Massachusetts Water Resources Authority
Contract No. 282

EFFLUENT OUTFALL TUNNEL PROJECT

CONTRACT AWARD

- General Contractor: Kiewit/Atkinson/Kenny
- Contract Value: Approx. $202,000,000
- Notice to Proceed: August 1990
- Contract Completion: March, 1995

CONTRACT DESCRIPTION

The Work consists of the construction of a 30 foot diameter concrete lined shaft 420 feet deep on Deer Island in Boston Harbor. The top 110 feet of the shaft is excavated through overburden utilizing slurry walls for a support of excavation, and the bottom 310 feet is excavated through bedrock, by conventional drill and blast techniques. At the bottom of the shaft a starter and tail tunnel were also excavated by drill and blast methods to accommodate the assembly of a Tunnel Boring Machine, which is used in the excavation of the 9.5 mile long outfall tunnel under Massachusetts Bay. The 24 foot diameter tunnel is lined with a six piece precast segmental liner affixed in place by grout.

The actual discharge of treated effluent is through a system of diffusers, which consists of more than fifty, 30 inch diameter pipes that rise to the seabed over the last 6,600 feet of the tunnel's length. Each pipe connects to a diffuser cap which splits the flow into several streams, each issuing from a small port. The purpose of the diffuser is to assure that the maximum practicable dispersion and dilution is achieved for the wastewater flow.