



### **NTH'S VALUE ADDED**

Multi-disciplined team –  
cost-effective services

Innovative top down construction –  
minimal traffic impact

Services from investigation/study  
through design/ construction –  
reduced schedule and costs

## **Southfield Sewer**

### **Engineering Services**

The Southfield sewer was constructed as a 10-foot diameter tunnel in 1929. The facility is a major interceptor sewer which provides sanitary and storm water collection for an 11 square mile area of the City of Detroit and an 80 square mile area of the Evergreen- Farmington Sewer District. Along much of its alignment, the sewer underlies the Southfield Freeway (M-39), the busiest road in the State of Michigan.

Detroit Water and Sewerage Department retained NTH Consultants to inspect the entire Southfield sewer because previous discrete inspections suggested potential problem areas. Following this inspection, NTH designed and implemented a repair plan for the 2,500-foot area of distressed tunnel. Design and construction had to accommodate ongoing flow in the sewer and traffic on the freeway.

NTH developed several alternatives for permanent repair of the sewer. Connecting the bypass tunnel to the upstream and downstream ends of the flowing sewer below the freeway required innovation. The DWSD/NTH team selected the "top down" method of construction within the freeway lanes. The 3700 lineal foot by-pass sewer was tapped into the existing sewer upstream and downstream of the distressed area. Using the top down construction sequence, the freeway was closed only during weekend periods. Construction continued below ground while traffic continued overhead unimpeded.

The project was completed on time and within budget. Sewer flow and traffic remained uninterrupted during construction activities.

This project was recognized for innovative engineering by ASCE, ACEC, ESD, MSPE and NSPE in 1999.