

CITY OF LUFKIN LUFKIN, TX



CHALLENGE

A Triple Barrel Box Culvert approximately 110 LF was constructed on the west end of a retention pond on the east side of Lufkin. The TBB culvert ran through the levee and was constructed at an area of the retention pond that had previously been a riverbed. Approximately 90 days after the construction was complete and some heavy rains had occurred 70 to 80 LF of the TBB culvert settled as much as 12 inches at the lowest point.



SOLUTION

Superior was contacted by the City of Lufkin to provide a repair method. The city engineer's biggest concern was to stabilize the box culvert from any further settlement. Soil testing was performed, and it was determined that the soils beneath the TBB culvert were loose to a depth of 5 FT. Superior proposed utilizing the injection of High-Density Polyurethane. 5/8 inch holes were drilled through the 12 inch thick concrete TBB culvert and an additional 5 FT into the soils. The holes were drilled on a grid pattern 6 ft on center. HD Polyurethane was injected at each location until refusal was received out of an adjacent drilled hole or received moisture through the stress cracks that the settlement created. All during the process monitoring the TBB culvert elevation. Pre-job and post-job elevation readings were documented.

PROJECT SUMMARY

- » Stabilized the triple barrel box culvert and soils beneath to a 5 FT depth
- » Injected approximately 28,000 pounds of High-Density Polyurethane
- » The City of Lufkin monitored the TBB culvert for the following year for any movement and no movement was detected

