

A BIG BURST

A pipe-bursting system with a 60-ton ram enables replacement of a hotel's 8-inch, cast-iron sewer lateral

By **Scottie Dayton**

Through June and July 2005, the 12-story Riverside Marriott hotel in Riverside, Calif., suffered chronic sewer backup problems.

ARS Rescue Rooter of Riverside had the hotel's account and responded. When technicians could not correct the problem, hotel general manager Tom Donahue conferred with chief engineer Edgar Aguilar, then asked ARS to inspect the 8-inch, cast-iron lateral.

The camera, often underwater, revealed erratic but heavy corrosion, a rotted invert near the street, and too much collapsed pipe to warrant relining. The decision was made to replace the entire 160-foot line from its connection point with the municipal sewer.

"Excavating and installing new pipe would shut down the hotel for too long," says ARS project manager Curtis Ramsey. "A wedding was scheduled for the following weekend, and the hotel wanted the line replaced by then. Pipe bursting was our best solution." ARS got the job done on time with a pipe-bursting system and 60-ton ram from TRIC Tools Inc.

Straight to work

ARS did not have pulling equipment large enough to burst an 8-inch line, so the firm subcontracted with TRIC Tools Inc. of Alameda, Calif. On a Monday,



This pulling assembly was used to burst the old pipe.

Ramsey and his crew excavated a 7- by 10- by 2-foot entrance pit behind the hotel loading dock near the sidewalk and established temporary connections to handle the residual flow.

All vertical and horizontal drainage lines converged with the lateral outside Donahue's office in a six-foot-wide hallway. "Most of the lateral ran in a straight line under the foundation, beginning upstream at our pulling pit in the hallway, and ending at the property line, which was the entrance pit," says Ramsey. "The entrance ramp-down was quite steep for an 8-inch pipe, and the



A technician drives in an I-beam as part of the foundation for the pull.

lateral took an immediate 45-degree bend to the municipal main."

Before digging the 4- by 6- by 6-foot-deep pulling pit in that hallway, the men peeled back the carpet and taped protection onto the walls and floor. They X-rayed the concrete to make sure no post-tensioning cables were present, then attacked the 4-inch-thick concrete and wire rebar with jackhammers and shovels.

Sand was piled in the hallway. Using sledgehammers, they drove two 6-inch I-beams four feet into the ground to shore up the hole. Wood beams, 6- by 6-inch, spanned the steel and received the resistance plate, giving a solid foundation against which to pull.

"We couldn't get large equipment inside the hotel. Everything had to be carried in by hand," says Ramsey. John Rafferty and his TRIC team arrived Tuesday to fuse 200 feet of 8-inch SDR17 high-density polyethylene pipe. It lay alongside the sidewalk while prepara-

A technician fuses sections of 8-inch SDR17 HDPE pipe.



TOUGH JOB

PROJECT:

Replace a hotel's 160-foot cast-iron sewer lateral with minimum business disruption

CUSTOMER:

Riverside Marriott, Riverside, Calif.

CONTRACTOR:

ARS Rescue Rooter, Riverside, Calif.; TRIC Tools Inc., Alameda, Calif.

EQUIPMENT:

TRIC 8-inch, static pipe-bursting system with 60-ton ram

tions continued through Wednesday, and another active tie-in was discovered and excavated near the loading dock.

Pull away, lads!

At 8 a.m. on Thursday, the water in the hotel was shut off. By midday, it had mostly stopped draining, and Rafferty's crew launched the 14-inch-long, 11-inch-diameter static bursting head. It was supposed to travel underneath the loading dock, kitchen, lobby and restrooms before popping up in the hallway. "We were pulling upstream, so water ran down the line to reduce friction against the head and soften the earth," says Rafferty. The head covered 40 feet and stopped just inside the building's foundation.



At left, the Riverside Marriott Hotel. Below, a section of the corroded pipe.



Baffled, Ramsey's team excavated into the evening to uncover the problem. The pipe, bedded in sand, had a standard no-hub coupling with stainless steel bands inside a larger, thick PVC sleeve. The sleeve had corrugated and expanded

instead of breaking. The men worked through much of the night cutting away the sleeve and freeing the head. That area of the pipe had been under water during the initial inspection.

"First thing Friday morning, we started

pulling again," says Rafferty. "Everything went fine for another 100 feet. We then hit a second PVC sleeve by the bathrooms. With the pump and 60-ton ram at their maximum output, the I-beams at the exit hole bent and twisted like licorice, and the wood beams were crushed."

Replacement I-beams were quickly located while Ramsey's crew excavated

the sleeve and freed the head. Rafferty's crew then drove a second pair of steel beams next to the failing ones, reset the shoring, and the pull continued. However, the lengthy delay in resuming water and sewer service forced the hotel to relocate numerous guests, including the wedding party.

Back in service

Pulling the last 25 feet required more than 40 tons of force and caused some pipe stretching, even though the entire run contained no bends other than the entry. The new I-beams also began to shift. "We finished a little after 11 p.m. Friday," says Rafferty. "The ARS team showed up at 6 a.m. Saturday and had the connections reinstated and water flowing by 11 a.m."

They cut off the steel beams at ground level with an acetylene torch, removed them, bedded the pipe and backfilled the holes. It took days to patch everything. Still, it was better than having to excavate the entire length of pipe — and far less disruptive to the hotel's business. ■

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Cleaner

December 2005

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1720 Maple Lake Dam Rd.
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Three Lakes, WI 54562
800-257-7222
www.cleaner.com