

# Construction Method: Pipe Ramming

**Project:** Fairwood Emergency Culvert Repair



**Location:** Fairwood, Washington

## Project Description:

Staheli Trenchless Consultants provided design services for 235 feet of 48-inch diameter steel culvert replacement at the Fairwood Golf and Country Club in Fairwood, WA on an emergency basis. The existing 257 feet of 36-inch corrugated metal storm culvert was constructed at a 3.8 percent grade and was failing. A number of trenchless technologies were considered for replacement of the failing pipe including pipe bursting, pipe ramming around the existing casing, and installing a new pipeline with auger boring adjacent to the failing pipeline.

After performing a risk evaluation for King County, it was determined that pipe ramming offered the lowest risk-cost-impact solution for the construction of the new pipeline. STC designed a 48-inch steel casing that was installed by pipe ramming around the existing 36-inch corrugated metal pipe. The corrugated metal pipeline was then removed from within the new pipe. During construction, the contractor elected to use a hydraulic assist with the pneumatic hammer to dramatically increase the ramming speed. This resulted in less rebound of the hammer and substantially increased ramming rates.



## Job Scope:

- ❖ Trenchless Feasibility Study
  - ❖ Cost Estimate
- ❖ Trenchless Specification
  - ❖ Bid Assistance
- ❖ Input to Plan and Profile
  - ❖ Risk Analysis
- ❖ Specialized Construction Management



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