By Jack Burke

ALABAMA

Montgomery
Lower Catoma Interceptor
Bradshaw Construction Corp.

Bradshaw Construction Corp. completed four soft ground tunnels under state roads and railroads by microtunneling as part of a 37,000-ft long sewer pipeline project. The tunnels ranged from 83- to 99-in. diameter and 110- to 220-ft in length. Crews report that the microtunneling equipment performed admirably through the wet fine sand.

Area Manager: Eric Eisold; Project Manager: Mark Rybak; General Superintendent: Frank Jones.

CALIFORNIA

Pacifica
Devil's Slide Tunnel
Kiewit Pacific Co.

The Northbound top heading has now reached over 580 m (46 percent complete), the Southbound top heading is over 542 m (44 percent complete), the Northbound bench is over 417 m (33 percent complete) and the Southbound bench is over 345 m (28 percent complete).

Rock encountered since the last update has been mostly Category IV – consisting of excavating 1.0 m around supporting core using tunnel excavator; standing lattice girder; applying 300 mm of fiber reinforced shotcrete; installing 4 and 6 m grouted dowels; installing 41, 4-m tubespiles; and shotcreting a temporary invert arch.

The excavation of the first two pedestrian cross passages is complete. The excavation required a combination of drill-and-blast and hoe ram excavation techniques. The last shipments of final lining forms have been received and being stored at the Half Moon Bay airport. Final lining operations are planned to begin mid-2009.

Project Manager: Scott Wimmer; Tunnel Manager: Paul Madsen; Concrete Manager: Stephen Liu; Equipment Manager: Larry Andersen; Safety Superintendent: Dale Matlock; Quality Control Manager: Brian Smith; Tunnel Consultants: Gall-Zeidler Consultants. Information: (650) 290-5100.

Sacramento
Upper NW Interceptor Sections 1 & 2
Traylor/Shea JV

The TBM surface belt takeup and stacker conveyor are complete. The drilling and casing of the manhole shafts is complete. The Robbins/Mitsubishi EPB TBM main bearing corrosion problem was rectified and the unit delivered in December. Working from the backup trailing gear the machine was assembled in the main working shaft. The portal launch area was completed and the machine advanced to the launch area for final assembly and testing prior to removal of the shaft support piling and turning under the TBM portaling into the jet grouted block placed by subcontractor Hayward Baker. They anticipated turning under in January with nine segment rings installed and grouted for the start of mining and installing all of the back up system.

Project Manager: Dave Ferguson, Project Superintendent: Bert Dore, Project Engineer: Jeremy Theys, Assistant Project Engineer: Christophe Bragard, Field Engineer: Edouard Whitman. Hatch Mott McDonald – Construction Manager: Pat Doig; Resident Engineer: Bob Edwards. Contact: Jeremy Theys (916) 515-3933

San Bernardino
Arrowhead East and Arrowhead West
Shea/Kenny JV

All mining has been completed and post mining transition of the tunnels has been completed. Installation of the final tunnel liner using pre-cast concrete pipe sections is under way in both tunnels and should be substantially complete in July 2009. Expecting substantial completion of all tunneling work by the end of 2009 with site restoration operations to follow.

Project Director: Brian Fulcher; Project Manager: Bob Gordon; Project Engineers: Mike Belcher PA, Dana Downs; Superintendent Strawberry: Ron Walton; Walkers: Don Fullmer, Jeff Bright, Ron Sammeth, Bradley Leonard, Jim Autry. MWD Construction Manager: John Wallace, Resident Engineer: Mike Bell, Assistant Resident Engineer: Dan McMaster. Contact: Brian Fulcher (909) 883-3399.

San Diego
San Vicente Pipeline
Traylor/Shea JV

The San Vicente Pipeline Tunnel is an 11-mile water conveyance being built for the San Diego County Water Authority. The 8.5-ft diameter pipeline will connect an existing aqueduct, feeding San Diego County, to the San Vicente reservoir. The system will provide additional storage during wet periods, and another water source during dry periods or when the main aqueduct suffers a catastrophe, such as an earthquake.

West Portion/Reaches 1,2,3,4W: The tunnel has been excavated from central shaft through to the West shaft. Cleanup and removal of utilities has been accomplished. Final liner installation began in January 2009 with the installation of pipe fed from Central Shaft and placed starting at West Shaft. Liner consists of 103-in. welded steel pipe, ranging from 3/4- to 3/8-in. thick.Pieces are 50-ft long and welded together in the tunnel after fit up and tacking. Cellular grout will be injected into the annulus between the steel pipe and the tunnel initial support, after pipe installation has been completed. Finally, a 1/2-in. thick mortar lining will be applied to the interior of the pipe.

East Portion/Reach 4 East: Support of the second CTS digger shield is from the San Vicente Portal site. This machine is currently 10,500 lf into the conglomerate of Reach 4 East, where the ground has been consistently hard and difficult to mine. This reach is 22,000-lf and is the final drive.

Project Manager: Mike Jatczak. Contact: 619-631-0777.

San Mateo County
New Crystal Springs Bypass Tunnel
Shank/Balfour-Beatty

Bid awarded October 2008 to Shank/Balfour-Beatty for $55.7 million. The New Crystal Springs Bypass (Polhemus) tunnel will be a new tunnel to be constructed parallel to and beneath the existing Crystal Springs Bypass Pipeline. The South shaft will be located in the vicinity of the existing Polhemus Fluoridation Station. 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 and monitoring instrumentation system; installation of a 96-in. diameter steel pipe and final lining in tunnel and shafts; grouting and backfilling voids between initial tunnel and shaft linings; excavation and construction of valve vaults, installation of valves, communication for control and monitoring system and emergency backup power system; connection of new tunnel and pipelines to the existing Crystal Springs Bypass Pipeline and tunnel; modification of existing drainage system, realignment of existing roadway; and installation of new security fences, etc.

GEORGIA

Atlanta
South Cobb Tunnel Project

Project consists of approximately 29,000 lf of 24-ft finished diameter tunnel located in rock, with depths ranging from 150 to 400 ft. Most of the tunnel will be excavated using a TBM. Two shafts 44-ft, 6-in. diameter will be excavated for launching and recovery of the TBM, and one shaft 116-ft diameter will be excavated and a wastewater treatment plant will be constructed under subcontract with Archer-Western Construction. Several smaller drill-and-blast tunnels will be connected to five diversion/drop shaft structures that interconnect with the mainline tunnel.

Current work on the project consists of sinking the Sweetwater Shaft 240 ft down and beginning placement of concrete in shaft from the bottom up, excavation of the 116-ft diameter Pump Station Shaft to elevation 725 (48 ft to date), installing collar at South Cobb Shaft, continuation on rebuilding of the TBM, and completion of mobilization to the site.

Project Manager: Dan Martz; Assistant Project Manager: Stewart Lipofsky; General Superintendent: Norm Hutchins; 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 Man-

ager: Ted DePooter. Contact: Dan Martz (770) 941-9021.

Atlanta
South River Tunnel
GSC Atlanta Inc.

Bid of $111,684,927.00 was awarded on Oct. 13, 2008. 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 which is to be lined with Hobas pipe. Finally, the project requires two construction shafts, 24-ft and 32-ft diameter, plus a 60-ft diameter pumping station shaft.

Clearing and grubbing operations are set to begin in early-2009, followed by additional site setup with grading and sound walls. The project is schedule to be complete in a little over two years in the first quarter of 2011.

Kiewit Team – Project Manager: Derek Brennan; Assistant Project Manager: Bryan Reese; Project Engineer: Ryan Terry; Safety Manager: Jack Long; Quality Manager: Diego Barbosa. Contact: (770) 487-2300.

Atlanta
Flint River Transmission Main Phase II
Bradshaw Construction Corp.

Bradshaw Construction Corp. has completed 1,040-ft long tunnel under CSX railroad and several city streets as part of an 11,000-ft sewer project. The tunnel was advanced with an Akkerman Model WM-60 TBM. The tunnel included two 800-ft radius curves and is lined with flange steel liner plate. The 30-in. diameter carrier pipe was blocked and grouted in-place.

Area Manager: Eric Eisold; General Superintendent: Bob Welch; Project Engineer: Todd Brown.

Snellville
No Business Creek
Mole/Jay Dee/Kassouf/Murray Hill JV

Project includes Sewer Interceptor/ Storage Tunnel – 16,000 lf of 12-ft diameter sewer interceptor and storage tunnel, five shafts ranging from 70 ft in depth to over 240 ft in depth and construction of a pump station and odor control facility.

Shafts 1 through 4 are complete. Shaft 5 (24-ft diameter 78 ft in depth) excavated by conventional methods is under way although it has been stalled by a differing site condition. The 14 ft diameter by 330 ft long, drill and shoot starter tunnel is complete. The TBM was installed and launched in early September. To date 3,300 lineal ft of tunnel has been mined. The first concrete placement in the pump station wet well has been completed by Headlands Contracting.

Project Executive: Rod R. Shoulders; General Superintendent: Norman A. Gray; Tunnel Superintendent: Mike Clingon; Superintendent: Terry Lowe; Caisson Superintendent: Carey Baird; Project Manager: Jake Coibion; Office Engineer: Zach West; Equipment Superintendent: Mike Rule; Walking Boss: Kelly Metcalf; Walking Boss: Leonard Pace; Walking Boss: Henry Williams; Gwinnett Co. Project Manager: Manoj Bhamini; PB Construction Manager: George Inlow; B&C Construction Manager: Roger Toebben. Contact: Rod Shoulders 440 248-0616.

Suwanee
Multi-Use Path Under
Norfolk Southern Rail Line
Bradshaw Construction Corp.

Bradshaw Construction Corp. has completed a 100-ft long, 13-ft diameter liner plate tunnel under Norfolk Southern Railroad in Suwanee, Ga. Cover over the tunnel at the tracks was less than 7 ft. The pedestrian tunnel will be lined with a reinforced shotcrete finish scheduled to start sometime in January 2009.

Area Manager: Eric Eisold; General Superintendents: Jerry Simon and Frank Jones; Project Engineer: Todd Brown.

KANSAS

Kansas City
Turkey Creek Tunnel Rehabilitation
Merco/Obayashi JV

Crews have completed the upstream and downstream sections of composite roof support and all partial and full penetration wall repairs have been completed. The conveyance system has been reinstalled and the structural invert slab is scheduled for completion in late January. The remaining structural liner work is scheduled for spring completion followed by contact grouting and demobilization.

Project Sponsor: M.V. Mergentime; Project Superintendent: Mike Levoy; CQC: Ron Heater; Tunnel Supervisor: Joey Jennings; Field Engineer: Chris Lemoine; Safety Superintendent: Larry Stewart; PM Coordinator: Bob Schoen.

KENTUCKY

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

Project includes construction of 8,000 lf of 12-ft diameter fresh water collection tunnel with one shaft 230-ft in depth. Four caissons approximately 100-ft deep each, construction of a pump station and four horizontal collector wells

Excavation of the work shaft and launch tunnel were completed early in 2008. The TBM was launched in 2008 and the 8,000 ft tunnel excavation is complete. All four of the caissons are complete. Three of the four blind drill drops are complete. Significant water and material infiltration problems were encountered as the construction of the fourth blind drill drop began resulting is delays. Over 80 percent of the collector well laterals are complete. Cast-in-place concrete lining of the tunnel has begun and is expected to be complete in late spring of 2009.

Project Executive: Rod R. Shoulders; Project Manager: Gevan McCoy; Concrete Superintendent: Denzel Young; Walking Boss: Chris Stover; Owner's Project Manager: Kay Ball; Engineer's Project Manager: Steve Holtermann. Contact: Rod Shoulders (440) 248-0616.

MASSACHUSETTS

Dorchester
Dorchester CSO
Shank/Barletta JV

The tunnel excavation and lining is complete. JV partner Barletta is completing the lining of the shafts. The tunnel section is being de-mobilized and some of the crew will head to California for the Crystal Springs Project.

Chief Engineer: Scott Shylanski; Superintendents: Curtis Bahten and Jim Mulkey. Contact: Shylanski@aol.com

MICHIGAN

Detroit
MOD Detroit River Outfall No. 2

Vinci/Frontier-Kemper JV received Notice to Proceed on Nov. 17, 2008, for the MOD Detroit River Outfall No. 2 located in Detroit. Partial project description includes backfill and abandonment of a previously constructed entrance shaft bottom and a portion of the existing TBM tunnel, construction of a new connection into the existing shaft and 6,200 lf of 24-ft excavated diameter single-pass pre-cast concrete segment supported outfall tunnel with a slurry TBM, connections to two existing access shafts and 6 existing riser shafts.

Project Manager: Thierry Portafaix; Project Engineer: Ali Pazuki; Safety Manager: Matt Hadaway; Mechanical Engineer: Jesse Schneider; Business Manager: Debby Shattuck. Contact: Steve Redmond (206) 708-5332.

MISSOURI

Viburnum
Doe Run Ventilation Shaft
Frontier-Kemper Construction Inc.

On July 6, 2006, FKCI was awarded the contract to construct a new ventilation shaft for Doe Run Mining Co.'s Southeast Missouri Mining and Milling Division (SEMO) at the Casteel Mine near Viburnum, Mo. The shaft will be raise bored to a diameter of 6-ft from a depth of approximately 900-ft using a DUR1000 drill rig. Work will be performed at the Casteel Mine and was scheduled to start September 2006. Presently the job is on hold until the issue of surface rights is resolved. Once a resolution is reached the crews will move back and complete the job in approximately three months. Currently Doe Run has relocated the Shaft per agreement between the mine and property owner. The Shaft has been relocated from the Casteel Mine to the Brushy Creek Mine and pre-grouting operations started. The contractor will mobilize at the site to complete the Brushy Creek Shaft followed by the Casteel Shaft and three additional shafts to be completed before 2009.

NEW YORK

New York City
East Side Access
Dragados/Judlau JV

The Robbins TBM completed the upper westbound drive 7,600 lf in November 2008. The TBM was walked back 3,200 lf and a concrete plug was poured at the location of the Grand Central Terminal 3 westbound WYE cavern and the TBM was re-launched through the cavern for the second upper drive of 1,600 lf, the TBM was re-launched in January 2009.

The Grand Central Terminal 3 eastbound WYE Cavern, was excavated by a Sandvik AT 720 roadheader. The cavern top heading is complete along with a starter tunnel and the JV is now excavating the bench. The Seli TBM completed 4,800 lf of tunnel and was walked back to the cavern location and is waiting to re-launch after the cavern excavation is completed. The DEAI machine completed the short drive of the upper tunnel and now have 3,200 lf left to mine when re-launched. The cavern dimensions are 30-ft high by 60-ft wide by 325-ft long.

The JV is also drilling and blasting a cross connection between the tunnels behind the roadheader operation.

Project Executive: Jose Miguel Gonzalez; Project Executive: Pablo Diez; Project Manager: Don Hickey; Project Engineers: Joaquin Fernandez and Julio Velez; Job Superintendent: Denis O'Neill; Equipment Manager: Louis Sanchez; Survey Superintendent: Jim Skura; General Superintendent: Terry Beesley; Equipment Superintendent Jim Disley. Contact: Don Hickey (718) 321-1818

New York City
Water Tunnel No. 3 Stage 2
Schiavone/Shea/Frontier-Kemper JV

All nine miles of tunnel and drifts have been accepted by the owner. Shafts 29 and 31 also have been accepted by the owner. In December 2008, installation of stainless steel pipe started at Shaft 26B; work continues installing pipe. Shafts 24B, 27B and 30B restoration is under way and expected to be completed by the end of February 2009.

Shafts 31B and 29B are completed. At Shaft 25B work continues in the distribution chamber; the shaft work is expected to be completed in April. At shafts 32B and 33B work continues in the distribution chambers. Work at these shafts is also expected to be complete prior to April.

Schiavone Director of Tunneling: Anthony Del Vescovo; Project Manager: Kevin F. Clark; General Superintendent: Dale Estus; Project Engineers: Florentino Sison, Mike Gorski, Rob Labbe; J.F. Shea Shaft Manager: Shemek Oginski; Shaft Superintendent: Mike Jennings.

Manhattan
Harlem River Tunnel
Kiewit Construction 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.

After five months of production, crews have completed the installation of secant piles on both the Manhattan and Bronx sites. Having completed soil excavation of the Manhattan shaft, project personnel have moved on to rock excavation using conventional drill-and-blast techniques. Now in the sixth drill-and-blast cycle crews are approximately half way complete on the Manhattan shaft.

Across the Harlem River, the Bronx site has recently seen the completion of the ring beam and grouting operations are under way. The grouting operation is to limit the inflow of water at the secant/rock interface. A burn hole will be installed and crews will begin soil excavation at the Bronx site in early-2009.

Kiewit Team: Project Manager: Paul Beljan; Tunnel Manager: Sean Menge; Engineering Manager: David Hamilton; Safety Manager: John Pettis. Contact: (402) 346-8535.

NEW JERSEY

Sayreville
Raritan River Force Main
Kenny Construction

On July 10, 2007, Kenny Construction was issued NTP for the forcemain tunnel under the Raritan River in Sayreville, N.J. The $41,150,000 project consists of two 80-ft deep slurry wall shafts on either side of the river and 3,900-ft of 15-ft, 6-in. diameter segmental lined tunnel under the Raritan River between the shafts. The refurbishment of a Lovat EPB TBM was completed by Kenny forces and shipped to the site. Compressed air interventions will be required to access the cutterhead. Once the tunnel is complete, two 60-in. forcemains will be installed and partially encased leaving an access walkway above the pipes for inspection purposes.

Mobilization started in September. Bencor completed the installation of the slurry walls for the portaling out shaft and the extraction shaft on the opposite side of the river. Crews completed the excavation of both the launching and the extraction shafts in the wet followed by tremie plugs, curing and shaft dewatering. Crews set up the launching shaft with portal blocks and seals and completed TBM assembly in the shaft. The mining started in August and has advanced 3,000 ft to date with a February 2009 completion anticipated. This will be followed by the TBM extraction, the cleaning of the tunnel and the insertion and grouting of two runs of 60-in. Hobas pipe.

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. Contact: tedbudd@kennyconstruction.com.

NEVADA

Las Vegas
Lake Mead Intake No. 3
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 mixshield in poor rock and/or with high water inflows, and lined with 20-ft diameter precast gasketed segments that will be manufactured on site. 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, and miscellaneous site and ancillary work.

Project design is being undertaken by Arup USA in conjunction with Brierley Associates. The design process for the project is at approximately 90 percent complete.

Shaft sinking is under way. Excavation and final lining is complete to a depth of 200 ft as of end of year. A short drift tunnel for construction support equipment has also been excavated. Concurrent excavation and lining work is continuing. Pre-excavation probing and grouting has been required in the shaft.

Design of the Herrenknecht hybrid TBM is complete and long lead items have been ordered. Factory preassembly has begun.

Project Director: Fulvio Castaldi; Project Manager: Jim McDonald; Construction Manager: Renzo Ceccato; General Superintendent: Red Blanchette; Plant Manager: Greg Cook; Equipment Superintendent: Bob Schaffer; Electrical Superintendent: Zefram Houk; Technical Manager: Douglas Adair; Safety Manager: Jackie Owens; QC Manager: James Grayson; Engineers: John Arciszewski, Alessandro Tricamo, Lance Waddell, BG Kunz; Arup/Brierley leads: Don Philips, Jon Hurt, and Gregg Sherry. For SNWA, Construction Manager: Roger Rothenburger; Chief Inspector: Mike Byers. Contact: Jim McDonald, (702) 893-2300.

Las Vegas
Lake Mead Intake No. 2
Connection & Modifications Project
Barnard of Nevada Inc.

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 body of water formed by the Hoover Dam. The project was awarded for construction to Barnard of Nevada Inc. in May 2008. The Project was designed by MWH/HILL JV and construction management services are provided by Parsons Corporation Inc. The work includes drill-and-blast excavation of a

380-ft deep by 22-ft diameter shaft and 570 feet of modified horseshoe tunnel 16-ft high by 14-ft wide. Also includes, installation of an isolation gate, connection and marine modifications to the existing Intake No. 2 Tunnel.

Currently the shaft excavation has progressed to 280-ft deep and the shaft concrete liner is 140-ft deep. An extensive pre-excavation grouting program, dewatering pumping system and groundwater treatment system have been developed and implemented to manage groundwater inflows encountered during excavation.

BNI - Operations Manager: Dan Schall; Project Manager: Jordan Hoover; Project Superintendent: Andy Granger; Underground Construction Manager: Brad Bush; Project Engineers: Aaron Paulson, Dan Brown, Caroline Boerner; Safety: Boodie Hurd, Mike Sinon. For SNWA – Project Manager: Erika Moonin. For CM/ Parsons - Area Manager: Michael Feroz; Construction Manager: Shimi Tzobery; Lead Inspector: Gary Daniel. Contact: Jordan Hoover (702) 283-5953.

NORTH CAROLINA

Charlotte

Briar Creek Relief Sewer Phase 1B

Bradshaw Construction Corp.

Bradshaw Construction Corp. has completed a 700 ft long by 101-in. diameter rib-and-board tunnel that was originally designed as a 25- to 40-ft deep cut-and-cover trench. The tunnel was advanced with a 101-in. diameter digger shield and 60-in. diameter FRP carrier pipe was installed, blocked and grouted in the tunnel.

Area Manager: Eric Eisold; General Superintendent: Jerry Simon.

Charlotte

Wachovia/Knight Theater Tunnels

Bradshaw Construction Corp.

Bradshaw Construction Corp. has just completed a design-build contract to construct two pedestrian tunnels under the streets of downtown Charlotte to connect a new performing arts center to underground parking. The work is part of Wachovia Bank's First Street Development Project. Teamed with Jenny Engineering Corp. of Springfield, N.J., a concept was developed including initial/final lining NATM and waterproofing and a cast-in-place floor. The shotcrete mix design included chemical additives to increase water resistance and a spray-on water proofing membrane was sandwiched in the tunnel lining.

The subsurface conditions included rock and mixed face tunneling with about 16- to 20-ft of cover. The 13-ft high by 16-ft wide finish horseshoe shell will be fitted with an architectural finish corridor in a follow on contract.

Area Manager: Eric Eisold; General Superintendent: Bob Welch; Design Engineers: Prakash Donde & Iwona Tarchala (Jenny Engineering).

OHIO

Columbus

Rickenbacker Interceptor

Jay Dee/Michels/Traylor JV

The tunnel has been cleaned and currently working on the installation of the Linabond lining required for the full length. Have completed approximately 50 percent of the lining. The project has been put on hold pending resolution of lining.

City of Columbus, Division of Sewerage and Drainage: Gary Gilbert, Civil Engineer; City of Columbus, Division of Sewerage and Drainage: Tanya Arsh, Sewer System Engineering Manager; URS Corp. — Designer: Douglas Uhren and Tom Richardson; HR Gray — Construction Management: Robert Scott; Sr. Mgr: James Joyce; Lachel & Assoc. — Geotechnical Design: David Chapman and Glen Frank; Contractor, Jay Dee / Michels / Traylor JV — Project Manager: Michael DiPonio; Project Engineer: Mark Lafaze; Project Superintendent: Tim Awald. Contact: (614) 491-9551.

Columbus

Big Walnut

Kassouf, Mole, Murray Hill, Jay Dee JV (KMM&J)

Mining of the soft ground portion of the tunnel is complete, all bottom portions of the shaft structures have been poured. Riser setting and backfilling is complete. Connector work is also complete. Currently in final cleanup and demobilization.

Project Manager: Robert J. Kassouf; Project Superintendent: Bill McFadden; Further Information Contact: Bob Kassouf (216) 651-3333

OREGON

Portland

East Side CSO

Kiewit/Bilfinger Berger (KBB) JV

This past November, Rosie holed through at the River Street Shaft, the third shaft along the northbound tunnel alignment. In early January, after receiving a new set of cutters, Rosie will begin the final northbound drive — her longest drive yet, over 8,000 lf, to the Port Center Way Shaft.

Microtunnel crews recently completed their eighth of nine drives from the McLoughlin Shaft to Outfall 28 located roughly 900 lf away in the heart of a Southeast Portland neighborhood. Only one microtunnel drive remains, set to be completed in late April 2009.

All but one main shaft (McLoughlin) has been completely sunk and the final concrete liners are under way at four of these seven main shafts. In addition, crews completed four of nine Diversion Structures (OF28, OF36, OF37-2 and OF46) and two of seven Manhole Build-outs in 2008.

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

Sandy

Sandy River Conduit Relocation

Kiewit Pacific Co.

Winning bid of $20,639,000 was awarded on April 23, 2008. Project scope includes a 30-ft diameter construction shaft to a depth of 85 ft; two drilled 9-ft diameter shafts to a depth of 110 ft; and a 13-ft diameter modified horseshoe tunnel that runs diagonally under the girth of the Sandy River. Before completion of all the shafts, the tunnel will be backfilled with cell grout.

Project personnel have been busy working with designer Parsons Water & Infrastructure Inc. to get design packages completed and reviewed by the Owner. The East Shaft Package Design is now complete which allows crews to move out into the field. Engineering personnel have been working on all the upfront work of submittals, permitting and schedule associated with the project.

Construction of the liner plate support is starting to take shape. This liner plate will serve as the ground support in the shaft through the 15 ft of overburden soil, to be followed by shotcrete lining in the Sandy River Mudstone. Mudstone excavation is expected to continue to the tunnel invert depth of 85 ft. Turn under is scheduled for early March.

Project Director: Bill Mariucci; Project Manager: Jarrett Carlson; Construction Manager: Mike Hanley; Safety Manager: Andy Koester; Project Engineer: Jim Brunkhorst; and Design Manager: Jon Kaneshiro, Parsons Water & Infrastructure Inc. Contact: (503) 253-0081.

WASHINGTON

Bothell

Brightwater — East Contract

Kenny/Shea/Traylor JV

The 19-ft, 3-in. diameter Lovat EPB TBM was delivered to the site in September 2007, and was partially assembled in the IS shaft for the launch of the ECT (East Combined Tunnel) 14,050 lf drive. Mining started and the trailing gear added as the tunnel advanced. The entire trailing gear (325 ft) was installed and the full production mining started. Mining on two 9 hour production shifts, the tunnel was completed 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. The tunnel is being stripped of mining utilities and preparations are under way for the placement of the four runs of pipe.

All of the work associated with the North Creek Portal Site has been completed and accepted on Jan. 13, 2009. Kiewit Pacific, the follow-up pump station contractor, has taken over the site.

The TPP shaft is being set up for the

placement of the 56,000 lf of piping and 52,000 lf of fiber optic cable.

Tunnel Division Manager: Ted Budd; Project Manager: Mark Saylor; Project Engineer: Jake Taylor; Cost and Schedule Manager: Luminita Calin; QAQC Manager: Tony Huphauf; Ground Conditioning Engineer: Eric Simonson; Project General Superintendent: Rich Mascarello; Electrical Superintendent: Dale Wold; Warehouse Manager: Terry Walls; Safety Manager: Mike Sarlitto; Home Office Sponsor: Austin Cooney. Contact: Ted Budd (847) 541-8200.

Richmond Beach

Brightwater — West Contract

Jay Dee/Coluccio/Taisei, JV

The JV is in the launch mode with the 15-ft, 5-in. Lovat EPB TBM. The first rings were mined and installed Sept. 10. Currently placing additional trailing gear and preparing to tunnel below a major BNSF RR tracks. The main shaft is 28-ft deep, 35-ft wide and 190-ft long. The portal eye is only about 60-ft from the RR right of way and has less than a tunnel diameter of cover, including the RR ballast. The muck will be removed from the heading with 11-cubic yard muck boxes and frames from Mining Equipment Company hauled by new Brookville 20 ton locomotives. At the shaft the boxes will be emptied onto conveyors to move to the muck bin for storage and draining, then conveyed to barges for disposal on the other side of Puget Sound.

The concrete segments are being fabricated by CSI/Hanson JV in Tacoma, Wash. All 21,100 lf of tunnel will be from the shaft portal at Point Wells in Richmond Beach, very close to the shoreline of Puget Sound. Major subcontractors include Delta Technology Corp for HVAC, J.P. Francis & Assoc., Inc. for Plumbing and Mechanical, United States Electrical Corp. of Washington for both permanent and temporary electrical work.

The JV successfully launched the TBM on Sept. 10, 2008 and mined past the BNSF RR 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 748 rings have been installed for a total length of 3,740 lf of segment lined tunnel installed. The crews are working two 10 hour shifts with the second shift mining for 6 to 7 hours only then restocking the heading and adding utilities. The best week was 535 lf and the best day so far was 120 lf.

Tunnel muck is required to be hauled away by barge and to date 24 Barge loads, 35, 855 tons, have been hauled to the CalPortland quarry reclamation site at Mats Mats on the Kitsap Peninsula near Port Townsend. Barge hauling is done by Island Tug and Barge Co, from Seattle WA.

Managing Partner for the JV: Thomas S. DiPonio; Project Manager: Greg Hauser; General Superintendent: Tom McMahon; Project Engineer: Glen Frank; Assistant Project Engineer: Mina Shinouda; Tunnel Engineers: Hiro Uchida and Hirofumi Asano; Health and Safety Officer: Andrew Cook; Office Manager: Renee Halley; Micro Tunnel Manager Bill Austell, Frank Coluccio Construction Co.; Project Representative for King County: Mann-Ling Thibert; Resident Engineer Bob Mues, Jacobs Engineering; Assistant Resident Engineer: Mike Cole, EPC Consultants; Chief Inspector: Ken Rossi, EPC Consultants; Inspector: Ray Hatton; Design Engineer: John Glaudrone, Jacobs Associates. Contact: Greg Hauser (206) 542-2865.

Seattle

Brightwater — Central Contract

Vinci/Parsons/FKCI JV (VPFK)

Both BT-2 and BT-3 TBMs have been launched from the North Kenmore shaft. BT-2 exits at the North Creek Shaft provided by Kenny/Shea/Traylor (East Contract) and BT-3 exits at the Ballinger Way Shaft provided by VPFK. Ballinger Way Shaft is where Jay Dee/Colucccio/Taisei JV (West Contract) will remove its TBM.

The BT-2 TBM, "Helene," has advanced 6,465 ft (1,293 rings) and the BT-3 TBM, "Rainier," has advanced 5,255 ft (1,051 rings). Over 220 maintenance/inspection interventions have been performed on Helene and Rainier. The Ballinger Way shaft final concrete lining subcontractor has completed 110 ft of the 180-ft of the lining.

Project Manager: Lionel Suquet; Project Engineer: Yvonnick Rescamps; General Superintendent: Francois Delille; BT-2 Superintendent: Rafik Karaouzene, BT-3 Superintendent: Pierre Pissouraille; Equipment Superintendent: Rod Bray; Electrical Superintendent: John Issacs. Contact: Dave Rogstad (296) 766-8106.

Milwaukee

North 27th Street ISS Extension

Shea/Kenny JV

With the completion of the main access shaft the excavation of both the starter tunnel started and was completed in the mid summer 2008. The TBM arrived on site and assembly in the tunnel completed. Mining ahead slowly they added the trailing gear until it was totally in the tunnel. Mining operations commenced in early September, with extensive grouting of the face in advance of the TBM excavation. They have encountered serious water, as much as 3,000 gpm inflow in several sections of the tunnel. This has slowed the advance of the heading.

The Mill Road Shaft has been pregrouted and freezing completed. Crews are starting shaft sinking operations, placing the permanent concrete lining as they excavate. Subcontractor Platt Construction is building the ventilation and control building on the site.

Project Manager: Len Postregna; General Superintendent: Milan Jovanovick; Equipment Superintendent: Keith Walters; Office Manager: Bonnie Senkowski; Safety: Paul Pietsch; Project Engineer: Ken Schubert; VP/Area Manager: Dutch Vliegenthart. Contact: (414) 258-2510.

Milwaukee

Milwaukee County Grounds Floodwater Facility

Shea/Kenny JV

The metropolitan sewerage district Commission announced Shea/Kenny the low bidder 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 gal. 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 Grouds flood control project.

CANADA

BRITISH COLUMBIA

Ashlu Creek

Ashlu Creek Green Power Plant

Frontier-Kemper Constructors

The Ashlu Creek contract is a design-build-operate-transfer, run-of-the-river hydro electric project. It consists of an upriver diversion weir drop shaft, transfer tunnel and downriver powerhouse. The weir diverts the part of the river into the drop shaft and tunnel which then conveys the water 4.4 km downstream to a powerhouse, and is finally discharged back to Ashlu Creek.

The developer of the project, Ashlu Creek Investments issued Frontier-Kemper Constructors NTP in August 2006. A 30-m long starter tunnel was excavated under a subcontract by a local contractor using drill-blast. The Wirth TBM was completely refurbished in the Evansville shops of Frontier-Kemper together with an entirely new backup system and delivered to the site and assembled in March 2007.

Excavation commenced in late May 2007 and as of mid-January 2009 the 4.08-m Wirth TBM, equipped with 31 17-in. cutters, has excavated approximately 4,100 m of the drive total of 4,410 m through granitic rock of compressive rock strength varying between 160 and 225 MPa. Tunnel excavation is scheduled to be completed in early February 2009 and will be followed by the excavation of the intake shaft using one of Frontier-Kemper's raise bore machines. Seven fault zones have been encountered in the tunnel, three of them necessitating the installation of steel ring sets for ground support to achieve proper ground support. The other remaining fault zones required the installation of mesh, bolts and channels. Final demobilization is scheduled for June 2009.

Project Manager: Serge Moalli; Project Superintendent: Richard Boutelle; Walkers: Jonathan Prenger, Jason Sale, Denis Lafrenière and Johnnie Thorn; Field Engineer: Dave Watson; Office Manager: Sandra Prenger. Contact: Steve Redmond (206) 766-8106.