

Industrial Park Road Culvert Replacement at Goosefare Brook

Project Summary

Background:

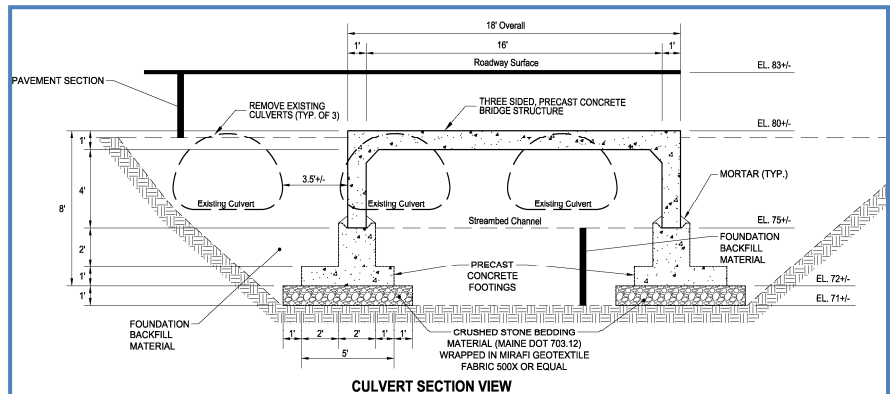
The existing culverts consisted of triple barrel, corrugated metal arch culverts (47" by 71") that were installed in the early 1980's. Based upon a culvert assessment, the culvert pipes were determined to be in poor condition. As part of the Goosefare Brook Watershed-Based Management Plan, this culvert crossing was identified by MIF&W as a fish barrier and recommended for replacement. Based upon the conditions of the culvert and scheduled MaineDOT paving project of Industrial Park Road (2018), the replacement of this culvert was included within the City's 2017 Capital Improvement Plan.

Construction Summary:

Industrial Park Road is a significant commuter route (AADT >20,000 vehicles) that provides access to the Maine Turnpike (Exit 36); therefore, the majority of the culvert replacement work was performed during a single weekend closure of Industrial Park Road (starting at 7pm on July 7th through 6am on July 10th). Final roadway and shoulder restoration work was completed during the following two weeks.

The replacement structure consisted of a 4' high by 16' wide three sided precast concrete bridge with precast concrete footings.

Woods Excavating LLC of Westbrook, Maine was the general contractor for the project. Working closely with Woods was Keeley Crane Services of Scarborough, Maine and American Concrete of Auburn, Maine.



Placement of the precast concrete footings and three-sided bridge structure was performed with the use of a crane as shown in the photo to the right.



As shown in the typical section above, the replacement structure included footings that extended to a depth approximately 4' below the existing stream channel. This required a substantial area to be excavated as shown in photo to the left.

The new natural stream channel lining material was placed between the footings as the three sided structures were being installed. Once completed, the contractor completed the culvert backfill operation and re-opened the roadway to vehicular traffic for the Monday morning commute. The construction project was completed on-time and on-budget.



Funding:

The original Engineer's Opinion of Construction Cost for the project was \$555,000. The City applied for and received funding support for this project from the MDEP (2016 Grants for Stream Crossing Infrastructure Improvements) and the MaineDOT (Municipal Partnership Initiative).

A summary of the final project costs is provided below:

Description	Cost
Survey	\$3,000.00
Geotechnical	\$4,500.00
Design and Permitting (By City Staff)	\$0.00
Drafting Services (General Engineering Services)	\$711.75
Quality Compliance Testing	\$1,148.10
Third Party Construction Inspection	\$7,660.26
Construction	\$386,984.05
Total Project Cost	\$404,004.16

A summary of the final project funding sources is provided below:

Description	Cost
MDEP - 2016 Grants for Stream Crossing Infrastructure Improvements	\$95,000.00
MaineDOT - Municipal Partnership Initiative	\$202,002.08
Local Capital Improvement	\$107,002.08
Total Project Cost	\$404,004.16