

IN DEPTH

July 2011

BRIERLEY ASSOCIATES, LLC

Creating Space Underground

Brierley Associates is Busy in the Big Apple

Brierley Associates has recently completed and is currently involved in a number of exciting projects in New York City. AJ McGinn, Chief Operating Officer, and Todd Kilduff, one of Brierley's senior project managers, have successfully helped Brierley Associates gain a piece of the tunneling action in the Big Apple. The following is a brief overview of some of our recent assignments.

HARLEM RIVER TUNNEL

Brierley Associates was retained by the Contractor, Kiewit Eastern, to review the geologic conditions of the area, to design the initial rock bolt and lining support system for two shafts, and to perform a review of the planned support system for the tunnel. In order to accomplish these tasks Brierley Associates performed a wedge stability analysis and provided recommendations for rock bolt spacing, shotcrete thickness, and excavation sequencing to be utilized by the Contractor. In addition, Brierley Associates provided the support of excavation design for the ancillary structures through the overburden soils.

7-LINE SUBWAY, SITE J



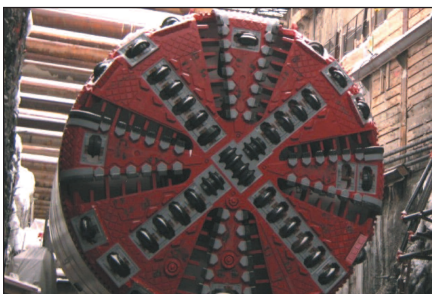
Brierley Associates has been retained by Yonkers Contracting Corporation (YCC) to design the initial rock support system for several drill and shoot excavations. Two inclined tunnels and a deep ventilation shaft are being advanced through granite and mica schist bedrock. An initial support system utilizing resin anchored steel and fiberglass rock dowels and shotcrete lining is being utilized. Our staff is supporting YCC in the field by providing tunnel engineers to establish ground classification and identify the associated required support type, and to observe the drill and shoot tunneling and the installation and testing of the rock dowels. Brierley Associates has been available to provide an immediate response to issues arising from the challenging ground conditions.

2ND AVE. SUBWAY, 72ND ST. STATION



Brierley Associates was retained by SSK, a Joint Venture of Schiavone, Shea, Kiewit, to perform a pre-bid study of the rock support system detailed in the contract documents for station mining and to provide recommendations for an alternate bolting-spacing pattern and shotcrete lining. In order to assess the rock mass quality within station areas and the potential for ground water inflows Brierley Associates reviewed geologic data provided in the GDR, GIR, and GBR as well as the technical specifications and contract drawings prepared by AECOM. Following our geologic assessment, we performed a wedge stability analysis and provided recommendations for rock bolt type and spacing, shotcrete thickness, and excavation sequencing to be utilized by the Contractor.

EAST SIDE ACCESS CQ-03 I



Brierley Associates supplied staff support for the construction management team led by URS. Brierley Associates provided oversight of the assembly and testing of the TBM manufactured by Herrenknecht. Our senior tunnel Inspector provided both full-time oversight of the assembly and field observation to confirm that the TBM was designed and erected in conformance with the project specifications and drawings.