

# Last-Minute Repairs for Indians' Home Opener

The Cleveland Indians started their 2005 season on the road taking on the Chicago White Sox at Comiskey Park in April 4. While they were away, the residents of Cleveland saw the weather change from 71 degree and sunny to 3 in. of snowfall and back again. So when the Indians returned for their 2005 home opener, no one knew what to expect.



But in addition to the weather, there was another variable affecting the success of the first Tribe game in Cleveland this year. Just across the street from Jacobs Field, a deteriorated 80-year-old, brick, sewer manhole servicing the stadium had collapsed on Feb. 8, creating a sinkhole in the intersection of Ontario and Eagle Avenues.

Although sewer flow through the manhole was never interrupted, the manhole collapse created a traffic issue by forcing the closure of two lanes on Ontario Avenue. The brick manway and the surrounding road surface, located directly across the street from Jacobs Field and the Cleveland Indian's administrative office, needed to be repaired before

the Indians threw their first pitch in Cleveland, at 3 p.m. on April 11.

Inland Waters Pollution Control Inc. (IWPC) based in Detroit, was given the assignment to fix the failed manhole and surrounding roadway. IWPC prepared a design that would allow repair of the damaged structure instead of a total replacement, an approach that would save both time and money, if it could be successfully implemented.

"It took a while to get to the point where everybody agreed who had control, who was going to approve the plan and then what plan was going to be approved," said Tom Nolan, IWPC project manager. "It was finally decided to proceed with a design to repair the damaged structure because to replace the manway would have involved re-routing of existing utilities and substantially greater disruption to the traffic flow on Ontario Avenue."



However, in the time necessary for the design approval process, the structure had continued to degrade. The hole in the lateral pipe had actually expanded by more than 200

percent since it was first discovered. Additional movement of the existing pipe had caused the pipe to drop even further from where it had initially cracked. Degradation of the exposed brick sewer pipe was primarily a function of the frost and thaw cycle encountered during the late winter months.



On April 3, Inland Waters and its manhole rehabilitation sub-contractor, Lee Infrastructure Restoration Inc., of nearby Solon, Ohio, began repairing the structure. Lee Infrastructure enlisted Spray Com Utilities Inc, of Sedalia, MO., a Permaform/Permacast Licensee, as their sub-contractor, to aid them in the repair of this project. Lee Infrastructure Restoration was contracted to install three, 20 ft. long, cured-in-place (CIP) liners to repair the three brick sewer lines that tie into the damaged manhole. The manway was then to be rebuilt using Permaform cast-in-place technology by Spray Com Utilities Inc.

The main challenge was the repair of the 91-in. tall, egg-shaped, brick sewer lateral that ran from Jacobs Field to the

failed manhole. From the time the failure was first uncovered in early February 2005, the hole had expanded continuously.



When the work began, there was a 6-ft by 12-ft hole and the pipe had cracked and settled several inches, further compounding the repair. The crew from Spray Com Utilities Inc had to carefully winch the 20-ft long CIP point repair into place with out further damaging the sewer pipe.



A further issue was the infiltration of the CIP liner to the required pressure of 4 psig. Spray Com Utilities Inc had to continuously monitor the remaining brick sewer to ensure the infiltration of the liner did not result in complete failure of the brick pipe. The



liner in this damaged pipe was installed without incident and the main obstacle to this repair was past. Spray Com Utilities Inc then steam-cured the resin for four hours to form a pipe where no carrier pipe had existed.

“We looked at the situation and thought that it might work to take an old technology and give it a little bit of a different application, a little different twist. We submitted to the City and decided to give it a try,” said Jim Grubaugh, project manager for Lee Infrastructure Restoration. “That was the unusual thing about this project – it wasn’t just cut and dry.”



Another minor problem was that the new CIP line didn’t completely seal into the egg-shaped design of the original host pipe. Spray Com Inc resolved that by pressure grouting the annular space, which also ensured that no air pockets were left in that pipe that might cause settling. After all three CIP liners had been installed, Spray Com Utilities Inc used Permaform technology to cast-in-place a new manhole

over the cured-in-place pipes to complete the rehabilitation of the manhole.



By opening day, crews had finished paving the road by 10 a.m., striping was done by noon and city engineers were conducting their final inspection while the National Anthem was being sung. “The [Indians] home-opener wasn’t an issue when we first went through the approval process, but I think the City was very pleased that we were gone and the road was fixed before the opening game,” Nolan said.

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