

# Point Loma Outfall Emergency Repair, San Diego, CA



First replacement concrete pipe section during lowering with "horse" at Point Loma.

#### Services Performed:

- Constructibility
- Concrete Mix Design

Year of Completion: 1992

Construction Cost: \$10M

Client: City of San Diego, CA

The City of San Diego, California discharges its treated sewage effluent through a ten ft diameter outfall sewer extending 17,000 ft to deep water in the Pacific Ocean. Construction of a 13,000 ft long extension to 300 feet water depth is currently starting.

An unusual storm, on February 2, 1992 with extremely long period swells (about 2022 seconds) on which local wind waves were superimposed caused a breakage in the existing line near the shore where the water depth was only 35 ft. Eight sections of concrete pipe were tossed aside by the waves. The effluent was discharging in an environmentally vulnerable area, causing shutdown of many miles of beaches during the tourist season as well as prohibition of commercial and sports fishing in the area.

An emergency engineering design contract was entered into by Parsons En-

gineering Science, Inc. who had just completed the design of the seaward extension of this outfall. An emergency construction contract was let to a joint venture of Morrison-Knudsen Co. and Manson Construction Co. who not only did a highly creditable job in the reconstruction but were successful bidders on the extension when it was bid a month later.

The most difficult part of the reconstruction was the closure which had to connect the replacement section to the existing line. Engineering Sciences, Inc. assisted by Dr. William Buehring and Ben C. Gerwick, Inc. as subconsultants, devised a telescoping double sleeve of steel, which was slipped over the existing line and filled with a special concrete mix.