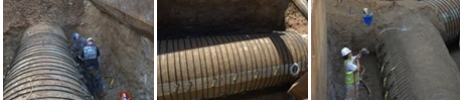




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Louisville PCCP External Pipe Repair

The Louisville pipe repair project involved the external wrapping of Prestressed Concrete Cylinder Pipe (PCCP) using external monostrand post-tensioning cables. The pipes had suffered steel loss, not allowing them to withstand internal water pressure. The owner had identified 4 spools at 16-foot and 20-foot long that needed strengthening. The scope included the PT design and shop drawings, with a PT cable every six inches along the pipe in the final design.

Each cable was covered with corrosion resistant grease and then wrapped in a PE sheathing to protect the cable from long-term corrosion. The cables were then connected to the steel liner of the pipe using a galvanized plate that extends the length of the pipe and provides cathodic protection. With each cable stressed to around 40,000 lbs of load, the anchorages were staggered around the circumference to balance the load. The final step was to cover the pipe and the cables with 3-inches of fiber reinforced shotcrete. A shotcrete cradle providing 5,000 psi of strength was also installed under the pipe for support. Once the shotcrete was cured, the pipe was covered with a blue colored sheet to identify and protect it from future excavations.

Construction on one pipe was completed in one week in February 2013.

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