

Trenchless solutions are often a necessity when it comes to renovating culverts under railway lines and major roads. Even temporary closures create logistical problems that disrupt traffic and are detrimental for homeowners and companies.

When corrosion has severely damaged old concrete and metal pipes, companies turn to KWH Pipe to provide a solution. Weholite pipes are excellent culverts due to their corrosion resistance, light weight and ability to flex according to different ground loadings, such as heavy traffic loads.

After a meeting between members of the Canadian National Railway (CN) project department and the consulting firm UMA, approval was given to renovate a concrete box culvert under the main CN railway

line, near l'Épiphanie, in Québec, Canada.

In making their final choice, the specialists at CN considered not only the quality of Weholite products, but the fact that the installation of threaded Weholite, which creates a product with a smooth interior and exterior wall, could be performed safely without interruptions to the train timetable.

CN was able to maintain the productivity of its railway while avoiding the logistical problems resulting from the temporary closure of the railway. With a small work

Ideal solutions for roads and railways



force of only four men, the team completed the project in record time, which confirmed the ease with which Weholite pipe can be installed. Experienced personnel from KWH Pipe supported the CN Team on site during the process. CN voiced their satisfaction with this project to KWH Pipe and will be using the company in the future for renovating similar culverts along its railways.

LONG SERVICE LIFE

Canadian Pacific Railway (CPR) provides freight transport services in Canada and the U.S. CPR owns hundreds of miles of railway that crosses the rugged terrain and the agricultural regions of the province of Ontario. CPR maintains this railway through a variety of activities including an extensive culvert inspection programme. The culvert inspection programme enables the owners to determine the condition of the culvert and decide whether it needs to be upgraded.

In October 2005, CPR renovated two existing 800 mm corrugated steel pipe culverts located beneath their tracks by sliplining them with Weholite PE-HD structured wall pipe. Weholite was chosen for its long service life (Weholite is made from abrasion and corrosion resistant materials) and inherent resistance to the external loads and vibrations that railway traffic creates. In addition, the lightweight Weholite pipe minimized the impact on the environment, as the contractor was able to use light-duty lifting equipment.

Weholite's smooth outer wall and threaded joints ensured quick and easy insertion into the deteriorated corrugated steel pipe culverts. After installation, the annular space was grouted in order to fill the voids and to provide structural support. The culvert ends were left exposed as Weholite has lifetime protection against UV degradation. The entire construction process (from inspection to clean-up) took only four days to complete.



The culvert was sliplined with DN/ID 96 inch (approximately 2.4 m) Weholite. With a small work force of only four men, the team completed the project in record time.

MONTHS OF DISRUPTION SAVED

The residents of the village of Gates Mills, a quiet community just outside Cleveland, Ohio, were spared months of disruption to traffic and their village when Weholite was selected for their culvert renovation project. The existing 120 inch (approximately 3 m) corrugated metal pipe culvert was under more than 10.5 metres of cover and corroding badly. Open cut construction would have resulted in hundreds of haulage trucks going in and out of the community, affecting the private property of homeowners and the general safety of the village.

The culvert was sliplined with DN/ID 96 inch (approximately 2.4 m) Weholite. Weholite was selected for its ease of installation, abrasion resistance and lon-

THE LIGHTWEIGHT WEHOLITE PIPE MINIMIZED THE IMPACT ON THE ENVIRONMENT.

gevity. According to the Chief Bridge Design Engineer, "The Weholite structured wall PE-HD Pipe solved most of the design and construction challenges that this project presented. After spending a lot of time exploring other rehabilitation and replacement alternatives, we could not find another solution that matched the constructability, material and cost benefits provided by your product."

The project was completed in six weeks at a third of the cost of open-cut construction and in less than half the time. ●