



By Jack Burke

CALIFORNIA

Pacifica Devils Slide Tunnel Kiewit Pacific Co.

As of mid-December, the northbound top heading reached 902 m (71 percent), the southbound top heading 868 m (70 percent complete), the northbound bench 832 m (65 percent) and the southbound bench 790 m (64 percent). Currently, the northbound tunnel is using drill-and-blast as the primary excavation method while the southbound tunnel is using the AM-105 roadheader for primary excavation. Both tunnels are using the AM-105 roadheaders to excavate the benches.

The final lining concrete operations are now fully under way in the northbound and southbound tunnels. Approximately 30 percent of the abutments have been constructed. Approximately 360 m of waterproofing has been installed in the northbound tunnel and is currently being performed in the southbound tunnel. On Dec. 3, the first main line concrete block was placed in the northbound tunnel. More than 220 cu yd of concrete was placed.

Kiewit Team: Project Manager: Scott Wimmer; Tunnel Manager: Paul Madson; Concrete Manager: Bhaskar Bhavsar; Equipment Manager: Larry Andersen; Safety Superintendent: Jason Rozier; Quality Control Manager: Brian Smith; and Tunnel Consultants: Gall-Zeidler Consultants. Information: (650) 290-5100.

Sacramento Upper Northwest Interceptor-Sections 1 & 2 Traylor/Shea JV

Installation by earth pressure balance (EPB) tunneling methods of approximately 19,240 lf of 144-in., PVC-lined, precast concrete tunnel segments, one 84-in. by 144-in. transition structure, one 144-in. by 120-in. transition structure, 20 access manholes, one interceptor manhole, and connection to three existing trunk sewer lines.

Tunnel excavation was completed on Nov. 23, roughly two months ahead of schedule. The Robbins/Mitsubishi EPBM has been completely removed from the project. The connections to the tunnel at all 20 manhole locations have been completed. The final T-Lock liner patching and final welding process will begin as soon as the utilities are removed from the tunnel. Utility and conveyor removal is 90 percent complete as of late December.

TSJV Staff: Project Manager: Jeremy Theys; Project, Superintendent: Bert Dore; Project Engineer: Adam Hargreaves; Field Engineer: Eduoard Whitman. Information: (916) 515-3933.

San Bernardino Arrowhead East and West Tunnels Shea/Kenny JV

As of Nov. 20, all work on the Arrowhead Tunnels Project was completed and acknowledged with a completion certificate.

Water was flowing through the tunnels and pipelines and all site restoration work completed. This marks the end of an extremely challenging tunnel project that started in mid-2002 and involved the excavation of 42,500 lf of tunnel through difficult conditions with frequent zones of highly altered rock with high ground water pressure and flows. The work was completed 14 months in advance of the revised completion schedule. Water started flowing in late September 2009 from the Devil Canyon portal.

All project personnel have been re-assigned or have left the project. Bob Gordon and Mike Belcher retired while Ron Walton and Mike Klements were transferred to Milwaukee. Renald McInnis was transferred to No. 7 Line in New York City. Freddie Carr, Tom Dahlin, Dana Downs and Brian Fulcher were transferred to the Walnut home office.

Please direct all inquiries to Brian Fulcher at JF Shea Construction at (909) 444-4243 or brian.fulcher@jfshea.com.

San Diego San Vicente Pipeline Traylor/Shea JV

The San Vicente Pipeline Tunnel is an 11-mile long, 8.5-ft diameter water conveyance being built for the San Diego County Water Authority. Along the western portion (Reaches 1, 2, 3, 4W), the tunnel has been excavated from the central shaft through to the western shaft. Installation of final liner steel pipe is complete. Pipe consists of 103-in. welded steel pipe, ranging from 3/4-in. to 3/8-in. thick. Pieces are 50-ft long, and welded together in the tunnel. Cellular grout injection into the annulus between the steel pipe and the tunnel initial support is complete. A 1/2-in. thick mortar lining will be applied to the interior of the pipe beginning in January 2010.

In the eastern portion (Reach 4 East), the second CTS digger shield holed-through into central shaft in September 2009. Completion of this reach finishes tunneling for the project. Steel liner pipe installation from the San Vicente Portal is progressing, expected to complete in early January. Cellular grouting is proceeding from central shaft, and will complete shortly after pipe installation finishes. Mortar lining of the pipe will follow the lining of the west half pipe.

Project Manager: Mike Jatzcak. Information: (619) 631-0777.

San Mateo County New Crystal Springs By-Pass (Polhemus) Tunnel Shank/Balfour-Beatty

The New Crystal Springs Bypass (Polhemus) tunnel for the San Francisco Public Utilities Commission will be a new tunnel to be constructed parallel to and beneath the existing Crystal Springs Bypass Pipeline. At the southern end of the tunnel, the south shaft will be located in the vicinity of the existing Polhemus Fluoridation Station. At the northern end of the tunnel, the north shaft will be located on the gravel pull-out adjacent to the bend in Crystal Springs Road

about 500 ft south of the intersection of Polhemus Road.

The work is located in San Mateo County and consists of excavation of approximately 4,200 lf of tunnel and associated shafts; initial lining; installation of a 96-in. diameter steel pipe; grouting and backfilling voids between initial tunnel and shaft linings; and connection of new tunnel and pipelines to the existing Crystal Springs Bypass Pipeline. TBM excavation of the New Crystal Springs By-Pass Tunnel has begun, approximately 1,000 ft of the 4,000 ft tunnel have been excavated.

Project Director: Jerry Stokes; Project Engineer: Scott Shylanski. Information: (401) 474-7550.

FLORIDA

City of Hialeah FDOT SR-823/NW 57th ave Bradshaw Construction

Bradshaw Construction Corp. is currently constructing a 185-ft tunnel in Broward County under FEC Railroad. The tunnel consists of 84-in. direct jack RCP. A Lovat 101.5-in. TBM will be utilized to excavate the tunnel. Also included in the project is a microtunnel under FEC Railroad 100-ft in length. The tunnel consists of 42-in. Permalok steel casing jacked behind a Herrenknecht AVN-800 MTBM.

St. Petersburg 30th Avenue Storm Drainage Improvements Bradshaw Construction Corp.

Bradshaw Construction Corp. is constructing a tunnel in Pinellas County under the CSX Railroad 150-ft in length. The tunnel consists of 72-in. direct jack RCP. An Akkerman 87.5-in. TBM will be utilized to excavate the tunnel.

Information: Mark Rybak, Florida Area Manager; (410) 977-0955 or mrybak@bradshawcorp.com.

GEORGIA

Atlanta South Cobb Tunnel Project Shea/Traylor JV

This project for Cobb County consists of approximately 29,000 ft of 24-ft finished diameter tunnel located in rock, with depths ranging from 150 feet to 400 ft. Crews have completed mining more than a mile of TBM tunnel and the excavation of the pump station drill-and-shoot tunnel. Crews have placed of 320 lf of lining in the pump station tunnel, which was to be complete by the end of January. They are now preparing for the Sweetwater Tunnel and Nickajack tunnel excavation by subcontractor W.L. Hailey. Archer-Western has continued exterior structure walls and wet well walls for the pump station structure within the 116-ft shaft.

Personnel: Project Manager: Dan Martz; Assistant Project Manager: Stewart Lipofsky; General Superintendent: Mike Weeks; Project Engineer: John Forero; Field Engineer: Percy Townsend; Surveyor: Bill Currier; Cobb County Water System Engineering and Records Division Manager: Judy Jones; Parsons/Jacobs Associates Construction Manager: David Rendini; Parsons/Jacobs Associates Assistant Construction Manager: Ted DePooter; J/JG Design Engineer: Mike Robison. Information: (770) 941-9021.

Atlanta **South River Tunnel** **GSC Atlanta Inc.**

The project is 9,000 lf of 16-ft-diameter TBM tunnel finished with a 14-ft ID cast-in-place concrete liner. Also included is a 1,060-ft-long drill-and-blast connector tunnel that is to be lined with Hobas pipe. Finally, the project requires two construction shafts, 24-ft and 32-ft in diameter plus a 60-ft diameter pumping station shaft.

Crews have excavated both shafts to final elevation, the tail tunnel connecting the two shafts, the starter tunnel in preparation for TBM assembly and nearly half of the connector tunnel using drill-and-blast methods. The invert has been poured in the starter and tail tunnel while the shaft bottom was completed around the holidays. TBM assembly began late-December with most of the components already received on-site following a rebuild at Kiewit's Pacific Junction Engineering & Fabrication Shop.

Kiewit Team: Project Manager: Derek Brennan; Assistant Project Manager: Bryan Reese; Project Engineer: Ryan Terry; Safety Manager: Dale Matlock; Quality Manager: Diego Barbosa. Information: (404) 622-3476.

Snellville **No Business Creek Tunnel & Pump Station** **Mole/Jay Dee/Kassouf/Murray Hill JV**

This project for the Gwinnett County Department of Water Resources involves building a sewer interceptor/storage tunnel about 16,000 lf and 12 ft in diameter with five shafts ranging from 70 ft in depth to more than 240 ft in depth. To date, excavation of Shafts 1 through 5 is complete and the TBM completed the 16,000-ft drive in late November. Crews are working on tunnel cleaning. Reynolds Inc. has begun construction of the pump station. Hayward Baker has begun the ground modification program for the pump station building and is expected to finish in late January.

Personnel: Project Executive: Rod R. Shoulders; Project Manager: Jake Coibion; General Superintendent: Norman A. Gray; Tunnel Superintendent: Mike Clingon; Superintendent: Terry Lowe; Office Engineer: Zach West; Equipment Superintendent: Mike Rule; Walking Bosses: Leonard Pace, Henry Williams; Gwinnett Co. Project Manager: Manoj Bhamini; PB Construction

Manager: George Inlow; B&C Construction Manager: Roger Toeppen. Information: (440) 248-0616.

Kennesaw **Pedestrian Underpass at CSX** **Bradshaw Construction Corp.**

Bradshaw Construction Corp. has completed a 115-ft long, 13-ft diameter pedestrian tunnel under four tracks operated by CSX Transportation. Cover over the tunnel at the tracks ranged from 5 to 7 ft. A compensation grouting program was performed successfully by Hayward-Baker Inc. Geocomp Corp. provided a real-time monitoring program using automated motorized total stations (AMTS) with website reporting was used to control the grouting. Information: Eric Eisold, eisold@bradshawcorp.com.

ILLINOIS

Chicago **39th Street Bypass Tunnel** **Kenny Construction**

This \$146.5 million project consists of six lined drop shafts with inside diameters from 7 ft, 2 in. to 15 ft varying in depth from 227 to 250 ft; a vent shaft; six connecting structures; three backflow gate structures; entrance conduit structures; manholes; replacement gates at an existing MWRDGC structure; addition of 25 existing louvers at 25 existing drop shafts and 14,740 ft of 15-ft ID lined rock tunnel.

Crews mobilized to the site and setting up the yard and offices in April 2009 and started the overburden caisson for the main work shaft. The 75-ft deep caisson was completed followed by the drilling/shooting of the shaft to the deaeration chamber below and concrete lined back to the concrete caisson leading edge.

The 42-ft high by 30-ft wide by 100-ft long deaeration/drop shaft/TBM launch chamber was excavated and the upper portion concreted. The 17.5-ft Robbins TBM refurbishment was completed in a shop in Milwaukee by Kenny crews and has been shipped to the site. The TBM is currently being erected in the bottom of the shaft. A staged January launch was anticipated with full production scheduled for February 2010. Overburden shaft crews and rock drill-and-shoot crews are progressing on forward shafts.

Personnel: Tunnel Division Manager: Ted Budd; Project Manager: Mike Surman; Project Engineer: Christian Heinz; Senior Staff Engineer: Donn Renfro; Senior Staff Engineer: Brett Beranek; General Superintendent: Paul McDermott; TBM Specialist: Tommie Peterson; Safety Manager: Paul Lauricella. Information: tedbudd@kennyconstruction.com.

KENTUCKY

Louisville **Riverbank Filtration Tunnel & Lift Station** **Mole, Jay Dee, Murray Hill, Kassouf JV**

This fresh water collection tunnel for the Louisville Water Company includes 8,000 lf

of 12-ft diameter tunnel with one shaft 230 ft deep, four caissons approximately 100 ft deep each, construction of a pump station and four horizontal collector wells.

The TBM was launched in 2008 and the 8,000 feet tunnel excavation is complete. All 4 of the caissons are complete. Long Foundation completed all four of the blind drill drops. Collector Well International has completed 100 percent of the collector well laterals. Cast-in-place concrete lining of the tunnel has been completed. Reynolds Inc. has mobilized and construction of the pump station is well under way.

Personnel: Project Executive: J.J. Scarpavilli; Project Manager: Jim Delmonte; Owner's Project Manager: Kay Ball; Engineer's Project Manager: Steve Holtermann.

Boone County **Western Region Conveyance Tunnel** **McNally/Kiewit JV**

McNally/Kiewit was low bidder in November 2008 for this project proposed by Sanitation District No. 1 of Northern Kentucky. It consists of 32,500 lf of 12-ft excavated tunnel through shale with ribs/lagging specified as the primary support. The final pass lining consists of 102-in. RCP with T-Lock lining. There are five shafts associated with this project ranging in diameter from 16 ft to 51 ft and depths from 55 ft to 300 ft, including one vortex drop shaft and one flow control gate shaft; a 700-ft long bridge structure carrying Hobas pipe; 3,000-ft of 102-in. sewer pipe installed by open-cut; an odor control system; a bar rack facility and building gate control equipment in the flow structure site work; electrical and mechanical work.

The TBM had advanced 6,200 ft and a break through into Shaft 4 was anticipated for Jan. 18. The TBM will halt in the shaft for maintenance and resume mining on Jan. 20. Information: Tom Szaraz, tszaraz@mcnallytunneling.com.

MARYLAND

Baltimore **Storm Drain Rehabilitation** **Bradshaw Construction Corp.**

Bradshaw Construction Corp. has completed rehabilitating 6,500 ft of 18- to 96-in. reinforced concrete storm drains at the Dundalk Marine Terminal using spiral-wound hard plastic liner manufactured by Sekesui. The work was done in accordance with OSHA's HAZWOPER regulations due to the presence of chromium contamination. Information: Eric Eisold, eisold@bradshawcorp.com

NEW YORK

New York City **East Side Access** **Dragados/Judlau JV**

The excavation of the GCT-3-WYE East Cavern is complete. The cavern excavation was 31-ft high by 54-ft wide by 350-ft long

North American Project Update

with a launching chamber for the next upper tunnel run. The SELI TBM was parked, as the excavation was ongoing. After the excavation was complete the TBM was backed onto a dolly and then moved back from one tunnel into the new launching chamber.

The SELI TBM completed the last upper tunnel; this is the completion of excavation for all upper tunnels. Crews were walking the TBM back 5,000 ft to the launching cavern for the lower tunnel runs. The JV had to re-mine some ring steel areas and re-supported the ground so that the rings could be removed in order for the TBM walk back. The TBM will launch through a concrete plug and begin to drive the lower tunnels.

The Robbins TBM is mining its first lower tunnel run and is 85 percent complete on this 1-mile drive. This TBM will complete the drive, walk 3,000 ft and launch for the second lower tunnel, 1,600-ft long. The Westbound GCT main cavern excavation is under way with a combination roadheaders and drill-and-blast.

Personnel: Project Executive: Jose Miguel Gonzalez; Project Executive: Pablo Diez; Project Manager: Don Hickey; Project Engineers: Joaquin Fernandez, Julio Velez; GCT Cavern General Superintendent: Dave Dorfman; Equipment Manager: Louis Sanchez; Survey Superintendent: Jim Skura; Equipment Superintendent: Jim Disley. Information: (718) 943-1400.

New York City Harlem River Tunnel Kiewit Constructors Inc.

The project consists of two 165-ft deep circular shafts connected by a 675-ft long horseshoe tunnel. Bedrock in this part of Manhattan is white marble and found at a depth of approximately 70 ft below grade. Overburden at the shafts is a mix of sandy and silty soils with support of excavation in the overburden being secant pile wall. Tunnel arch concrete was complete in September. Following tunnel concrete operations, the crews completed contact grouting and patching of the lining while subcontractor Wisko installed the PVC waterproofing membrane in the shafts.

Work is now progressing vertically with shaft concrete operations. Rebar installation is now complete in the turn-under structures and shaft concrete is being placed in 19.5-ft high lifts to a finished diameter of 24 ft. Future operations include completion of the surface structures tying into the shafts where Con Edison will pull cables for the transmission feeders.

Kiewit Team: Project Manager: Paul Beljan; Tunnel Manager: Sean Menge; Engineering Manager: David Hamilton; Safety Manager: Matt Chasse. Information: (402) 346-8535.

New York City No. 7 Line Extension Shea/Skanska/Schiavone JV (S3II Tunnel Constructors)

The construction of the No. 7 Subway Line Extension has been under way since

December 2007 and is scheduled to be completed in September 2012. As of January 2010, the two double-shield Herrenknecht 22.5-ft diameter TBMs completed the initial 1,400-ft drive from Shaft A to the 34th Street Station cavern. The first TBM broke through to the cavern on Oct. 30 and the second on Dec. 16. Both TBMs were pulled through the 1,200-ft long cavern and the first TBM resumed excavation from the starter tunnels north of the cavern. The second machine is scheduled to resume by the end of January. Both machines will navigate a 650-ft radius curve to the right and proceed east under 41st Street to the Times Square area, where the tunnels will meet the existing tracks of the No. 7 Subway Line just under the Port Authority Bus Terminal. The tunnels are lined with a pre-cast concrete segment liner manufactured by Technopref. The tunnel muck is removed from the headings by side dump muck cars to the dumping hoppers located at Shaft A where the muck is transported to the surface by a vertical conveyor.

Excavation of the 34th Street Station cavern has been completed. The working slab and grade beams for the cavern walls have been constructed and the waterproofing for the cavern walls has been installed. The concrete placement for the cavern walls is ongoing while the muck trains travel through the cavern to support the TBM excavation north of the cavern.

The excavation in the Times Square area has also been completed. The tail tracks of the existing No. 7 Line have been lowered and the construction of the concrete box structure under the Port Authority Bus Terminal is in progress. As the Times Square chamber will also serve as the receiving area for the TBMs, the remaining box structure will be constructed after both TBMs break through to the chamber where they will be disassembled and removed.

S3II Project Director: Jim Marquardt; Assistant Deputy Directors: Carl Christensen, Lars Jennemyr; Victor Paterno; General Superintendent: Mike Jennings; Assistant Superintendents: Tom Gramza, Bob Leslie. Equipment Superintendent: Kelvin Sampson; Electrical Superintendent: Paul McNally; Director of Engineering: Jim Rosteck; Site Managers: Brian Jepsen, Shemek Oginski. Information: Paul Matthews, MTA Construction Manager, (212) 616-4462.

Croton New Croton Aqueduct Rehabilitation Frontier-Kemper/Schiavone/Piccone JV

This \$91.7 million, 27-month contract for the New York City Department of Environmental Protection was awarded in October 2008 and the notice to proceed issued in January 2009. The rehabilitation primarily consists of drilling and grouting the brick lined shafts, contact and consolidation grouting within the horseshoe gravity section and circular pressurized section of tunnel and surface work.

All sediment has been removed from Shaft 9, allowing surface masonry work to commence. Mortar repairs and stone realignment have been completed. Weep holes installation along the raceway walls have started. In addition, a one-story brick structure, which was used as a carriage house during the early days of the aqueduct's construction and use, was demolished. Items of historical interest will be preserved for the DEP.

Sediment and debris removal at the Shaft 18 blow-off has been completed. At Shaft 14, sediment from the blow-off outlet is being removed and the JV anticipates completion within a few weeks.

Westchester shaft work began at Shaft 19 in November 2009. Two men worked within the 70-vf shaft to remove the existing 130-year-old cast iron ladder and repair cracks. Work began at Shaft 15-1/2 in December 2009. Shaft work equipment is now being mobilized at additional work sites.

Mobilization is nearly complete at Jerome Park Reservoir, where the JV is preparing to access the Bronx section of aqueduct and commence work in February 2010.

Project Manager: Leon "Lonnie" Jacobs; Project Engineer: Paul Dixit; Business Manager: Tom Berger; Superintendents: Clyde Perdue, John Beasley; Field Office Engineers: David Daddario, Jeff Wolf-Jaworski, Jeff Gargoshian, Dave McMahon, Kumar Gopalsamy; Site Safety: John Ridens. Information: (914) 375-3513.

NEW JERSEY

Sayreville Raritan River Crossing Kenny Construction

This \$41 million project for the Middlesex County Utilities Authority consists of two 80-ft deep slurry wall shafts on either side of the river and 3,900 ft of 15.5-ft diameter segmental lined tunnel under the Raritan River. All work has been completed and accepted and the site is being demobilized.

Personnel: Tunnel Division Manager: Ted Budd; Project Manager: Bob Rautenberg; Superintendent: Mike Quinn TBM Specialist: Tom Peterson; Electrical Superintendent: Joe Johnson; Safety Manager: Dan Brennan; Project Sponsor: Mike Smithson. Information: Ted Budd, tedbudd@kenny-construction.com.

NEVADA

Las Vegas Lake Mead Intake No. 3 Shafts and Tunnel Vegas Tunnel Constructors (Impregilo/Healy JV)

This design-build project for the Southern Nevada Water Authority was awarded to Vegas Tunnel Constructors in March 2008, for \$447 million. The work includes an access shaft 30-ft diameter by 600 ft deep and 15,300 ft of rock tunnel to be mined with a convertible Herrenknecht TBM, capable of operating as a hard rock

machine in open mode and as a full Mix-shield in poor rock and/or with high water inflows, and lined with 20-ft diameter precast gasketed segments. The tunnel may be subjected to pressures of up to 17 bars. Also included is a new intake riser structure constructed 350 ft below the surface of Lake Mead.

Project design is being undertaken by Arup USA in conjunction with Brierley Associates. The design process for the project is at approximately 98 percent complete.

Shaft sinking is complete. Excavation and final lining is completed using headframe and double drum hoist. The TBM erection chamber; a 200-ft long, 45-ft wide, 35-ft high drill-and-blast horseshoe tunnel, is under way with the top heading completed and bench removal started. This will be followed by a starter tunnel of 350 ft in length.

The Herrenknecht hybrid TBM S-502 has shipped to the site and precast segment production is in full production.

Project Director: Fulvio Castaldi; Project Manager: Jim McDonald; Construction Manager: Renzo Ceccato; General Superintendent: Jeff Early; Plant Manager: Greg Cook; Equipment Superintendent: Tom Sepula; Electrical Superintendents: Guido dal Bosco, Zefram Houk; Technical Manager: Douglas Adair; Safety Manager: Jackie Owens; QC Manager: James Grayson; Site Engineers: John Arciszewski, Joe Nagy, Alessandro Tricamo, Lance Waddell, BG Kunz; Arup/Brierley Leads: Don Philips, Jon Hurt, Gregg Sherry. SNWA Construction Manager: Roger Rothenburger; SNWA Chief Inspector: Mike Byers. Information: Jim McDonald, (702) 893-2300

Las Vegas

Lake Mead Intake No. 2 Connection and Modifications Project

Barnard of Nevada

This project for the Southern Nevada Water Authority is a part of the Intake No. 3 project being constructed to counter the recessing water levels of Lake Mead. The project was awarded for construction to Barnard of Nevada Inc. in May 2008. The work includes drill-and-blast excavation of a 380-ft deep by 22-ft diameter shaft, 570 ft of modified horseshoe tunnel 16 ft high by 14 ft wide, and installation of an isolation gate, connection and marine modifications to the existing Intake No. 2 Tunnel.

Shaft excavation including concrete liner was completed in March 2009 to the designed depth of 380 ft. The transition tunnel area and tunnel excavation was completed in July 2009. A pre-excavation grouting program, dewatering pumping system and groundwater treatment system were successfully developed and implemented to manage groundwater inflows encountered during both shaft and tunnel excavation. Current construction includes final installation of isolation gate system, completion of tunnel tie-in to existing Intake 2 Tunnel, and marine modifications.

Personnel: BNI - Operations Manager: Dan Schall; Project Manager: Jordan Hoover; Project Superintendent: Andy Granger; Underground Construction Manager: Brad Bush; Project Engineers: Aaron Paulson, Dan Brown, Michael Davolt, Glenn Strid; Safety: Boodie Hurd, Mike Sinon; Walkers: Bill Kiehl, Willy Flores, Tracey Chambers. SNWA - Project Manager: Erika Moonin; CM/Parsons - Area Manager: Kevin Ulrey; Construction Manager: Shimi Tzobery; Chief Inspector: Gary Daniel. Information: (702) 283-5953.

OHIO

Columbus

BWARI

Jay Dee/Michels/Traylor JV

With the change in the lining specifications, the installation is currently estimated to be completed late March 2010.

Personnel: City of Columbus Division of Sewerage and Drainage - Civil Engineer: Gary Gilbert; Sewer System Engineering Manager: Tanya Arsh; URS

Corp. (Designer) - Douglas Uhren, Tom Richardson; HR Gray (Construction Management) - Robert Scott, James Joyce;

Lachel & Assoc. (Geotechnical Design) - David Chapman, Glen Frank; Contractor - Jerry Bantz, Project Engineer. Information: (614) 491-9551.

OREGON

Portland East Side CSO

Kiewit/Bilfinger Berger (KBB) JV

After successfully holing through at Port Center Shaft in October 2009, the TBM has been transported via barge up the Willamette River back to the main mining site at Opera Shaft. Over the next couple months, the TBM will be overhauled and refurbished before beginning the final 9,000-lf drive south to McLoughlin Shaft. The TBM is scheduled to launch in March 2010.

Elsewhere on the project, crews completed the excavation and tremie concrete plug at the seventh and final main shaft. Crews have also completed the structural tie-ins at four more of the 14 outfall sites. Structural shaft liners are in progress at four of the main shafts.

Project Director: Tom Corry; Project Manager: Niels Kofoed; Tunnel Manager: Christof Metzger; Engineering Manager: Matt Bartlett; Safety Manager: Paul Weisheit; Quality Manager: Kevin Krank; Information: (503) 290-7000.

UTAH

South Salt Lake

South Diversion Tunnel

Condie Construction Co./Claude R. Nix Inc.

This gravity sewer project installation of 54-in. OD Permalok steel casing with 36-in. PVC carrier 1,920-ft long is being excavated using an Akkerman TBM-WM58SC model 5000 68-in. diameter using a 200-ton jack can with intermediate jacking stations in three separate drives through silty sands and clay. Information: Jon Nix, (801) 589-9015.

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VIRGINIA

Crystal City National Center Sanitary Sewer Bradshaw Construction Corp.

Bradshaw Construction Corp. preparing to construct a 1,900-ft long sewer tunnel under Jefferson Davis Highway. The tunnel will be supported by 68-in. rib-and-board. Ground conditions consist of loose to dense sand near the water table. An Akkerman TBM will be used to mine the tunnels. The project also includes five structures and a tie-in to the existing system. Information: Eric Eisold, eisold@bradshawcorp.com.

Fairfax Corbalis to Fox Mill 54-inch Water main Kassouf/Clinton Road Equipment JV

Notice to proceed- August 31 2009
Start Construction - September 8, 2009
Engineer Consultant. NTH Consultants Ltd- Indianapolis Ind.

This project for the Fairfax County Water Authority consists of 8,400-ft of 99-in. TBM-excavated rock tunnel, 2,400-ft of open cut subcontracted to Casper Colosimo & Son Inc. of Pittsburgh, Pa. The tunnel will be lined with American Spiral Weld Pipe Cement coated 54-in. pipe.

The TBM is under rebuild by Clinton Road Equipment at Kassouf's shop in Ohio together with the trailing gear and backup. A new rock cutterhead has been ordered from Lovat.

Site preparation is 60 percent complete. The job has been delayed 60 days due to owner permit and land issues. The contractor has completed the additional geotechnical exploratory drilling and are in the process of developing revised tunnel alignment/elevations. Excavation of the launch shaft was expected to start the first of February with a July launch.

Project Manager: Jim Foley. Information: (216) 409-3416.

WASHINGTON

Seattle University Link Light Rail Traylor/Frontier Kemper JV

The job consists of a large slurry wall excavation at the University of Washington station, from which two side-by-side EPB TBM tunnels will be mined. Each tunnel is approximately 11,400 lf with 16 cross passages connecting the running tunnels. The TBM will erect the final lining of bolted, gasketed, precast concrete segments, once mining is complete, a concrete invert and sidewalk will be placed.

Proceed was given Jan. 4, 2010. The full project team has arrived on site, and early utility work has begun. Slurry wall construction for the station box is scheduled to begin in mid-summer 2010. Two Herrenknecht TBMs have been ordered with arrival set for spring 2011. A joint venture of Condon John-

son and Nicholson has been subcontracted to perform the site shoring work as well as the slurry wall construction.

Project Manager: Dave Ferguson, Project Engineer: Michael Krulc, P.E. Information: (206) 285-8888.

Bothell Brightwater East Kenny/Shea/Traylor JV

The 19.25-in. diameter Lovat EPB TBM was delivered to the site in September, 2007 and completed mining the 14,050-ft drive in November 2009. During the drive, numerous compressed air interventions were required with entry pressures topping out at 48 psi. The TBM was disassembled at the Treatment Plant Portal (TPP) shaft and the mining shaft area turned over to the Pump Station Contractor.

The tunnel was stripped of mining utilities and the pipe placement followed for the installation of the 56,000 ft of piping (four runs of 27-in., 48-in., 66-in. and 84-in. steel pipe at 14,000-ft long each) and the 52,000 ft of fiber optic cable (three runs). After all of the pipe and cable was installed, the grout crews started the placement of the 70,000 cu yd of cellular grout. It is anticipated that the grouting will be completed in March, followed by the repair of the polyurethane lining at the grout ports, pipeline acceptance and tie-in to the new plant piping.

Personnel: Tunnel Division Manager: Ted Budd; Project Manager: Luminita Calin; Project Engineer: Jake Taylor; Assistant Project Engineer: Tony Huphauf; QA/QC Manager: Erik Simonson; Project General Superintendent: Jack Finn; Electrical Superintendent: Dale Wold; Warehouse Manager: Terry Walls; Safety Manager: Rick Sutton; Home Office Sponsor: Austin Cooney. Information: (847) 541-8200.

Richmond Beach Brightwater West Jay Dee/Coluccio/Taisei JV

The JV successfully launched the TBM starting Sept. 10, 2008, and mined past the BNSF railroad tracks less than 60 ft from the tunnel eye with virtually no movement or disruption to the tracks. As of this writing a total of 3,927 rings have been installed for a total length of 19,635 lf of segment lined tunnel installed. The crews are working two 10-hour shifts with the second shift mining for 6-7 hours only then restocking the heading and adding utilities. The best week was 580 lf and the best day so far was 130 lf. The best month was April with 1,960 lf or 392 rings.

The tunnel picked back up after the first of the year and installed another 75 rings for 375 lf in the first week of 2010, including a stop in free air to change out 15 of the cutters. There is now 1,350 lf to go to the Ballinger Way shaft with hole-through estimated for early February.

Personnel: Managing Partner for the JV: Thomas S. DiPonio; Project Manager: Greg Hauser; General Superintendent: Tom McMahon; Tunnel Walkers: Martin Vales,

Eucario Ramirez; Project Engineer: Glen Frank; Assistant Project Engineer: Mina Shinouda; Tunnel Engineers: Hiro Uchida, Hirofumi Asano; Engineer: Peter Wang; Health and Safety Officer: Ray Cloutatre; Office Manager: Renee Halley; Microtunnel Manager: Bill Austell; Site Environmental Manager: Brett Curry; Kroner Environmental Services; King County Project Representative: Mann-Ling Thibert; Resident Engineer: Brad Cowles, Jacobs (replacing Bob Mues, who was reassigned to San Francisco's Bay Tunnel); Assistant Resident Engineer: Mike Cole, EPC Consultants; Chief Inspector: Ken Rossi, EPC Consultants; Tunnel Inspectors: Carl Negoy, Stan Burns; Design Engineer: John Giardrone. Information: (206) 542-2865.

Steve Singer, chief surveyor and friend, passed away on Friday, Jan. 15, 2010, in Seattle. He had provided successful survey for many tunnel companies including J.F. Shea, Kenny, Affholder and Jay Dee. He will be missed.

Brightwater Central Vinci/Parsons/FKCI JV

VPFK is 33 months into the construction of the four-year, \$210 million Brightwater Central Conveyance Tunnel Project. As of January 2010, The BT-2 TBM, "Helene," has advanced 7,630 ft (1,526 rings) and the BT-3 TBM, "Rainier," advanced 9,760 ft (1,952 Rings). More than 530 maintenance/inspection interventions have been performed on Helene and Rainier and there is no excavation or TBM progress to report.

Solutions to access the cutterhead at atmospheric pressures are being explored to perform necessary repairs to the cutterhead. The excavation of these tunnels is on hold pending the TBM resolution.

Personnel: Director: Thierry Portafaix; Project Manager: Shane Yanagisawa; Project Engineer: Yvonnick Rescamps; Business Manager: Cheryl Sturdefant; Safety Manager: Shannon Sellers; Equipment Superintendent: Manny Meckele; TBM Mechanical Superintendent: Rod Bray; Electrical Superintendent: Jim Clark; Superintendent: Roger Blankenship. Information: Steve Redmond, (206) 766-8106.

WISCONSIN

Milwaukee Jones Island Harbor Siphons Job Shea/Kenny JV

Both tunnels and three shafts have been completed. The high level sewers have been diverted into the new valve chambers.

Personnel: Project Superintendent: Jerry Straube; Office Manager: Bonnie Senkowski; Vice President: Martin Vliegthart.

Milwaukee Inland Storage System (ISS) Shea/Kenny JV

The 23-ft diameter bored tunnel broke through on June 25, 2009. Progress was slowed down considerably by unexpected

water intrusion (3,000 gpm). The tunnel is presently being lined with concrete to 21-ft diameter and should be completed by April 1, 2010.

Personnel: Project Manger: Leonard Postregna; Project Superintendent: Ron Walton; Project Engineer: Tim Benson; Project Safety Coordinator: Paul Pietsch; Office Manager: Bonnie Senkowski; Vice President: Martin Vliegthart.

Milwaukee

Milwaukee County Grounds Floodwater Facility -- Structures and Tunnel Facility Shea/Kenny JV

The Metropolitan Sewerage District Commission announced the low bidder Shea/Kenny with a bid of \$52,255,965.00 to construct a 17-ft tunnel to divert water from Underwood Creek during heavy flooding. A 3,000-ft long tunnel will be excavated through a hill, extending from the creek to Highway 45 to the west end of a basin along Swan Blvd. on the Milwaukee County Grounds in Wauwatosa. The basin is designed to hold 315 million gallons of water. It will slowly drain into the Menomonee River and help ease downstream flood levels. The tunnel is part of a \$100 million County Grounds flood control project. Tunneling started on Dec. 8, 2009. The tunnel is

being driven by a LOVAT EPB machine at 19.25-in. diameter and lined with a one-pass 17-ft inside diameter lining.

Personnel: Project Manger: Leonard Postregna; Project Superintendent: Keith Walter; Project Engineer: Eric Haaeke; Project Safety Coordinator: Paul Pietsch; Office Manager; Bonnie Senkowski; Vice President: Martin Vliegthart. Information: (414) 258-2510.

CANADA

British Columbia

North Vancouver

Seymour-Capilano Twin Tunnel

Frontier-Kemper/J.F.Shea/Aecon JV

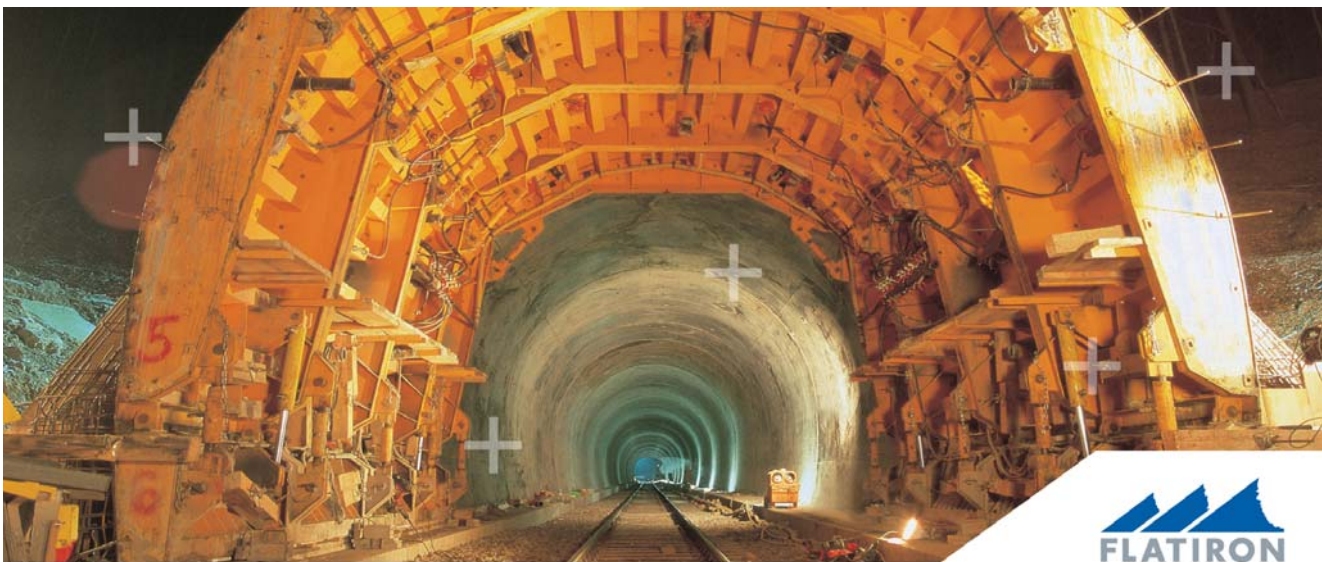
Metro Vancouver awarded the joint venture a completion contract for the Twin Tunnels that were partially completed by a previous contractor. The fixed price bid of \$181 million will allow completion of the project.

The contractor will utilize the original engineering and the two Robbins hard-rock TBMs that are currently in place in the tunnels. Tunnel excavation for the completion project restarted on July 14. A significant portion of the works remains to be completed including TBM excavation of approximately 2,800 m and 3,100 m, respectively, of the 7.2-km

long treated and raw water tunnels, two 275-m deep, 4-m diameter raise bored shafts at Capilano, and installation of steel lining at both ends of the project. All work is expected to be completed by spring 2013.

The re-commencing of works has been planned as a phased approach and with start of the TBM excavation in the Treated Water Tunnel first. One of the key requirements as part of the re-commencement of the project was to require the JV to confirm the ability to successfully install steel ribs within the TBM finger shield before proceeding with subsequent TBM excavation in the treated water tunnel. This work was successfully completed and TBM excavation resumed in the Treated Water Tunnel in July 2009 and one month later in the Raw Water Tunnel. Approximately 1 km has been excavated in each tunnel.

Personnel: Project Manager: Serge Moalli; Project Superintendent: Richard Boutelle; Tunnel Superintendent: Marc Wagner; Field Operations Engineering: Jonathan Prenger; Planning Engineer: Farouq Esmail; Walkers: Jason Sale, Geoff Robinson, John Thorn, Ben Stanton; Office Manager: Sandra Prenger. Information: Steve Redmond, (206) 766-8106.



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