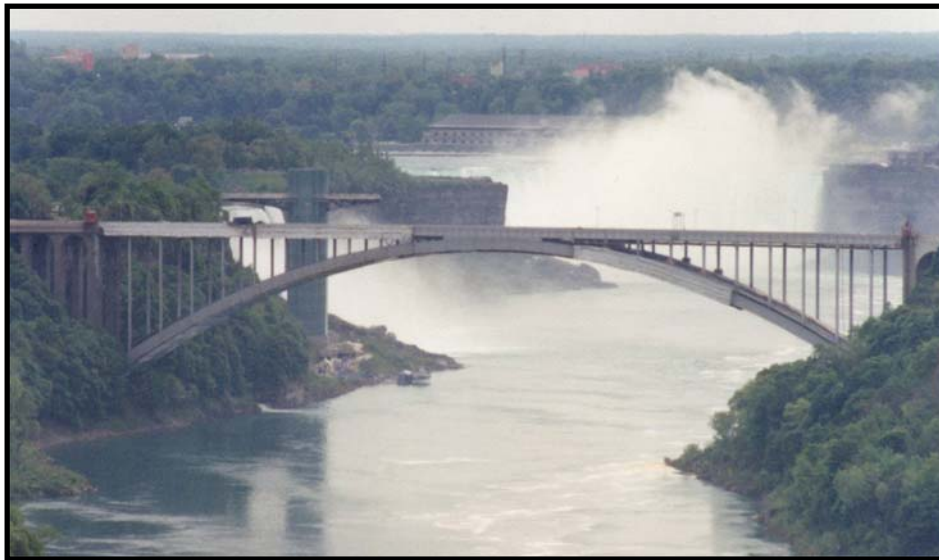


Thompson Pump and ITT Flygt Combine In Large Sewer Bypass Over Niagara Falls Gorge

Thompson Pump Midwest offered utility contractor The Drain Doctor an alternative bypass system design using Thompson high pressure and trash pumps, and ITT Flygt submersible pumps, resulting in a significant time and cost savings for the project.



The bypass project was downstream from the famous falls.

The Drain Doctor was about to begin work on a sewer bypass in Niagara Falls, NY, along a major gorge downstream from the falls. Sewer and storm lines had filled with silt and debris, causing the lines to rise above the weir wall level and overflow into the gorge below. Approximately one half mile of sewer line was to be bypassed so it could be emptied of the silt and debris.

The original design for the bypass, as proposed by a competitive pump company, called for running the bypass pipe through the wooded land above the gorge, and suspending a section of pipe from a bridge over the gorge. Thompson Pump Midwest immediately saw the difficulties in such a design and proposed using a pedestrian walkway on the bridge that was to be closed during the sewer tunnel construction anyway. Brian Lenaghan, president of Thompson Pump Midwest, made the recommendation to John Brundage, project supervisor for The Drain Doctor. When Brundage accepted the proposal, it meant a savings of thousands of dollars in cost and weeks in time.

The bypass began at an interceptor near the treatment plant just off of the gorge, continued over a traffic and pedestrian bridge spanning railroad tracks and ended underneath the bridge, where the bypassed sewage would re-enter the sewer line. The total length of the bypass was over 6,100 feet, with a potential flow of 10.9 million gallons per day (mgd).

Lenaghan, with assistance from Bob Jacobs - sales person for ITT Flygt in Rochester, NY; Robert Hennessy - Thompson Northeast Regional Manager; and Louis Fabregue - Thompson New England Job Site Pumpologist[®]; coordinated the delivery of pumps and accessories. Equipment delivered included the four Thompson Pump units, four ITT Flygt submersibles, portable electric generators, suction hose, high density polyethylene pipe (HDPE), various connections, bends, manifolds and valves, plus a fusion machine for the HDPE pipe.

The system design submitted by Thompson Pump Midwest provided for pumps at four stations along the bypass. A combination of high pressure, trash and submersible pumps was recommended, with the two trash pumps enclosed in sound reduction canopies to keep noise levels as low as possible under the bridge, where sound reverberated off the bridge structure. The proposal was as follows:

Pump Location #1 (Drop Shaft 14)

2 - 90 HP Flygt submersible pumps were inserted through the contractor-supplied bulkhead upstream. One unit was used as the primary pump accommodating the specified flows of 3.4 mgd with the second being used as a 100% back-up. Each pump discharged through 12" HDPE to the surface and bent 90 degrees into an alternate manhole. The flows continued through a 30" line flowing under the parkway to Pump Location #2. Both units were powered by individual 400 Kw generators.



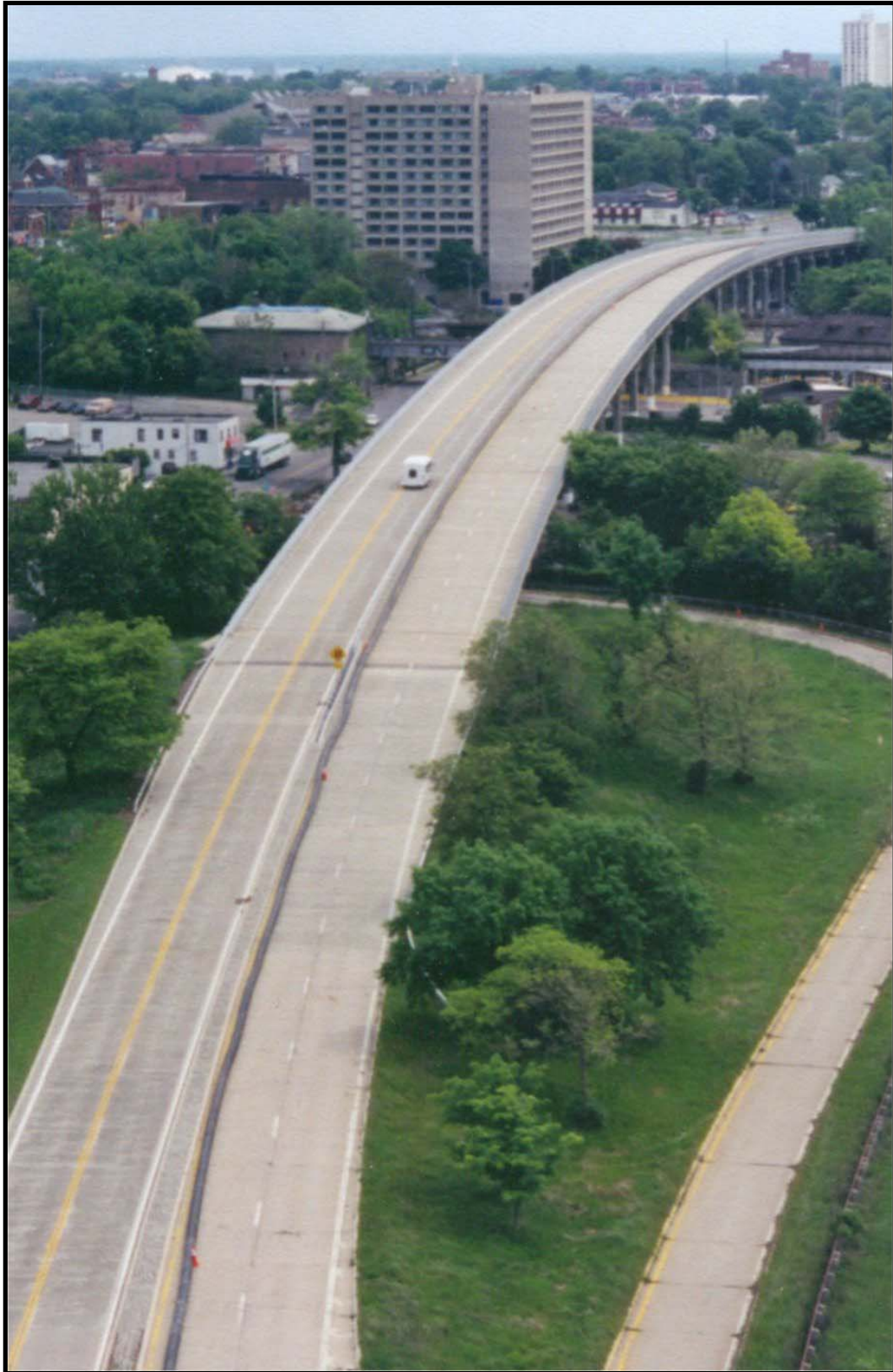
ITT Flygt submersible pumps are lowered into the manhole.

Pump Location #2 (Staging Area 3)

2 - Thompson 12JSC High Pressure Solids-Handling 12" pumps were utilized to accommodate the specified flows. One pump was used as a primary unit for flows of 5.8 mgd, with the second offering 100% back-up. Each 12JSC had 12" HDPE Suction and discharge lines flanged directly to the pump. Both 12" discharge lines were flanged into a common manifold (2 @ 12" x 1 @ 18"), allowing flows to continue through a single 18" HDPE line, which ran across the traffic and pedestrian bridge.



Thompson 12JSC high pressure solids handling pumps



Nearly 1-mile of 18" high-density polyethylene (HDPE) pipe spans the bridge along the center of the bridge.

Pump Location #3 (Drop Shaft 10)

2 - 30 HP Flygt submersible pumps, with one unit used as the primary pump accommodating the specified flows of 0.9 mgd, and the second being used as a 100% back-up. Each pump discharged through 12" HDPE to the surface and then tied into the main 18" header pipe. Both units were powered by 150 Kw generators.



The bypassed sewage re-enters the main line.

Pump Location #4 (Under the Bridge)

2- Thompson 6" Silent Knight® sound attenuated trash pumps. The lower sound levels of the Silent Knights® were desired because the units were located under the bridge, causing an echo. The first unit handled the established flows of 0.8 mgd, and the second unit was used for 100% back up. Both pumps discharged through 6" Thompson galvanized steel pipe flowing into a common line and continued through a connection established at the main 18" header line. At this point, the main 18" line ran south bound 3,320 ft. on the east side of the parkway to the established discharge point.

Once the system was connected, tested and inspected, pumping began full time, weeks sooner than if the original competitive proposal had been accepted. Of additional value to The Drain Doctor was the fact that Thompson Pump Midwest was able to provide all of the portable engine-driven pumps, submersible pumps, piping and accessories necessary for the bypass as a single supplier. Pumping was expected to continue for 4-6 months.