



## CASE STUDY:

# MONTANA – BIG SKY DEVELOPMENT

Montana DOT-Nemote Creek 12'diameter x 40' long section of the CMP culvert. Due to site constraints and apparent minimal change in the areas of deformation over the past seven years, the Department proposed to use SprayWall which is a procedure using a rigid spray-applied polyurethane lining to provide structural enhancement and corrosion resistance.

## SOLUTION

A Fully Deteriorated design was calculated due to the large bulge at the 10:00 position (looking downstream). Installation of SprayWall with a structural design of 500 mils, with 750 mils of SprayWall at bulge.

The project started in early Jan 2017, with the ambient temperature a mere 4° F. Not only having to overcome the subfreezing climate; during the preparation and drying the steel surface with heat, the surrounding soil around the culvert began thawing and subsequently the moisture in the soil began infiltrating through holes in the steel and at all the connecting steel plate bolts, which had to be stopped before the application could begin.

During the application of SprayWall, the several barrels of material had to be protected from freezing. The plus side of having to do the project in subzero temperatures, bypass of Nemote Creek was not required. The crew successfully performed the application after overcoming the harsh weather conditions, which included the heaviest snowfall of the year.

## RESULTS

Inspections such as pull testing, mil thickness and spark testing were performed with satisfactory results. Since the project was selected as an experimental application for a structural repair, the final result has not been published. The application will be evaluated over a five-year series of inspections as outlined: Installation/Construction Report, Semi-Annual Inspections/ Annual Evaluation Reports, Final Evaluation/Final Report



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