

# MUNI Turnaround, San Francisco, CA

Under the lead of Bechtel Civil Company, Ben C. Gerwick, Inc. performed detailed redesign of end bulkhead drum to allow safe interfacing between the compressed air shield tunneling operation and required portal at end bulkhead of the LRT subway station. The 50 ft SPTC structural slurry wall system retains the soft recent Bay muds of the San Francisco Bay and up to 45 ft of hydrostatic pressure. The original design had soldier piles piercing the 36 inch wide drum. The arrangement was improved by designing the drum to span the full tunnel face between reinforced soldier piles.



Excavations shared using "soldier piles and tremie concrete" (SPTC) Method.

## Services Performed:

- Slurry Wall
- Bracing System
- Seal Slab Piling
- Constructability Studies

Year of Completion: 1996

Construction Cost: \$90M

Client: City of San Francisco

Ben C. Gerwick, Inc. re/detailed the drum to fit outside the piling and increased the pile weights to allow a thinner section to still fit inside the 36 inch slurry wall trench. All edges and stiffener plates external to the drum were oriented to prevent entrapment of slurry in voids during tremie concrete placement.

The construction sequences and grouting around the tunnel crown were modified to ensure adequate support and minimize damage to grout during demolition of the slurry wall bulkhead portal. The start of the compressed air shield tunneling proved successful, and tunneling proceeded as originally planned.

