

North American Project Update

ALABAMA

Montgomery

Catoma Wet Weather Improvements Phase III - Lower Catoma Interceptor

Bradshaw Construction Corp.

Bradshaw Construction Corp. has been awarded a contract to construct four soft ground tunnels under state roads and railroads by microtunneling as part of a 37,000 lf sewer pipeline project. The tunnels range from 83 to 99 ID and 110 to 220 lf. Bradshaw has completed four of the eight shafts and is scheduled to start tunneling operations in July 2008.

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

CALIFORNIA

Pacific

Devil's Slide Tunnel

Kiewit Pacific Co.

Tunnel excavation continues in both the northbound and southbound tunnels. The northbound top heading has advanced to 260 m (20.5 percent complete), while the southbound has advanced 190 m (14 percent complete). A majority of the recent excavation has been completed utilizing the AM-105 roadheader with Category II ground support.

A Category II round consists of excavating 1.6 m of tunnel, applying 8.6 cubic m of shotcrete, standing 1 girder; and installing 11 4-m No. 7 dowels. Ground support Category I - consisting of excavating a 2.2-m top round using drill-and-blast; installing 3.6-m No.7 dowels; and placing shotcrete - and Category III - consisting of excavating a 1.2-m round around the supporting core utilizing a tunnel excavator; applying 250 mm of shotcrete; installing 41 4-m tube spiles; standing 1 girder; and installing 4- and 6-m drill-grouted dowels - have also been encountered.

The final lining team continues its planning effort. The forms are currently being shipped from Milan, Italy, and the scheduled arrival date will be in early-June.

Project Manager: Scott Wimmer; Assistant Project Manager: Ryan Sheedy; Tunnel Excavation Manager: Paul Madsen; Concrete Manager: Mark Ramsey; Equipment Manager: Larry Andersen; Safety Superintendent: Brian Barker; Quality Control Manager: Brian Smith; Tunnel Consultants: Gall-Zeidler Consultants. Information: (650) 290-5100.

Sacramento

Upper Northwest Interceptor 1 & 2

Traylor/Shea JV

Scope of project includes installation by EPB tunneling methods of approximately 19,240 lf of 144-in., PVC lined, precast concrete segment lined tunnel; one 84- by 144-in. transition structure; one 144- by 120-in. transition structure; 20 access manholes; one interceptor manhole; and connections to three existing trunk sewer lines.

NTP was given on Oct. 1, 2007. Traylor/Shea has mobilized the infrastructure to the job site. General facility installation (office trailers, shop, grout and foam plant, etc.) is proceeding at the New Natomas Pump Station (NNPS) site. Electrical substation installation is complete. Dewatering system for the NNPS shaft excavation is

operational and the shaft bracing installation was 30 percent complete through April. Manhole drilling and shaft grouting was to proceed in early May. Robbins/Mitsubishi will furnish the EPB TBM. TBM delivery is set for September 2008.

Project Manager: Dave Ferguson; Project Superintendent: Bert Dore; Project Engineer: Jeremy Theys; Assistant Project Engineer: Christophe Bragard; Field Engineer: Edouard Whitman. Information: Jeremy Theys (916) 515-3933.

Sacramento

Freeport Regional Water Intake Facilities

Balfour Beatty

Sub Contractor: Walter C. Smith

Crews are using an Akkerman Gen 1 Micro Container with SL/74 MTBM increased to 102-in.. Started first bore March 10 and completed April 22. This was a 500-ft drive with 102-in. steel casing under I-5. Completed second drive 482-ft with 102-in., 0.75-in. thick steel casing.

Project Manager: Lawrence Alvarez.

San Bernardino

Arrowhead East and West

Shea/Kenny JV

Arrowhead East Heading-Strawberry Portal - The TBM holed through into the original tunnel mined and supported with segments and the permanent steel pipe in place on May 2. The TBM will be dismantled and removed from the Strawberry Portal and provisions for pipe installation will commence.

Arrowhead West Heading-Waterman Canyon Portal - The Waterman Tunnel excavation has advanced over 18,000 lf of the drive with approximately 2,000 lf left. Detailed planning and equipment procurements are under way for all post-mining operations including the RCCP final tunnel lining and grouting operations.

Project Director: Brian Fulcher; Project Managers: Bob Gordon, Mike Belcher PA, Stuart Lipofsky (transferred to Atlanta); Project Engineer: Dana Downs; Superintendent Strawberry: Ron Walton; Superintendent Waterman: Bob Leslie; Walkers: Danny Sayre, Don Fullmer, Jeff Bright, Bobbie Briggs, Ron Sammeth, Bradley Leonard, Jim Autry.

MWD Construction Manager: John Wallace; Resident Engineer: Mike Bell; Assistant Resident Engineers: Ian Ward-McNally (now in Dorchester, Mass.), Dan McMaster. Information: Brian Fulcher (909) 883-3399, Brian.Fulcher@JFShea.com.

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 joint venture of Traylor Bros., Inc. and J. F. Shea was low bidder at \$198,366,900 in April 2005.

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.



By Jack Burke

The tunnel runs generally east-west across the north end of San Diego County. The west terminus is a shaft 100-ft deep, the east terminus is a portal, and two additional shafts are in between, with depths of around 75 ft. Depth of tunnel varies according to the surface topography, but can be as great as 600 ft. The tunnel encounters varying geology, ranging from extremely hard granitic rock near the ends, to loosely cemented conglomerate in between. Some of the conglomerate may also be tightly cemented. The water table is below the tunnel for approximately half its length, at the 'peaked' middle section of the alignment.

Due to the varying geology, multiple tunneling methods have been chosen. Two open face shields, equipped with excavator arms, and replaceable roadheader type attachments, will mine the conglomerates. These shields will be manufactured by Construction Tunneling Service. A refurbished Robbins main beam machine will mine the rock sections at each end. Conventional excavation methods will be used in a section of tunnel which interfaces the rock and conglomerate in an unpredictable fashion. Drill-blast combined with sequential excavation will be used here.

West Shaft Site/Reach 1: The Robbins TBM completed mining through 4,400 lf of granite on March 31, 2008. The ground variously required ribs, channel or bolts. Machine removal is in process.

Central Shaft Site/Reach 4 West, Reach 3 and Reach 2: The CTS digger shield has advanced 12,000 lf through conglomerate to complete Reach 4 West. Excavation of 550 lf Reach 3, which involved blasting through granite in front of the open faced digger shield, has been completed. The shield then continued into Reach 2, consisting of the Fine Grained Friars formation. Approximately 5,200 out of 9,450 lf has been completed in this reach. Connection into the Reach 1 tunnel is scheduled to occur later this summer.

San Vicente Portal Site/Reach 4 East: Support of the second CTS digger shield is from the San Vicente Portal site. This machine is currently 5,700 lf into the conglomerate of Reach 4 East, where the ground has been consistently hard, and difficult to mine. This Reach is 22,000 ft.

Project Manager: Mike Jateczak. Information: 619-631-0777.

GEORGIA

Atlanta

West Area CSO

Atlanta CSO Constructors

The project consists of 8.5 miles of 24-ft finished diameter tunnel with three intakes and a pumping station. Excavation was completed on the two TBM tunnels using two 27-ft diameter Herrenknecht TBMs. The North Avenue Tunnel was staged from the R.M. Clayton shaft and mined 23,600 lf to the North Avenue CSO intake. The Clear Creek Tunnel was staged from the Rockdale shaft and mined 20,600 lf to the Clear Creek CSO intake. The Tanyard CSO intake is connected to the Clear Creek Tunnel through a 400-ft long connecting tunnel. The Clear Creek Tunnel joins the North Avenue Tunnel at Rock-

dale shaft. The project also includes a section of drill-blast tunnel connecting to an overflow structure at the RM Clayton Site.

Both TBM tunnels are currently being lined in areas of poor ground or groundwater. A portable concrete batch plant has been set up on the Rockdale Site to supply tunnel concrete to both tunnels. In the Clear Creek Tunnel, forms have moved 15,600 ft from Clear Creek toward Rockdale. In the North Avenue Tunnel, forms have moved 11,500 ft from North Avenue to R.M. Clayton. All underground work has been completed at the Clear Creek and Tanyard sites. Chamber lining is under way at the North Avenue site. All diversion structure work is complete at the Clear Creek and North Avenue sites. Intake structure construction is under way at the Tanyard site. Construction of the 85 mgd pump station is being performed by W.L. Hailey as a subcontractor. Pump station concrete work is complete with discharge piping, and other mechanical and electrical work on going.

City of Atlanta: Construction Manager: Ken Johnston.

Atlanta CSO Constructors: Project Manager: Taro Nonaka; Assistant Project Manager: Darrell Liebno; Project Engineer: Adam Stremcha; Safety Manager: Barry Jackson; Survey Manager: Bill Currier; Office Engineer: T.J. Kobayashi; Tunnel Engineers: Percy Townsend, Stuart Sullivan, Koichiro Shimomura; Raj Magam; Arash Sayyar; General Superintendent: Jeff Early; Assistant Superintendent: Ray Beasley.

W.L. Hailey & Company: Project Manager: Randy Wiek; Project Engineer: Mark Palmieri.

JDH JV: Resident Construction Manager: Mike Robison; Resident Engineer: Dave Beck; Project Engineer: Ron Davis; Concrete Specialist: Parvez Sheikh, Project Controls Engineer: James Talley; Chief Underground Inspector: Dave Mundis; Chief Surface Inspector: Wendell Brown. Information: (404) 352-0701 x21.

Flint River Transmission Main Phase II Bradshaw Construction Corp.

Bradshaw was awarded a contract to construct a 1,040-lf tunnel under a railroad and several city streets as part of an 11,000 foot 30-in. sewer project. The 72-in. diameter liner plate tunnel will be mined with a wheel-type soft ground TBM.

Area Manager: Eric Eisold; General Superintendent: Bob Welch.

City of Cumming

Raw Water Intake III, Division I

Bradshaw Construction Corp.

Bradshaw Construction Corp. has been contracted to construct a soft ground raw water intake tunnel under Lake Lanier by microtunneling. The 350-ft by 66-in. tunnel will be constructed of epoxy lined steel casing serving as tunnel support and final carrier pipe. The intake tunnel is part of a pump station project adjacent to the reservoir. The jet grout shaft is nearing completion and the tunnel was scheduled to start in May 2008.

Area Manager: Eric Eisold; General Superintendent: Grahame Turnbull

Snellville

No Business Creek

Mole/Jay Dee/Kassouf/Murray Hill JV

Consists of a 16,000 lf, 12-ft diameter sewer in-

terceptor and storage tunnel as well as five shafts ranging from 70- to 240-ft deep and construction of a pump station and odor control facility.

Shaft 2 (24-ft diameter; 198-ft deep) is complete. Shaft 1 (40-ft diameter; 222-ft deep) is 70 percent complete. Excavation of Shaft 3 (24-ft diameter; 236-ft deep) is under way and should finish by late summer.

The 14-ft diameter by 280 lf drill-and-shoot starter tunnel is under way and was expected to be complete by mid-May. Rebuilding of the TBM head and cutterhead support is complete and shipment to the jobsite is under way. The trailing gear and new VFD drives are nearing completion and shipping to the job is expected to be complete by the end of May. New rolling stock has been delivered from Mining Equipment. Lachel Felice has completed the VECP re-design to drop the tunnel envelope under the soft ground section located near the middle of the alignment.

Key subcontractors and consultants: Lachel Felice & Assoc., American Shoring Inc., Reynolds Inc., Headland Contracting Inc.

Project Executive: Rod R. Shoulders; Project Superintendent: Norman A. Gray; Superintendent: Dick Sink; Project Engineer: Jake Coibion; Office Engineer: Zack West; Health & Safety Manager: Leveius Byrant; Equipment Superintendent: Mike Rule; Walking Boss: Randy Sink, Jacques Daigneau, Kelly Metcalf. Information: Rod Shoulders, (440) 248-0616.

ILLINOIS

Hodgkins

CUP McCook Reservoir

Kenny Construction

The \$60 million CUP project being built for the Corps of Engineers is nearly complete with only final acceptance remaining.

The project consisted of two 11.5-ft and two 8.5-ft ID concrete-lined tunnels approximately 3,320-ft and 850-ft in length, respectively; a 11.5-ft ID concrete-lined access shaft; a 60- by 100-ft underground chamber with a 26-ft ID access shaft approximately 340-ft deep; and a 12-ft ID shaft approximately 320-ft deep for ventilation.

Tunnel Division Manager: Ted Budd; Project Manager: Bob Rautenberg; Project Sponsor: Doug Heinz. Information: Doug Heinz (847) 541-8200; DHeinz@kennyconstruction.com.

Chicago

TARP/CUP – Calumet Tunnel System, Valve Isolation Chamber, TARP Pump Station

Kenny Construction Company

The \$57,126,600 million project involves the splitting of the two pump rooms at the existing Calumet TARP Pump Station. The project includes the excavation of a 20-ft diameter Valve Shaft for access to a new Valve Isolation Chamber where four 4- by 7-ft hydraulically operated bonneted gate valves, a canopy system, sump pumps, a ventilation system and a bridge crane will be installed for the separation. A stair and elevator system will be installed in the 320-ft deep shaft along with an access building at the surface after the chamber is completed. The existing wet well for the existing station will be divided by constructing a new dividing wall to full height of wet well shaft.

In addition to the valve chamber access shaft; there are two 10-ft diameter utility shafts to each of the two existing pump rooms, an additional vent shaft with another 19-ft diameter West Pump Room Access shaft. The new access shaft also includes a stairway and elevator with an access building at the surface. Each of the existing bifurcation legs will be isolated with stainless steel inlet and outlet flumes to/from the new isolation valves. The existing pump rooms will be re-configured and upgraded for larger capacity dewatering pumps.

All of the shafts have been excavated and concreted.

The access shaft to the TARP tunnel gives access to the existing Tarp tunnel that flows to the Pump Station. The flow was diverted to one side of the existing bifurcation and the new valves and flume were installed and encased in the vacated side. The TARP flow was re-diverted into the new flumes and the second flume and valves have been installed. Due to several unseasonable early winter rains and run-off, the existing TARP tunnel was flooded several times hampering access into the tunnel that has delayed the process. Concurrent with this operation was the required demolition and reconfiguration work in the inactive pump room followed by the installation of new TARP pumps. Work in the existing Pump Rooms is complete. Wet well crews have completed the encasement of the flumes and are forming and pouring the divider wall in the existing wet well to complete the division of the system. Crews are the existing wet well, when weather permits, in preparation for the division of wet well into two separate wet wells for the new divided station. Other crews are completing the rock excavation in the new valve chamber for the installation of the two sets of bifurcation valves for the individual pump room isolations.

Tunnel Division Manager: Ted Budd; Project Manager: Mike Surman; Project Engineer: Christian Heinz; Senior Staff Engineer: Donn Renfro; Safety Manager: Ken Dumas; Safety: Dan Brennan. Information: Ted Budd or Doug Heinz (847) 541-8200.

KANSAS

Kansas City

Turkey Creek Tunnel Rehabilitation & Improvements

Mercer/Obayashi JV

Work continues on this complex tunnel rehabilitation project. The substructure repair work including invert excavation, lean concrete placement, and sidewall underpinning is complete. Work is currently progressing well on the structural invert slab and is scheduled for completion in June 2008, followed by tunnel roof support, structural wall repair and replacement and additional contact grouting.

Project Sponsor: M.V. Mergentime; Project Superintendent: Lock Spencer; Tunnel Superintendent: Mike Levy; Tunnel Superintendent: Joey Jennings; CQC Manager: Ron Heater; Corps of Engineers: Bob Schoen; Safety Officer: Al Donaldson. Contact: Mike Mergentime (908) 730-8622.

KENTUCKY

Louisville

North American Project Update

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

The contract for \$33,998,000.00 was awarded in March 2007 for an 8,000 lf fresh water collection tunnel 12-ft diameter with one shaft 230-ft in depth as well as construction of a pump station and four horizontal collector wells.

Excavation of the work shaft and launch tunnel were completed in late February. The TBM was launched in March and as excavated 17 percent of the tunnel as of May. Tunnel crews were stopped by an unexpected infiltration of ground water in late April. The owner, engineer and contractor worked through the differing site condition quickly and TBM mining resumed on May 5.

Key Subcontractors and Consultants: Lachel Felice & Assoc., Bencor Foundation Specialist, Reynolds Inc., Collector Well Int. Inc.

Project Manager: Gevan McCoy; Project Superintendent: Terry Lowe; Project Engineer: Alesia Beck; Equipment Superintendent: Mike Clingon; Walking Boss: Glen Lowe, Chris Stover, Denzel Young. Contact: Rod Shoulders (440) 248-0616.

MASSACHUSETTS

Dorchester

Dorchester CSO Shank/Barletta JV

This project for the Massachusetts Water Resources Authority (MWRA) was awarded to the joint venture with a bid price of \$140 million. It consists of two miles of 19-ft excavated 17-ft segment lined tunnel one pass lining from single shaft.

Both the mining and receiving shafts have been constructed. The EPB TBM arrived from Japan and was off loaded on Sept. 6, 2007. TBM excavation started in October 2007. As of January they had advanced 676-ft and started a two shift operation on Jan. 15 after installing the portal switch and shaft turntable. The push frame and temporary segments were also removed during the shutdown. Mining with a full muck train behind the TBM also commenced on Jan. 15.

Tunnel excavation has passed the halfway point at 5,400 lf. An access shaft is currently being installed to connect to the completed tunnel and excavation of the second half of the tunnel will commence in mid-May.

Chief Engineer: Scott Shylanski; Superintendents: Curtis Bahten and Jim Mulkey.

Contact: Scott Shylanski Shylanski@aol.com.

Viburnum

Doe Run Ventilation Shaft

Frontier-Kemper Constructors Inc.

On July 6, 2006, FKCI was awarded the contract to construct a new ventilation shaft for Doe Run Mining Companies Southeast Missouri Mining and Milling Division (SEMO) at the Casteel Mine near Viburnum, Mo. The shaft will be raised 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 3-months. Still in litigation

NEW YORK

New York City

East Side Access

Dragados/Judlau JV

The project consists of 25,200 lf of 22 ft diameter hard rock TBM excavated tunnels. There are four each tunnel runs two are 7,400 lf and the other two 5,200 lf. The tunnels start from the existing 63rd Street terminus. The job shaft will be in Long Island City in Queens and crews will travel 8,800 ft to the heading. The drill-and-blast excavation consists of 2-each large cross-over caverns between tunnels that will be lined with reinforced concrete. Approximately 11,000 ft of excavated tunnel will be concrete lined. The project duration is 48 months. This \$427 million project is part of the construction program that will allow the Long Island Railroad system into the Grand Central Terminal (GCT) on the East Side of Manhattan.

Both TBMs are mining, the SELI double shield TBM has mined 440 lf on the east top tunnel run. SELI will complete the top tunnel run in early summer. The JV will then need to open GCT 3 cavern for the second top tunnel launch of the SELI TBM. The SELI has mined through some tough shear zones requiring ring steel and shotcrete for initial support.

The Robbins main beam TBM has mined 3,200 lf of the West top tunnel run. The Robbins TBM will complete the top tunnel excavation mid summer. The JV will then excavate the GCT cavern in order to launch the second top tunnel run of the Robbins TBM.

The GCT 3 caverns are WYE caverns that are 325 lf long starting at 4-ft wide extending out to 36-ft wide up to 30-ft high. The caverns will act as crossovers for the Long Island Railroad.

The project is getting all the planning for the future cavern excavation finalized along with equipment procurement. It will be a busy summer at the ESA project.

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 #3, Stage 2

Schiavone/Frontier-Kemper/Shea JV

New York Water Tunnel No. 3 currently being constructed by Schiavone/Shea/Frontier-Kemper JV involves excavation of 27,178 lf of 12-ft, 6-in. tunnel, concrete lining of 45, 899 lf of tunnel to a finished diameter of 10 ft, excavation and lining of nine shafts approximately 500-ft deep, installation of stainless steel pipes in the shafts, and building distribution chambers at the top of the shafts.

Concrete lining is complete in the east tunnel; all 10-ft diameter concrete in the tunnels is complete, all grouting low and high pressure is complete in the tunnels.

Currently placing concrete in the 20-ft diameter bell out. The vertical belt has been removed and 70 percent of the supporting structure from the shaft.

Shaft 29B is complete, Shaft 31B will be complete by early June, work in the distribution chambers continues at Shafts, 30B,28B,27B,24B starting distribution chamber work at Shaft 32B. Working in the Riser Valve Chamber at Shafts

25B and 33B.

Final contract completion is in July 2009.

Schiavone Project Director: Anthony Del Vesovo; Project Manager: Kevin F. Clark; General Superintendent: Dale Estus; Project Engineer: Florentino Sison; J.F. Shea Shaft Manager: Shemek Oginski; Shaft Superintendent: Mike Jennings. Contact: 212-564-8552.

New York City

No. 7 Line Extension

Shea/Skanska/Schiavone JV

Construction of the No. 7 Subway Line Extension was awarded to S3II Joint Venture of J.F. Shea, Skanska and Schiavone by the Metropolitan Transportation Authority in November 2007 and the NTP issued on Dec. 13, 2007.

The contract consists of excavation of two 22.5-ft diameter tunnels, approximately 5,900 lf each; lining 4,880 lf of each tunnel with pre-cast concrete segmental liners; access shaft 100-ft deep; cross-adit and two starter/tail tunnels 400 ft each; one station structure 1,200-ft long constructed in rock with two access shafts and associated drifts; five cross-passages and 140 ft of twin cell box structure; existing tunnel retrofitting; invert lowering and underpinning.

Construction began in February 2008. By May, Shaft A received secant piles excavation support, and soil was excavated, Site P was backfilled to grade and excavation of the shaft started by drilling and blasting in April 2008. Preparation work started at Times Square cover and cut construction area where the tunnels will connect to the existing No. 7 Subway. Major equipment was procured including cranes, loaders, drill jumbos, locomotives and muck cars, as well as two double-shield Herrenknecht TBMs.

Extension of No. 7 Line is a major component of Hudson Yards area development of West Side Midtown Manhattan. When completed, the 7 Line Subway will extend from its current termination point at Times Square to continue west along 41st Street and south along 11th Avenue, past the new station at 34th Street and 11th Avenue and storage tracks continuing down to 25th Street.

S3II Project Director: Jim Marquardt, Deputy Director: Mike Ryan, Assistant Deputy Directors: Carl Christensen and Lars Jemmy; General Superintendent: Mike Jennings, Assistant Superintendent: Tom Gramza, Equipment Superintendent: Kelvin Sampson, Electrical Superintendent: Paul McNally, Director of Engineering: Jim Rosteck, Site Managers: Brian Jepsen, Shemek Oginski, Victor Paterno. Information: Jim Marquardt (212) 216-8500.

NEW JERSEY

Sayreville

Middlesex County Utilities Authority

Kenny Construction

On July 10, 2007, Kenny Construction was issued NTP for the force main 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 lf of 15-ft, 6-in. diameter segmental lined tunnel under the Raritan River between the shafts. The refurbishment of a Lovat EPB TBM has been completed by Kenny forces and is in route to the project. Compressed air interventions will be required to access the cutterhead. Once the tunnel is complete, two 60-in. force mains 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 the launching shaft in the wet and the tremie plug was poured, cured and the shaft dewatered. Crews are currently setting up the shaft for a July launch. Shaft crews are currently excavating the retrieval shaft.

Tunnel Division Manager: Ted Budd; Project Manager: Bob Rautenberg; Superintendent: Mike Quinn; TBM Specialist: Tom Peterson; Electrical Superintendent: Joe Johnson; Project Sponsor: Mike Smithson. Contact: Mike Smithson MSmithson@kennyconstruction.com.

NEVADA

Las Vegas

Lake Mead Intake No. 3

Vegas Tunnel Contractors

On Mar. 20, the Southern Nevada Water Authority awarded a design-build contract for \$447 million to Vegas Tunnel Contractors (Healy/Impregilo JV) includes a 20-ft diameter, 15,000-lf concrete segment reinforced tunnel under the Lake Meade bed. The tunnel will be driven using a hybrid Herrenknecht TBM that will operate in both open and closed face modes and includes trailing gear capable of installing the six piece segment ring. Other tunneling includes 16-ft diameter, 60- to 80-ft shaft in deep water and a 32-ft diameter access shaft on the shore of Saddle Island.

Contact: Jim McDonald.

NORTH CAROLINA

Charlotte

Briar Creek Relief Sewer Phase 1B

Bradshaw Construction Corp.

Bradshaw Construction Corp. has started on a 165-ft long tunnel under Providence Road as part of a 9,600-foot long 60-in. sewer project. The 96-in. diameter liner plate supported tunnel was mined through extremely difficult mixed face conditions, including boulders, and sand deposits right at the crown of the tunnel underlain by extremely hard granite.

Crews have begun excavation of the launch shaft for a 700 lf, 101-in. diameter rib-and-board tunnel that was originally designed as a 25- to 40-ft deep cut-and-cover trench. The plan is to mine the tunnel with a 101-in. diameter digger type shield.

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

Charlotte

Wachovia/Knight Theatre 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, NJ, 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
June 2008

mixed face tunneling with about 16' to 20' 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 and Iwona Tarchala (Jenny Engineering)

OHIO

Columbus

Big Walnut Augmentation (Part 1) / Rick-enbacker 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.

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

Big Walnut Sanitary Trunk Sewer Extension

Kassouf/Mole/Murray Hill/Jay Dee JV

The rock tunnel portion of the project is 98 percent mined. Excavation of the launch shaft for the soft ground tunnel is underway. The concrete bottom portion of the Outfall Shaft has been completed and the riser installation and back filling is underway. Pipe setting in rock is to begin in early June.

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

Marysville

City of Marysville

Super Excavators

Project includes 21,000 lf of 60-in. sanitary sewer (14,800 lf tunnel and 6,200 lf open-cut construction). The project allows for the abandonment of Marysville existing wastewater and transport sewage to the new treatment plant. The 14,800 lf of tunnel is broken down into 20 drives with the longest being 1,056 lf. To date three drives totaling 2,600 lf have been completed. The contractor is using an Akkerman MTBM-SL60 and MT860K keyhole jacking frame. This jacking frame was the first manufactured by Akkerman and previously used in Milwaukee

Project manager: Dave Schlosser. Contact: Dave (937) 642-1393.

OREGON

Portland

East Side CSO

Kiewit/Bilfinger Berger (KBB) JV

So far crews have managed to push "Rosie" over 8,500 ft. However, 13,500 ft. remain on the northbound drive, with the longest stretch (River to Port Center) schedule for completion later this year. Crews are about to begin preparing for the second of six shaft break-ins. All of the slurry walls are now complete and four of the seven shafts are completely excavated. The tremie slab

at the River Street Shaft is finished and project personnel are preparing to begin sinking the Taggart Shaft very soon.

Over 5,000 lf of microtunnel has been completed to date. On March 20, 2008, crews completed a 3,055 linear foot drive from outfall 46-2 to the outfall 46 diversion structure. This is now the longest micro-tunnel drive in North American history.

With operations currently taking place at over a half-dozen different locations along the East Side Industrial Area, the outfall and pipeline work is a major logistical challenge. The vortex concrete was completed at outfall 41; the horseshoe bend was completed at outfall 40; a 75-ton precast manhole was installed at outfall 38-1; intricate formwork was completed at outfall 37-2; and the soldier piles have now been installed at outfall 36.

To stay ahead of tunnel production, the Precast Segment Plant has expanded production to two shifts and has added new molds and a steam curing process. Production is currently about 38 percent complete, with over 18,000 segments (2,250 rings) of the estimated 48,000 (6,000 rings) cast to date.

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

PENNSYLVANIA

Pittsburgh

North Shore Connector

Trumbull/Obayashi JV

All utility removal, relocation, support and replacement work needed for excavation is complete. Support of excavation (CDSM and slurry walls), cut and cover tunnel and station pits, soil stabilization (jet grouting) and instrumentation installation is complete. Mass excavation will be complete by early June. Cast-in-place concrete for the cut-and-cover structures is 40 percent complete and on schedule to finish in early 2009.

The Herrenknecht 6.9 m Slurry TBM began excavation in March and is expected to complete the first 2,200 ft bore by early July. The machine will be u-turned in the receiving pit and resume mining the second 2,200 ft bore by Mid-August. Tunnel completion and connecting structures is on track for spring 2010

Project Manager: Asao Nomura; Construction Manager: John Murray; Project Engineer: Shu Mino; Equipment Manager: Daisuke Sone; Tunnel Engineer: Kenji Yamauchi; Chief Field Engineer: Russ Pollard; Safety Supervisor: Mike Restani; QC Manager: Al Dube; General Superintendent: Randy Marnhout; Tunnel Superintendent: Ron Klinghagen; Electrical Superintendent: Bruce Haight; Shift Superintendent: Bill Gyorf; Equipment Superintendent: David Popes. Consultant: Rick Gomez. Contact Paul Zick (412) 246-0325.

VIRGINIA

Oakwood

Buchanan Mine No. 1

Frontier-Kemper Constructors

In May 2005 Frontier-Kemper was awarded the contract to construct Shaft No. 11 at the Buchanan Mine. This will be the eighth ventilation shaft Frontier-Kemper has constructed for Con-

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sol Energy at the Buchanan Mine since 1989.

The Shaft will be 22-ft in diameter by approximately 2,000-ft deep and will have two water rings, and a shotcrete lined four-way station, pre-grouting of the shaft was performed as a change order and was completed in 2006 and site mobilization began in mid January 2007. The hoist drum and related equipment is in place and the collar excavation has started.

Further Information Contact. Frontier-Kemper (812) 426-2741.

WASHINGTON

Seattle

Brightwater – East Contract

Kenny/Shea/Traylor JV

All microtunnel drives are complete.

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 tunnel has advanced 4000 lf. Consistent production has been hampered by problems with the passive articulation sealing system.

Tunnel Division Manager: Ted Budd; Project Manager: Mark Saylor; Project Engineer: Jake Taylor; Cost and Schedule Manager: Luminita Calin; QA/QC Manager: Tony Huphauf; Grounding Conditioning Engineer: Eric Simonson; Project General Superintendent: Rich Mascarello; Electrical Superintendent: Dale Wold; Warehouse Manager: Terry Walls; Safety Manager: Mike Sarlitto; Asst. Safety Manager: "Chip" Graeber; Home Office Sponsor: Austin Cooney. Contact: Ted Budd (847) 541-8200, TedBudd@kennyconstruction.com.

Brightwater Tunnel – West Contract

Jay Dee/Coluccio/Taisei JV

Site is nearly complete and ready for the Lovat 15-ft, 5-in. diameter EPB TBM delivery. All of the work for the Marine Outfall Connector (MOC) is complete and the area for the Marine Outfall is turned over to contractor Triton Marine. The main shaft is complete, about 28-ft deep, 35-ft wide and 190-ft long. The portal eye is poured, the Micro Tunneling Inc. seal is in place on the eye, the launch cradle is in place and the shaft ready for the TBM. Installation continues on the compressor array for the compressed air interventions including the medical lock and air filtration system. The muck bin is being finished and the conveyors are in place from the muck bin to the end of the pier. All other material and equipment is either on site or will be soon. New muck boxes and frames from Mining Equipment Co. are in route from China and the new Brookville locomotives are being certified by MSHA prior to shipment.

A Lovat 15 ft 5-in. diameter EPB TBM is being manufactured for the tunnel drive and scheduled for delivery by early June of 2008. The concrete segments will be fabricated by CSI/ Hanson JV in Tacoma, WA. All 21,100 lf of tunnel will be from the shaft portal at Point Wells in Richmond Beach, very close to the shore line 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.

JV Managing Partner: Thomas S. DiPonio; Project Manager: Greg Hauser; General Superintendent: Tom McMahon; Project Engineer: Glen Frank; Assistant Project Engineer: Mina Shinouda; Tunnel Engineer: Hiro Uchida; Health and Safety Officer: Andrew Cook; Office Manager: Renee Halley; Microtunnel Manager: Bill Austell of Frank Coluccio Construction Co.; Jet Grout Manager: Bobby Partridge; Jet Grout Tech: Guiliano Priest. Contact: Greg Hauser (206) 542-2865.

Brightwater – Central Contract

Vinci/Parsons/FKCI Joint Venture

The North Kenmore Shaft has been completed. The BT-2 Tunnel was started and mined 2,000 lf with about 9,000 lf remaining.

The TBM cradles for BR-3 were installed with associated work to the BT-3 tunnel eye (Bull flex and Phoenix seal). The BT-3 TBM has been assembled cutter head, front, Middle shield 1 and 2, and the tail skin. Mined 450 lf before stopping to install the remaining trailing gear. Start up is scheduled for the end of May.

Ballinger Way freeze shaft has been excavated to 140vf and is scheduled to be completed by the second week of June 2008. The PVC liner by Wisko will be installed and shaft concrete lining will commence.

Project Manager: Lionel Suquet; Project Engineer: Yvonnick Rescamps; General Superintendent: Francois DeLille; Tunnel Superintendent: Jim Nickerson; Equipment Superintendent: Greg Cook; Business Manager: Cheryl Sturdefant. Contact: Dave Rogstad (296) 766-8106.

WEST VIRGINIA

Neal

Cavern #2

Kiewit Construction Company.

April saw the completion of intersection development work. With the current ground conditions, crews were able to add an additional drift to the north eliminating driving the tunnel downhill to the south. At present there are 12 active headings. Through the end of April crews have excavated 13.8 percent of the 1.2 million barrel cavern.

Bolting has been one of the biggest challenges on the project. A Commando Drill has been outfitted to install the Hilti One Step Bolts to supplement the Fletcher Bolter.

Project Sponsor: Bob Stier; Job Superintendent: Matt Swinton; Project Engineer: Bridget Wallis. Information: (304) 453-7030.

WISCONSIN

Milwaukee

Harbor Siphons Project

Shea/Kenny JV

The project consists of approximately 2,100 ft and 2,400 ft of 17-ft horseshoe drill and blast tunnel, with two 20-ft drop shafts and one 30-ft riser shaft.

The shafts range from 250- to 300-ft deep with approximately 190 ft of overburden which has to be frozen into the bedrock by contract. Also a frozen cofferdam of 80 by 250 ft for various pipe connections.

Pipe installation in both the Scott & Barclay and Erie Street shafts has been completed and back filled with concrete. The Erie Street Diversion has been excavated. And the first phase Valve Chambers and pipe completed. The Jones Island

shaft installing pipes and back filling with concrete. The Jones Island Tunnels have been completed and pipes installed and back filled.

Vice President: Martin (Dutch) Vliegthart; Project Manager: Carl Christensen; Office Manager: Bonnie Senkowski; Structure Superintendent: Jerry Straube; Shaft Superintendent: Darrell Vliegthart. Contact: (414) 258-2510.

CANADA - ONTARIO

Vaughan-Region of York

Bathurst and Langstaff Tunnels

McNally Construction Inc.

The project consists of three tunnels; Bathurst two tunnels 2.74-m diameter, each 2.6-km long, Langstaff one tunnel 2.74-m diameter, 3.2-km long.

Mining commenced on the first Bathurst tunnel January 2007. The first drive was completed in December 2007. The TBM is currently being reinstalled for the second drive. Mining commenced late January 2008 and have completed 920 rings/3,680 lf. The TBM is currently passing through an intermediate shaft. Mining is expected to be complete by mid-August 2008.

Mining commenced on Langstaff in August 2007. 11,413- 1.2m (4-ft) long rings have been completed for a total 5,652 lf, with 1,490-rings/5,960-ft to completion. The TBM is 100-ft from the intermediate shaft. The contract involves six access shafts of various diameters. Construction techniques included liner plate shaft, ribs and lagging and secant pile shafts, all shafts are completed.

Project Manager: Steve Skelhorn; Toronto Area Manager: Tim Cleary. Contact: Steve Skelhorn (416) 252-6321.

Richmond Hill-Region of York

19th Avenue

McNally/Aecon JV

The project consists of two tunnels, South 2.74-m diameter, 500-m long and the West Tunnel 2.74 m diameter, 3.3-km long. Mining commenced on the west February 2007 and in December reached the intermediate shaft S3 after completing 2.4km (1.49-miles) of tunnel. The TBM was reinstalled for the second leg. Mining commenced early January.

The EPB TBM successfully completed the 2,940 rings for a total of 11,760 lf with a breakthrough into the terminal shaft on May 2. The TBM will be removed over the next week and the job is expected to be completed by the end of June 2008.

Project Manager: Steve Skelhorn; Toronto Area Manager: Tim Cleary. Contact: Steve Skelhorn (416) 252-6321.

Sudbury

Sudbury South-End Tunnel

McNally Construction Inc.

Project consists of 6.4 km of 7- by 5-ft sewer tunnel excavated in hard rock by drill-blast.

Currently eight headings have been developed with approximately 70 percent of the excavation completed to date. A delay was created with the loss of ground as they approached a creek and concrete was placed from a surface borehole to a form fabricated on site and mining continued. With completion of excavation the tunnels will receive a concrete lined invert. Completion is estimated in December 2008.

Project Manager: Dan McNally. Contact: Ray Hutton (905) 549-6561.