Above left: Tight site; maintaining one lane of traffic during construction. Lower left: TBM holing through at Shaft 6. Above right: Between shoves at Shaft 5.

Steam Lines Avenue C and 11th Street (Con Ed Steam Tunnel Connections)

New York, NY

Con Edison is constructing a new line to provide steam from the East River Plant to its customers in midtown Manhattan after the Waterside Plant is taken out of service. Part of that line must cross beneath two streets on Manhattan's Lower East Side. To minimize disruption of the traffic and utilities, Con Edison elected to install the line by microtunneling beneath the street.

Mueser Rutledge Consulting Engineers (MRCE) designed a 5-foot-diameter, 2300-foot-long microtunnel, access shafts adn manholes for the project.. MRCE also performed a subsurface investigation to determine subsurface conditions at the shaft locations. The microtunnel invert will be about 18 to 20 feet below street grade and will cross beneath large sewers and numerous smaller utilities.

The design included requirements to limit groundwater and to protect adjacent buildings during driving of sheeting for 25 ft. deep shafts for tunneling, expansion valves and pipe anchorage. Building monitoring extended from driving of sheeting at shafts through tunnel mining.