



SOLENO

MASTERING WATER SUSTAINABLY



KUSTOMFLO

DEEP GULCH: A CHALLENGING HDPE CULVERT REHABILITATION PROJECT WITH KUSTOMFLO

DEEP GULCH AT CORNER BROOK

Location: Corner Brook, Newfoundland
Installation: June to July 2025

PROJECT DETAILS

Distributor: EMCO Waterworks
Contractor: JCL Investments Inc.
Engineer: ANDERSON ENGINEERING
CONSULTANTS LTD.

SITE CONDITIONS

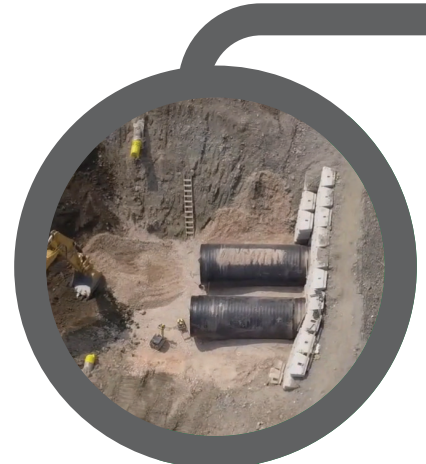
Trench Depth: 10ft in some areas up to 32ft in other areas
Trench Width: 40ft and in the deeper areas almost 60ft
Type of existing soil: Previous construction backfill with local topsoil
Backfill Material: Class 1 Crushed Stone
Surface Material: Topsoil and Pavement

CONTEXT

A High-Stakes Culvert Rehabilitation Under a Steep, High-Velocity Stormwater Corridor

A major roadway in Corner Brook, Newfoundland required urgent rehabilitation of its aging stormwater infrastructure. The project site presented serious challenges, including a steep slope, high-velocity water flow, and trench depths reaching 32ft.

These demanding conditions excluded traditional materials like concrete, leading engineers to seek an advanced, customized solution.





CHALLENGE

An Engineered HDPE System Designed for Durability, Performance, and Precision

The primary goal of the project was to design a system capable of withstanding abrasive, fast-moving stormwater, while meeting the project's structural and access specifications. Soleno's KUSTOMFLO HDPE solution quickly emerged as the only viable option.

Its high-performance thermoplastic construction ensured resistance to abrasion, lightweight handling, and a watertight system — all critical for both safety and long-term performance.



SOLUTION

A Complete HDPE Solution — Pipe and Manholes, Made to Measure

Soleno delivered a fully customized system tailored to the terrain and flow conditions:

- **Two 60in diameter KUSTOMFLO™ culverts** crossing the road
- **86in diameter KUSTOMFLO™ outlet pipes** designed to handle steep-grade discharge
- **Energy dissipation rings** at the outlet to reduce flow velocity and prevent erosion
- **Four vertical manholes** (two 21ft, 18ft, 17ft) fabricated in HDPE
- All manholes were equipped with **aluminum ladders and safety platforms**, meeting Newfoundland's stringent stormwater access standards



The project highlighted KUSTOMFLO's ability to integrate pipe and structure into one seamless system, eliminating the need for mixed-material installations.

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The Benefits of KUSTOMFLO large HDPE pipe

“KUSTOMFLO was the only system that could meet all requirements. Other solutions required combining components from multiple suppliers — not ideal for this complex site.”

Beyond being one of the first major projects in Atlantic Canada to use aluminum access platforms in stormwater structures, the Corner Brook Deep Gulch project proves that custom HDPE solutions like KUSTOMFLO are ideal for complex installations with high performance demands.

- **Resistance to high-velocity water flow**
- **Lighter and easier to install** compared to concrete (10–20x lighter)
- **75+ year lifespan**, ensuring durability
- **Custom fabrication** for both pipes and manholes
- **Solenio, only manufacturer capable of providing a full HDPE solution**



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