

T&T North America News

Beacon Hill prequalifiers

Three groups have prequalified for the design-bid-build Beacon Hill underground section of the 14-mile, initial segment of Seattle's Sound Transit LRT. The groups are the Kiewit/Traylor/Frontier-Kemper/Beton-und Monierbau JV; Obayashi Corporation; and the Impregilo/SA Healy/Alberici/Parsons Transportation group. A due date for bids is set for late April with award of contract and notice-to-proceed in June 2004.

The contract comprises twin 4,300ft (1,300m) long EPB-bored running tunnels and a deep underground NATM/SEM (sequential excavation method) mined station connected to the surface by high-speed elevators in a large 175ft deep x 56ft o.d. (53m deep x 17m o.d.) shaft. Also included is an adjacent aerial station.

Final design of the design-bid-build underground station by Hatch Mott MacDonald/Jacobs JV and specialist NATM/SEM subconsultant DSC, is based on data acquired from the \$1.7 million geological investigation shaft contract completed over summer 2003 by Frank Coluccio Construction Co (T&TNA, May 2003, p10). The test shaft started as an 18ft diameter SEM excavation for the first 100ft and



Interested parties were provided access to the test shaft construction

changed to a 6ft diameter augered and cased excavation to 150ft when water ingress through waterbearing sands increased. The station will be one of North America's deepest excavations in soil. The geology comprises alternating glacial deposits of waterbearing sands, wet silts, and layers of impermeable clay and tills. Dewatering wells will lower ground water pressures in two distinct layers of waterbearing sands prior to start of excavation.

As a result of the test shaft's comprehensive program of monitoring, various revisions to the original design have been made. Central to these is a change from the proposed SEM excavation of the station's two shafts to instal-

ling full depth slurry walls for primary shaft support. In addition a program of jet-grouting has been incorporated to condition complex and potentially flowing sandy soils in the areas of break-outs from the shafts to the 400ft (120m) long platform tunnels and concourse junctions. Test data is included in the contract documents and a test shaft report was available to interested parties who visited the test shaft during and after its excavation.

Parsons Brinckerhoff Construction Services is construction manager of the Beacon Hill contract. Services on the estimated \$2.1 billion initial 14-mile (22.5km) long LRT segment are due to start in 2009. ■