancy.
- On-schedule completion with minimal community complaints.



Case Study 3: Town of Milton Rural Neighborhood Urbanization

Project Overview

Conversion of the last rural residential pocket to modern urban standards—new watermain, storm sewer, curb/gutter, sidewalks, and regrading.

FIELD SERVICES — Site Visits & Surveys

- Site Visit — Reconnaissance: Photographic survey and notes for pre-construction conditions.
- Drainage survey: Ditch/swale inventory, photos, notes for elimination plan.
- Topographic survey: Grid, photos, notes to establish urban grades.
- Quantity survey: Topographic grid, volumes, notes for cut/fill planning.
- Legal survey: Boundaries, buildings, service locations for ROW adjustments.
- Servicing survey: Storm, sanitary, water & surface features for full urbanization.
- Layout: Controls/staking for curb, sidewalk, and appurtenances.
- Environmental buffers, setbacks, driplines: Staking/markings/photos for trees and sensitive edges.
- Drone survey — LIDAR/Photogrammetry: 3D surface/contours for grading verification.

Testing & Monitoring

- Guelph-meter in-situ infiltration test: Infiltration rates, soil characteristics, photos, notes to tune drainage.
- Soil sampling: Sample location, photographs, notes for trench/backfill suitability.
- Surface water & groundwater sampling (as required): Locations, photographs, notes.
- Storm/sanitary sewer flow sampling (spot checks): Sample locations, photographs, notes.
- Pavement and concrete sampling: Test forms, notes, photos for sidewalks and curb.

Inspections

- Health and safety; ESC: Measures in residential setting; ESC condition checks.
- Earthworks & Grading: Pregrade/Grading Plan compliance, videos/photos/notes.
- Servicing & Utilities: Partial Plan compliance for new storm network and water appurtenances.
- As-builts & Physical condition assessment: Verification of curb/gutter/sidewalk and drainage performance.

Documentation Produced

- Topo/quantity takeoffs; infiltration and soil test reports; sewer sampling notes; ESC and H&S logs; photo progress books; as-built packages.

Results & Outcomes

- Neighborhood fully urbanized with compliant water/storm systems.

- Continuous pedestrian network (curb, gutter, sidewalks) delivered to standards.
- Improved drainage performance and property values.
- High resident satisfaction through communication and staged delivery.

Case Study 4: Yin's Development — Townsend Residential Project (Greenfield Subdivision)

Project Overview

Turnkey design-to-delivery of a residential subdivision converting agricultural land to serviced lots, including design, permitting, third-party coordination, inspections, and contract administration.

FIELD SERVICES — Site Visits & Surveys

- Site Visit — Reconnaissance: Photographic survey, notes for baseline.
- Topographic survey: Grid, photos, notes to establish grading plan.
- Legal survey: Boundaries, buildings, service locations for parceling/easements.
- Servicing survey: Drainage, storm, sanitary, water & surface features planning.
- Layout: Controls/staking for roads, lots, utilities.
- Horizontal and vertical controls: Benchmarks, monuments, local data for design control.
- Environmental buffers, setbacks, driplines: Staking/markings/photos for tree protection and corridors.
- Drone surveys — Photogrammetry & LIDAR: Aerials/3D surface/contours for mass grading and cut/fill.
- Bathymetry survey (if SWM pond/wet area present): Ground/water elevations, areas for pond design.

Testing & Monitoring

- Guelph-meter in-situ infiltration test: Infiltration rates/soil characteristics for SWM design.
- Soil sampling: Locations, photos, notes for pavement structure and utilities.
- Storm event flow measurement (SWM facilities): Depths, velocities, outlet dimensions during commissioning.
- Pavement and concrete sampling: Test forms, notes, photos for roads, sidewalks, structures.
- Flow meter installation/reading (as applicable): Meter location, photos, notes for servicing checks.

Inspections

- Health and safety; ESC: Site controls through clearing, grading, servicing.
- Earthworks, Grading, Servicing, Utilities: Partial Plan compliance across phases.

- As-builts & Physical condition assessment: Earthworks, Grading & Servicing Plan compliance; visual QA with photos/notes.

Documentation Produced

- Survey/control files; environmental buffer records; infiltration/soil reports; SWM flow sheets; concrete/pavement test forms; inspection logs; as-builts; permit closeout packages.

Results & Outcomes

- All municipal and provincial approvals obtained without delays.
- Integrated third-party services delivered on the master schedule.
- On-time delivery of fully serviced lots ready for vertical construction.
- High client satisfaction via single-point, turnkey management.