

Large Diameter Sliplining & Large Diameter CIPP work together to rehabilitate aging interceptor sewers in Albuquerque, NM

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Albuquerque, NM has the same problem as many municipalities throughout the United States and that is old, aging and failing interceptor sewerlines. However, this time the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) took a proactive approach in addressing this problem rather than a reactive approach. It has been common in the past to respond to a sewer collapse, usually on a Friday night, which requires the isolation of the area, major traffic set up and begin to by-pass pump the sewer. When an emergency collapse of a interceptor sewer failure happens, the cost associated are usually a lot higher than a planned sewer rehabilitation project.

In December 2008 the ABCWUA took bids on a Large Diameter Sewer Rehabilitation Project for the rehabilitation of interceptor sewers. AUI, Inc out of Albuquerque was the successful bidder on the project. The project consisted of two trenchless rehabilitation methods called Sliplining and the cured in place process (CIPP).

SLIPLINING

The first trenchless rehabilitation method used was sliplining. The project specifications were to slipline 78", 54", 48" & 27" RCP. AUI used two different pipe manufactures to accomplish the sli-

plining. The 78", 54" & 48" old RCP pipes were sliplined with the CCFRPM manufactured by Hobas pipe and the 27" old RCP was sliplined with PVC manufactured by Lamson Vylon Pipe.



Figure 1 - 66" CCFRPM Hobas slipped into existing old 78" RCP

The biggest interceptor that was sliplined was the 78" RCP which was sliplined with 66" Hobas pipe (fig. 1). The total footage of 78" RCP that was rehabilitated was 5,234 lf. One of the most difficult jobs in this slipline process was to clean and remove all the silt from inside of the old 78" RCP. AUI subcontracted the cleaning operation to Southwest Sewer Inc. Southwest Sewer removed and hauled to the sewer plant over 1,000 tons of debris that has been laying in the old 78" sewer line. All of the slipline work was done under live conditions without the need for by-pass pumping.



Figure 2 - CCFRPM Hobas Pipe with TeeKay Couplings at Insertion Pit

The 54" sewer interceptor line was rehabilitated with a 48" Hobas pipe. The total footage of 54" RCP that was rehabilitated was 1,210 lf. This section of interceptor line was located in downtown Albuquerque and thus traffic, pedestrians and business owners were all stakeholders in the construction process. The ABCWUA project manager was Nancy Musinski P.E. 505-768-2729. The work downtown went smoothly and was completed in less than a month.



Figure 3 - 44" Hobas CCFRPM at job-site to be slipped into existing 48" RCP

The 48" sewer interceptor was sliplined with 42" Hobas pipe (fig 3). The total footage of 48" RCP

that was rehabilitated was 2,209 lf. This section of interceptor was originally installed in 1966 and the pre CCTV inspection revealed extreme exposed aggregate with hanging gaskets.

The alignment of sewer line ran through the City of Albuquerque's Solid Waste Yard. One segment actually ran under a service building, therefore open cut was not an option.



Figure 4 - 24" Vylon Pipe slipped into existing 27" RCP

Lastly, the 27" RCP was sliplined with 24" Vylon pipe (fig. 4). The total footage of 27" RCP that was rehabilitated was 3,940 lf. The sections of 24" RCP were also severely deteriorated with the crown of pipe totally gone and soil was exposed. Pre CCTV inspection revealed a total of three active sewer services which were reconnected at depths of up to 18 feet.

CIPP

Cured in place pipe was used to rehabilitate 48", 36", 30", 18" & 12" RCP. AUI's subcontractor to perform CIPP operations was Western Slopes Utilities out of Breckenridge, CO.



Figure 5 - 48" CIPP installed into existing 48" RCP

The total 48" RCP that was Cured In Place was 3,772 lf (fig. 5). The sewer line was by-passed with 100% back up pumps in order to allow the CIPP process to proceed. Over 5,300 lf of 18" HDPE was used as the discharge line to support the by-passing of the sewer line. The 48" sewer line snaked through backyards of residents and business. One man-hole was located in a homeowner's property.

The 30" RCP line that was Cured In Place was a siphon that ran under a major storm drain concrete channel. The depth of the sewer line was in excess of 25'. The 30" siphon had to be dewatered and the cleaning operations became a different animal. AUI subcontracted out the siphon cleaning to Pro Pipe

Services out of Phoenix, AZ. Pro Pipe used a special chain and nozzle combination to break up the grease that was caked on the pipe. The jetter spun the chain to dislodge the grease buildup and clean the inside of the siphon. After the siphon was cleaned and dewatered, the Cured in place process was completed and flows were returned to normal.

The 12" CIPP took place under Interstate 40. Interstate 40 runs East/West through Albuquerque and the old sewer line cut across the interstate at a depth of 14 feet. By-pass pumping was accomplished through a series of storm drains under the interstate so the CIPP process could proceed. Once the sewer line was bypassed the CIPP was installed in 6 hours.

Western Slopes Utilities installation crews worked productively and efficiently to accomplish the CIPP work on schedule.

In conclusion, over 18,000 lf of both Sliplining and CIPP were used as successful trenchless methods to rehabilitated Albuquerque's aging interceptor sewerlines.

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