


TUNNEL NAME/LOCATION/DATE COMPLETED: 63rd Street Tunnel; New York City, New York, U.S.A.; 1973			T.44 - 63rd Street 	
TUNNEL TYPE AND USE: Single-shell steel elements; Railway and subway		LANES/TRACKS: Four tubes; one track in each. Two NYC transit tracks over two Long Island Railroad tracks.		
NO OF ELEMENTS: 4	LENGTH: 114.3 m	HEIGHT: 11.2 m	WIDTH: 11.7 m	
TOTAL IMMERSED LENGTH: Two tunnels, each 229 m long		DEPTH AT BOTTOM OF STRUCTURE: 30 m		
UNUSUAL FEATURES:	Only two-over-two tunnel ever constructed. Actually two separate tunnels: one section between New York City and Welfare Island, and the other between Welfare Island and Brooklyn. The ends of each tunnel section were tremied into slots blasted into the rock shores. Once in place, the four ends of the two tunnels were accessed by mining to them. Tunnel was constructed in very strong current conditions.			
ENVIRONMENTAL CONDITIONS:	Very swift current of 2.7 m/s (5.2 knots)			
FABRICATION METHOD: Rlverside shipyard at Port Deposit, Maryland; uncontrolled side-launch.		OUTFITTING: At dockside in Norfolk, Virginia, and towed to New York with full draft.	JOINT TYPE: Tremie concrete joints	
WATERPROOFING METHOD:	Continuous steel shell; cathodic protection			
PLACEMENT METHOD:	Placed from straddling catamaran barges.			
FOUNDATION METHOD:	Screeded foundation consisting of large (15 cm) stone was used due to high current velocities in the East River.			
DREDGING METHOD:	Barge-mounted excavators			
VENTILATION TYPE:	Train piston action.			
COVER AND TYPE:	1.3 m riprap over 9 m of crushed stone			
ADDITIONAL INFORMATION:	OWNER: Metropolitan Transportation Authority and the New York City Transit Authority DESIGNER: Parsons Brinckerhoff Quade & Douglas Inc CONTRACTOR: Joint Venture: Kiewit-Slattery-Morrison Knudsen			