

# North American Tunnel Project Update



by Jack Burke

## CALIFORNIA

### Bakersfield

#### Kern River Powerhouse Rehab

##### Merco Western Inc.

Tunnel rehabilitation work is continuing on Phase I of the Kern River Powerhouse 1 tunnel rehab project. Forebay reconstruction has started, along with the tunnel liner replacement and repairs. Valves and steel frameworks are to be delivered in March 2006. The tunnel lining is ongoing, as well as the new invert at the Forebay portal, scheduled for completion by April 28, 2006.

MercoWestern — Clyde Joseph: project director; Lock Spenser: project superintendent; Bogdan Velcu: project engineer; Jerry Stark: tunnel superintendent; Renn Joseph: forebay superintendent. S.C. Edison — project manager: Terry Falleson; construction inspectors: David Oehley, Hank Chavez, John Feeney.

### Los Angeles

#### Eastside Light Rail Transit Project

##### Traylor/Frontier-Kemper JV

Two Herrenknecht EPBMs were delivered to the site in October 2005. The shields and backup are assembled in the Boyle Station and will be ready for excavation by Feb. 1. Crews completed shoring and excavating Boyle Station Shaft in November for turnover to Traylor-Frontier. Tunnel excavation is scheduled to start in early-February and finish within 12 months. Hayward Baker has grouted the break-in and breakout location for Boyle and Soto Stations. It has also grouted critical structure areas along the alignment. It is currently grouting cross passages and drilling compensation grout holes.

### San Bernadino

#### Arrowhead East and West

##### Shea/Kenny JV

##### East - Strawberry Portal

The Strawberry tunnel has advanced more than 10,000-lf as of early December 2005 — approximately 45 percent of the total drive. Grouting continuously primarily from the cutter head support.

**West - Waterman Canyon Portal:** The Waterman portal has advanced to 4,000-lf, with approximately 22 percent of excava-

tion to completion. Grouting and probing has been continuous, with pre-excavation grouting being conducted to alleviate the water inflow.

To help the situation in the unstable ground, TBM machines in both headings have been modified with new gearboxes, with slurry removal and reclamation systems installed. The ground has so many fines that they overload the conveyor from the screw and deposit the fines in a bathtub built below the conveyor. A muck removal slurry pump is used to transfer the fines and water from the TBM to the reclamation area at the portal where the fines are removed with a cyclone separator and the clean water returned to the TBM.

Ed Marcus, project manager; Bob Gordon, assistant project manager; Mike Belcher, PA; Stuart Lipofsky, project engineer; Renald McInnes, equipment superintendent; Ron Walton, superintendent east. Walkers East: Bob Leslie and Danny Sayre; Don Fulmer and Eddie Meeghan, superintendent west. Walkers West: Kenny Frego, Jeff Bright, Daniel Spenser. Office East: Joe Nagy; West: Dana Downs. MWD program manager: Dan Tempelis; resident engineer: John Townsend. Information: (909) 883-3399.

### Sacramento

#### Lower Northwest Interceptor

##### Affholder Inc.

The TBM holed through into the receiving shaft on Aug. 23, 2005 and was disassembled and transported to the North Shaft and reassembled for the final drive under the Sacramento River. The entire mining system of TBM, conveyor mucking system and all ancillary equipment used on the South drive was installed in the North Shaft. Pipe installation in the South drive has been completed and currently finishing welding of the pipe at which time Pacific Grouting will start annulus cellular grouting and mining commenced on the North Drive.

Once equipment was installed in the North Shaft, mining was started and the TBM holed through into the receiving shaft on Dec. 10, 2005. The TBM and mucking conveyor system was removed and the steel pipe installation started in January.

Project director: Dan Martz, Project Manager: Michael Cash, project engi-

neers: Travis Hartman, Tony Chan, Superintendent: Eric Smith, Safety: Steve Stier, TBM Operator: Tom Hartman, VP Western Operations: Bob Stier. information: (916) 665-2002.

### Sacramento

#### Bradshaw 8 Interceptor

##### Affholder Inc.

The contractor has completed excavation on the 10-ft diameter tunnel using a reconditioned Lovat EPB TBM, with holing through taking place in the first part of November 2005.

Excavation on seven of the nine shafts and manholes is complete with 5 ft to excavate to invert on one and the other will be completed at the end of December 2005. The entire Hanson 72-in. CRP pipe has been installed and Pacific International Grouting was scheduled to complete the final 2,000 ft placing the cellular concrete grout by the end of December 2005.

Area Manager: Dan Martz, Project manager: John Forero, General Superintendent: Perry Dreckshage, Project Engineer: Tolga Tolgan, Safety: Mike Mickelseeley. Resident Engineer URS: Tom Martin. Information: Dan Martz (708) 201-7666, or John Forero (916) 302-7258.

### San Diego

#### San Vicente Pipeline

##### Traylor/Shea JV

Fabrication and refurbishment of the TBMs has begun. Two new open-face digger shields are being built by Construction Tunneling Services (CTS) in Washington. Crews are proceeding according to schedule and are expected to be ready for testing by the end of March 2006, with delivery of the first to follow immediately to the central shaft, where it will mine Reaches 4, 3, and 2. The second shield will be stored until delivery to the Slaughterhouse Shaft, after completion of Reaches 5 and 6. It will be set down that shaft and head west to excavate Reach 4E.

The rock TBM is a used machine being refurbished by Robbins in Solon, Ohio. It was previously used on a project in South America, and has been delivered from Bolivia. The machine will mine Reach 6 first and then be removed to the West shaft to mine Reach 1.

The West shaft, the western terminus of the tunnel, and starting point for Reach 1 excavation, has been until recently put on the back burner. Critical path mining occurs at other locations and an adjacent Contractor has been periodically occupying the site. In early December 2005, mobilization to site occurred, and was immediately followed by the excavation of surface material, thereby lowering the site to required grade. Several thousand yards of material have been removed so far. Shaft excavation will commence in early January, with excavation of 300-ft starter tunnel to follow.

Mobilization to Central Shaft Site has been completed. Erosion control measures, fencing, utilities, offices, etc. have been installed. Numerous pieces of equipment and materials have been delivered here, and some have been subsequently disbursed to the other sites. Shaft excavation has been completed to depth, 75 ft. The shaft is a 62 ft by 30 ft ellipse, supported by 10-in. steel ribs and shotcrete. Excavated material has been stockpiled onsite, according to agreements made by the owner and surrounding property owners/developers.

The Slaughterhouse Shaft Site and the Reach 5 excavation from it, are the project's critical path activities. The site has been cleared, graded and setup for construction. The 75-ft shaft excavation reached bottom, installation of the tunnel eyes have been completed, and excavation of the tunnels has commenced. The shaft is 36 ft in diameter and is supported in the conglomerate with 6-in. ribs and shotcrete. The rock is supported by rock bolts. The tunnels so far have been in granite and have been supported by rock bolts, or ribs in highly weathered zones. Specialized Reach 5 excavation equipment has arrived on site, but most of this will be used in the conglomerate sections of tunnel, and would be needed until late January.

The San Vicente Portal Site has been cleared and graded, shop installed, erosion control measures placed, site access road installed and main office trailers installed. The grading work resulted in the removal of approximately 50 percent of the portal material, without requiring the use of blasting. The remainder was removed using surface blasting, and Traylor-Shea is currently removing the muck and installing rock support. Upcoming work will include preparation for the rock TBM delivery.

Project manager: Mike Jatczak. Information: (619) 631-0777, mobile: (858) 248-9042.

## San Diego

### Lake Hodges Tunnel Project Kiewit Pacific Co.

The design-build Lake Hodges to Olivenhain Pipeline Tunnel, Shaft & Site Development project consists of a 5,848-ft

long, 12-ft, horseshoe-shaped tunnel constructed for the San Diego Water Authority. Excavation of the tunnel will be completed by Drill and Shoot methods. Additional project scope consists of 195-VF raise bore shaft, Installation of 10-ft diameter steel liner and placement of cellular grout.

The tunnel, shaft and portal design aspects were completed to 100 percent in July 2005. All operations relating to the site development and portal excavation and support have been completed. The tunnel excavation started in September 2005. The tunnel excavation operations are currently working three shifts and have completed 1,750 lf of the 5,848 lf to-date.

Personnel (Kiewit): Ray Backen, area manager; Sean Menge, project manager; Jarrett Carlson, project engineer; Mike Shough, tunnel superintendent; Curt Millsaps, tunnel superintendent; Larry Andersen, equipment superintendent; Lee Friedman, electrical superintendent. Personnel (Parsons): Jon Kaneshiro, project manager; Luis Piek, design engineer. Information: (760) 466-1080.

## GEORGIA

### Atlanta

#### Nancy Creek Tunnel

##### Nancy Creek Constructors

Substantial completion of the project was achieved on Dec. 31, 2005 when sewer flow was diverted from the eight intake structures to the tunnel.

Construction manager-City of Atlanta: Ade Abon; Nancy Creek Constructors - project manager: Jamie Bonner; project engineer: Shu Mino; office engineer: Carlo Zara; project superintendent: Jeff Early; assistant project superintendent: John Dempsey; office manager: Dave Willard; tunnel engineers: Luke Everhart, Lance Waddell, Raj Magam, Yoshi Sawamoto, Russ Pollard, Stuart Sullivan; concrete superintendent: Dan McNally. Jordan Jones & Golding: inc. resident construction manager: Mike Robison; resident engineer: Don Einarson; project engineer: Steve Holtermann, chief inspector: Dave Mundis. Information: (404) 352-0701.

### Atlanta

#### West Area CSO Storage Tunnel and Pumping Station

##### Atlanta CSO Constructors

As of Jan. 3, the Clear Creek Tunnel TBM had excavated 1,000 lf and the North Avenue Tunnel TBM has excavated 1,300 lf. The Clear Creek shaft excavation is complete and the Deaeration chamber is being excavated. The North Avenue Shaft excavation is underway. Work on the Pump Station is being performed by W.L. Hailey as a sub-contractor to ACC. The connecting tunnel excavation is complete

and the overflow tunnel has been excavated 550 lf. Surface work is ongoing for the diversion structures at Clear Creek, North Avenue and Tanyard.

Construction Manager-City of Atlanta: Ken Johnston; Atlanta CSO Constructors: Project Manager: Taro Nonaka; Assistant Project Manager: Darrell Liebno; Project Engineer: Ray Hutton; Office Engineer: T.J. Kobayashi; Tunnel Engineer: Adam Stremcha; Project Superintendent: Jeff Early. JDH Joint Venture: Resident Construction Manager: Mike Robison; Resident Engineer: Don Einarson; Project Engineer: Randy Divito. Information: (404) 352-0701.

### Atlanta

#### Greensferry Sewer Separation Project W.L.Hailey & Co. Inc.

The Greensferry Project being constructed for the City of Atlanta is under way. W.L.Hailey will install 1,200 lf of 72-in. diameter hand-mined tunnel and relocate 300 lf of 120-in. diameter reinforced concrete pipe as a sub-contractor to Metals and Materials Engineers (MME) The project is located in historic Washington Park.

Civil operations manager: Randy Wiek, project manager: Bill Haworth, superintendent: Mike Rast, tunnel superintendents: Sid Haney and David Chambers, project engineer: Ashley Quinn, foremen: Larry Todd and Duwayne Corey. MME project engineer: Dunstan Campbell. Information: Donald Ackerman (615) 255-3161.

### Atlanta

#### Indian Creek Sewer Project Bradshaw Construction Corp.

Bradshaw has been awarded the remedial work to re-mine and correct grade problems with the sewer pipeline installed by Modern Continental on the Indian Creek Sewer Project. Portions of the pipe "floated" while backfilling the tunnel. Mobilization started in January 2006.

Project Manager: David Wanhatalo, Superintendent: Frank Jones.

## ILLINOIS

### Chicago

#### TARP-Calumet Tunnel System, Little Calumet Leg Affholder/Jay Dee

Through the end of September 2005, Affholder had completed all TBM excavation and concrete lining of the tunnels, concrete lining of the construction shaft and the vent shaft, 2,030 lf of the drill-and-shoot tunnel with concrete lining in place and concreting of the lower air separation chamber. Jay Dee has completed 29,197 lf of RCP sewers, all 10 of the drop shafts including the boots, exit conduits and tunnel connections are excavated and concreted to the surface, all of the soft ground shafts

are excavated and all but five have been completed and the structures backfilled.

Work continues on the microtunnel EPB excavation for a 42-in. RCP sewer, the clean up and restoration of the surface sites and the connection to the Existing Indiana Tunnel. The final connection to the Indiana Tunnel was to be completed by December 2005, so flows from the existing sewers could begin being diverted into the new system. Contract completion is for spring 2006.

Greg Hauser: project manager for the joint venture and Jay Dee; Jim Foley: project engineer; Brian Christ: senior safety superintendent for the JV and Jay Dee; Renee Halley: office manager for the JV and Jay Dee; Louie Shapiro: soft ground superintendent; Tom McMahon: rock superintendent; Jack Kruszewski and Greg Slusher: field engineers. For Affholder, James Byrd is area manager; Len Postregna is project manager; Ben Gasik is project engineer; Terry Beesley is project superintendent; Milan Jovanovich is tunnel superintendent; Harry Gajan is concrete superintendent; Lisa Setser is office manager; Jim Eichberger is purchasing agent; field engineer is Narcizo Garcia; Darrell Grimes is safety superintendent. Information: (708) 201 7166.

**Calumet Tunnel System  
TARP Pump Station,  
Valve Isolation Chamber  
Kenny Construction Co.**

The 320-VF valve access shaft has advanced to grade and drilling and shooting of the first phase of the chamber has been completed. The overburden and drill shoot excavation of the West Pump Room Access Shaft and access-way has been completed. The lining of the access-way and the shaft will start after the completion of the Valve Access shaft concrete

The overburden of the access shaft to the existing TARP tunnel is scheduled to start in late January 2006. This will be followed by the lining of the shaft and diversion of the existing TARP flow to one side of the bifurcation so the new valves and flumes can be installed in the vacated side and encased. Concurrent with this operation will be the required demolition of the inactive pump room followed by the installation of the new TARP pumps. Crews will also be working in the existing wet well in preparation for its division.

Ted Budd: tunnel division manager; Mike Surman: project manager; Christian Heinz, project engineer; Jess Rhynes, superintendent; Ken Dumas, safety manager; and Luminita Calin; cost and schedule manager. Information: (847) 541-8200.

**Hodgkins  
C.U.P. McCook Reservoir  
Kenny Construction**

The \$60 Million C.U.P. project being built by Kenny Construction for the Corps

of Engineers is in the final stages of completion. All of the below ground concrete work has been completed. The below ground mechanical and electrical work is going through final testing and punch list items. The shaft piping is complete and the control building at the surface is under construction with an early summer completion anticipated.

Ted Budd: tunnel division manager; Bob Rautenberg: project manager; Paul Lauricella: safety manager; Jack Finn: superintendent; Doug Heinz: project sponsor. Information: (847) 541-8200.

**Hodgkins  
MWRD McCook Haul Tunnels  
Kenny Construction Company**

Crews completed the drill and shoot haul tunnels in early December 2005. The paving of the 2,100 lf long tunnels was completed the second week of January. Crews are demobilizing from the haul tunnels and moving to a follow-up project for Vulcan Materials that includes and access decline to the newly completed tunnel and development of a starter pi for future quarry development.

Doug Heinz, Kenny Construction Co. project sponsor. Ted Budd, tunnel division manager; Bob Rautenberg, Project Manager; Paul Lauricella, safety manager; Jack Finn, superintendent. Information: (847) 541-8200.

**INDIANA  
Griffith  
Cady Marsh Drainage Ditch Tunnel  
Jay Dee /Kenny Construction JV**

The Lovat soft ground TBM has advanced to the retrieval shaft and crews are cutting the lining for entry and removal of the machine. Setting up concrete lining operations for the reinforced concrete lining and dewatering the last section. Anticipate concrete operations completion by April 2006 and structure work and outlet conduit wrap up in June 2006.

Project manager: David Stacey, Project Engineer: Jason Cade, General Superintendent: Jerry Pardon, Quality Control Manager: Steve Jensen. Information: (708) 473-5473.

**MICHIGAN  
Grand Rapids  
Christman Co. Tunnel  
Kiewit Construction Co.**

This project for the Christman Co. consists of 100 lf of 19 ft by 18 ft NATM tunnel excavated in clean sands under Michigan Street in Grand Rapids, Mich. Drilling for chemical grouting program is under way; this work is being performed by subcontractor Nicholson Construction, Pittsburgh, Pa.

Personnel Kiewit Construction Co. superintendent: Paul Madsen, Project engineer: Ricardo Garcia, tunnel field engineer: James Coit. Information: (713) 297-2755.

**MISSOURI  
St. Louis  
Baumgartner Tunnel**

**Frontier-Kemper/Gunther Nash JV**  
The TBM "daylighted" Dec. 15, 2005, and was dismantled and removed from the receiving shaft — along with the support equipment — in late December. Tunnel cleanup was completed in late January and installation of the reinforced carrier pipe started in February 2006. Cast-in-place concrete work at the Deaeration chambers is being completed and surface work will continue to the end of the project with scheduled completion May.

Project manager: Jim Nickerson, Information: (314) 293-0058 or (314) 261-2611.

**NEW JERSEY  
Weehawken  
Weehawken Tunnel/  
Bergenline Ave. Station  
Frontier-Kemper/Shea/BUM JV**

Weehawken Tunnel is approaching completion. Almost all electrical and mechanical systems have been tested. The SCADA system is approaching completion. SCADA will be the brains of the light rail station. This system will control many of the fire life safety items, and communicate with the overall Hudson-Bergen Light Rail system SCADA which controls system-wide train operations, signals and communication. The three elevators have been installed and are in the final test phase.

Training sessions are being conducted on the various systems, equipment and components. The elevators will bring the commuters down to the station platform where they can board the Hudson Bergen Light Rail Trains. Granite flooring has been installed on the platform and the platform finish work is nearing completion. One of the last items at the platform level to complete is the installation of the ceiling panels. The race is on above ground at the plaza to complete the surface work. Concrete base slabs and architectural finishes are almost complete. Site work is moving along as fast as possible. The winter weather has not helped progress. Granite pavers installation at the plaza level will start as soon as the concrete slabs are finished. Trains will be running through the station by Jan. 27 for integrated system operational testing, and revenue service is scheduled to start by February pending completion of all fire and life safety items.

Project director: Vinny Sambrato, project manager: Leon Jacobs, general

superintendent: Ed VanDerPas, project engineer: Paul Dixit, tunnel superintendent: Mike Kruz, walking boss: Rick Deel, Bobby Briggs, Leroy Jenkins, Dale Blood, Profit. Lead field engineer: Bill Fetters. Plaza Superintendent: Dave Dorfman, Jay Stone. Equipment manager: Chuck Hoeltling, Procurement manager: Ray Crane. Jim Marquardt and Jim Rosteck on temporary assignment for J.F. Shea. Manager, Washington Group: John Mackintosh. Information: (201) 866-6800.

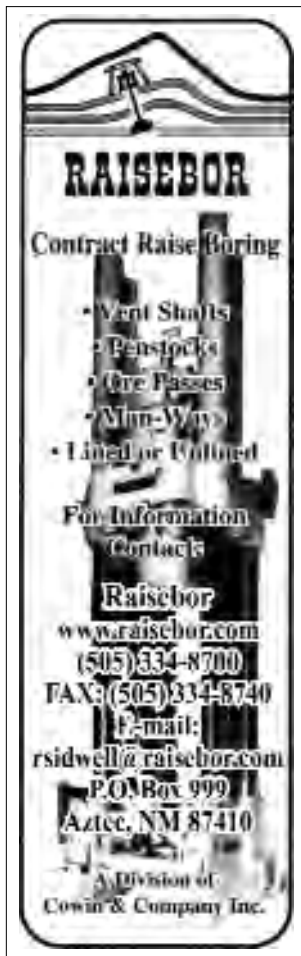
## NEW YORK

### Long Island City

#### Amtrak Ventilation Shaft Reconstruction. Granite Construction Northeast

Shaft demolition is nearly complete. Construction of the new ventilation facility has already begun with project completion scheduled for 2007.

Project manager: Steve Price has been moved back to the regional office as the chief engineer for Granite Northeast, Kerem Acar is project manager; Jason Stevens project engineer, Brian Reilly, general superintendent, Tony Marshall, business manager.



## New York

### Water Tunnel #3 Stage 2

#### Schiavone/Frontier-Kemper/Shea JV

North Tunnel excavation was completed in September 2005 and the TBM backed out and assembled in the east starter tunnel to complete the remaining 13,035 lf of the east tunnel drive. South tunnel excavation was completed under a previous contract. Mining commenced Jan. 3.

As part of the \$658 million joint venture project, J.F. Shea Co. is excavating and concrete lining nine shafts, 550 VF each. Site preparation and mobilization has been completed at seven locations. Four shafts on the Southern portion have been raise bored 430 VF each. The overburden has been frozen under a sub-contract by Moretrench America for ground support to rock which ranges from 60 to 110 ft. Shafts 27B and 31B have been excavated through the frozen ground and slashing operations by drilling and blasting method is ongoing to oversize the upper shaft from 12 ft, 6 in. diameter to 34-ft diameter. Concreting started in January 2006 for the largest diameter of 26 ft in these two shafts. The next diameter (22 ft FD) will be slashed out and lining poured, followed by the 14-ft and 11-ft, 6-in. diameter finished lining. Raise bores have been completed in Shafts 30B and 28B and the overburden excavation of shafts 30B and 28B has just begun. The bottom parts of the shafts will be lined to a finish diameter of 10 ft.

Drilling and blasting of the adit at Shaft 25B is complete and currently setting up for raise bore operation, starting drill blast operations at Shaft 24B. Currently mucking out in the south tunnel all the rock from the raise-bores and the slashing of the shafts. A total of eight shafts sites have been set up.

The distribution chamber excavation (70 ft by 70 ft by 30 VF) for shaft 25B was completed by drilling and blasting and prepared for the raise bore. The support of excavation for Shafts 24B and 32B is ongoing, which will be followed by conventional drill and blast excavation of the distribution chambers.

Schiavone vice president: Tom King, project manager: Anthony Del Vescovo; project engineer: Florentino Sison; general superintendent: Dale Estus, shaft construction manager: Jeff Salai, shaft superintendent: Mike Jennings. DMJM+Harris subcontractor to Jenny Engineering/URS for construction management. Information: (212) 564-8552.

## Ticonderoga & Willsboro

### CPR Tunnel Clearance Project

This project involved the enlargement of two existing railroad tunnels for Canadian Pacific Railway (591 and 433 lf), rock reinforcement and improvement of the existing drainage system. Drill and

shoot excavation was used to heighten the existing tunnels from 1 to 3 ft. Drilling, blasting, scaling mucking had to be performed during a five-hour track window with limited access.

The project was started on June 28, 2005 and completed Nov. 18, 2005.

Engineer: Hatch Mott Macdonald, Engineering Manager: Rich Buck; Contractor: Kiewit Construction, Job Superintendent: Todd Cummings, General Superintendent: Ken Quintana. Information: (402) 681-9394.

## NORTH CAROLINA

### Charlotte

#### Irwin Creek Relief Sewers Contract II Bradshaw Construction Corp.

Bradshaw Construction Corp. is currently constructing multiple shafts and tunnels associated with the sewer improvement program commissioned by the Charlotte-Mecklenburg Utilities Department (Irwin Creek Relief Sewers-Contract II) The general contractor is Rockdale Pipeline Inc. and the project was designed by CDM. Shaft and tunnel excavations have encountered rock which has slowed progress. The contractor, engineer and owner are currently working their way through these problems in a professional manner.

Rockdale project manager: Ken Richardson; Rockdale Superintendent: Jerry Morrow.

### High Point

#### Deep River Outfall Project, Segment 2 Bradshaw Construction Corp.

Bradshaw Construction Corp. is finishing construction on the last tunnel for a sewer project in High Point, N.C. The project is being financed by the City of High Point. The engineer is DMP. The general contractor is Thalle Construction.

The last tunnel crosses under Business I-85 and US-29. The 280-lf of tunnel was started using an 83-in. Jarva rock TBM. After tunneling 23 ft from the end of the starter tunnel, completely decomposed rock was encountered in the roof of the tunnel. The TBM was removed and hand-mining techniques using 96-in. steel ribs and wood lagging were used to advance the tunnel through the mixed face conditions requiring blasting the bottom while supporting the roof. Multiple shafts and tunnels were constructed for the BCC for the 60- and 66-in. Hobas pipelines through rock and mixed geology. BCC successfully installed and backfilled the pipelines.

Thalle project manager: Chris Haverstraw, Thalle superintendent: Eric Khuenel; Bradshaw project manager: Eric Eisold, Bradshaw superintendent: Franks Jones. Information: (401) 461-4466.

## OHIO

**Cleveland****Mill Creek Contract 3  
KM&M&K JV**

Mining of the main tunnel continues. Approximately 13,000 lf of the tunnel has been mined and with 2,000 lf remaining. Shaft 9A construction is complete. Shaft 12A construction is nearing completion and Shaft 12 construction is to start soon.

Project manager: Robert J. Kassouf; Project Superintendent: Ralph Dodero. Information: (216) 651-3333.

**Cleveland****Tuxedo T230 (KM&M)  
KM&M JV**

The 10,700 lf of tunnel being constructed for the Northeast Ohio Regional Sewer District has been excavated and installation of the carrier pipe has been completed. Shaft construction is under way.

Project manager: Robert J. Kassouf; project superintendent: Ralph Dodero. Information: (216) 651-3333.

**Columbus****BWARI****Jay Dee/Michels/Traylor JV**

The excavation has advanced to station Ring No. 1968 station 108+78.68. Crews have mined 9,962 lf to date (starting face station was 9+16.48) and are currently 47 percent complete with the tunnel drive. All jet-grouting has been completed, in addition to all of the drilled access and drop shafts at Manhole Nos. 3, 4, 5, 6 and 7. Crews are currently water blasting the connections to the tunnel from the shafts as they pass in order to move up the tunnel ventilation. Tunnel connections have been made at S/M Nos. 2, 3 and 4.

Installation of the California Switch in the tunnel has just been completed, adding an extra train to the mucking sequence when it is necessary. Hand mining operations will start in February to construct a 500 lf 4-ft by 4-ft tunnel for installation of a 36-in. sanitary sewer connection to Manhole No. 7.

Big Walnut Creek Crossing subcontractor George Igel Co. has diverted the river flow, excavated the creek bottom and installed the concrete cap. The tunnel passed under the river with no difficulty. The site has been restored and seeded. Progress on the job is going well, on schedule and crews have not experienced any major problems.

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., Gary Bulla and James Joyce; Lachel & Assoc., geotechnical design:

David Chapman and Glen Frank; Jay Dee/Michels/Traylor JV: Michael DiPonio, project manager; Jeremy Theys, project engineer and Tim Awald, project superintendent. Information: (614) 491-9551.

**Columbus****BWOAS****McNally/Kiewit JV**

With completion of the shaft the Lovat TBM was assembled in the shaft area, with no tail tunnel to work with all the components had to be assembled in sections on the surface and some suspended in the shaft while room was made for their assembly to the TBM as they turned under with the cutterhead, and initial mining and shakedown of the machine started.

As of mid-December a total of 20 rings have been installed. Modifications to the Lovat TBM have been completed and mining operations are ready to commence to allow for completion of assembly of the trailing gear and start of full mining operations. The open-cut work is proceeding as planned.

Project sponsor: Larry Lenahan; project manager: Steve Skelhorn; project operations manager: Tom Szaraz; project engineer: Gary Bulla; project superintendent: Richard Boutelle. Information: (614) 491-2800.

## OREGON

**Portland****West Side CSO Tunnel, Shafts,  
Pump Station & Pipelines****Impregilo/S.A. Healy JV**

All tunneling and microtunneling is complete, while shaft build-out, drop structures and tunnel tie-ins at the various shafts are underway. The Clay Street shaft is essentially complete and Upshur Shaft build-out is progressing. Work on the Ankeny Shaft build-out and the Ankeny Diversion Structure is underway, as is the Nicolai Shaft and Diversion Structure.

The final ground level deck in the pump station has been placed and surface access rooms are under construction. Mechanical and electrical work is in progress. The operations and maintenance building adjacent to the pump station is structurally complete. Construction of a 115-KV substation has begun.

Project director: Giuseppe Quarta; manager: Jim McDonald; construction manager: Renzo Ceccato; deputy construction manager: Brad Bush; chief engineer: Jim Kabat; tunnel superintendents: Mickey Aliff, Valerio Violo; microtunnel superintendent: Red Blanchette; shaft superintendents: Bill Kiehl and Gary Svicarovich; safety manager: Boodie Hurd; City of Portland program manager: Paul Gribbon; Jacobs Associates construction managers: Greg Colzani and Craig Kolell. Information: (503) 595-4400.

## RHODE ISLAND

**Providence****Deep Tunnel CSO Project  
M.L. Shank Co. Inc.**

The main Spine Tunnel, 26 ft in diameter and 16,215 lf long, was turned under in March 2004 and the TBM holed through into the Foundry Shaft on Dec. 1, 2005. The breakthrough came within 1 in. of line and grade for the three miles of tunnel. Removal of the TBM started immediately with all components being removed through the foundry shaft.

Progress on the adits continues. A 12-ft horseshoe 70-ft long and 8 ft, 9 in. has been completed. The 800-ft long, 12-ft horseshoe excavation and lining is completed, as is the excavation of 1,800 lf with 50 percent of the concrete. Excavations and the last pour of concrete was completed Aug. 23 and a 200-lf excavation and concrete has been completed. The 800-lf five has 120 lf left to mine, with concrete operations to follow. The 695-lf excavation and concrete have been completed.

On the surface, the top muck stacker and belt have been removed. The vertical shaft conveyor has been removed. Currently erecting the concrete batch plant at the main working shaft and expect to start full concrete lining operations using Everest Forms in the shaft and tunnel early 2006.

Project director: Mike Shank; general manager: Gerry Stokes; project manager: Steve Minassian; chief engineer: Dave Girard; field engineer: Scott Shylanski; tunnel superintendent: Curtis Bahten; QC manager: Nick Torello; superintendent: Jim Mulkey; P.A.: Jim Hinashian; safety: Eric Stalman. Information: (401) 941-1495.

## SOUTH CAROLINA

**Rock Hill****Sumter Avenue Storm Drain Project  
Bradshaw Construction Corp.**

Bradshaw Construction is currently preparing to start tunneling under a railroad to install an 84-in. storm drain as part of the Sumter Avenue Storm Drain project commissioned by the City of Rock Hill and designed by Armstrong Glen. The general contractor is Garawco Inc. The final lining is reinforced pneumatically applied concrete on steel liner-plate/casing.

Project manager: Eric Eisold, superintendent: Jerry Simon.

## VIRGINIA

**Chantilly****Dulles West APM****Clark/Shea JV**

At the Dulles West APM Project the NATM tunnels continue their mining progress, with approximately 450 lf of top heading remaining at the beginning of December 2005. Hole through of the

North tunnel was expected in late January 2006 and completion of the excavation of the dead-end South tunnels is expected at the same time.

The cut-and-cover excavation next to the Main Terminal also continues, with bottoming out expected in late January. This progress means the concrete operation shifts into gear in February, typically a month for difficult weather.

### **Chantilly**

#### **Dulles East APM**

#### **Atkinson-Clark-Shea JV**

The \$230 million East Tunnel project for the automated people mover was awarded to the joint venture and mobilization is under way. The project will consist of twin NATM tunnels 427 ft long, 4,500 ft of TBM bored tunnel with segment support and the segments will be cast locally by the joint venture of Traylor/Sea/Ghazi, Palmdale, Calif. Included is 7,000 lf of APM cut-and-cover box structures, and construction of two 400-lf underground stations, including architectural and mechanical fit out.

The East APM project continues to excavate the cut-and-cover trench for the APM boxes along the 8,500 lf of airport property. Sub grade has been reached in three work zones, allowing structural concrete operations to staff up.

The Tier 3 East Station concrete operation is pouring track slabs, getting up out of the wet siltstone just in time for winter. The Tier 1 East Station excavation has reached sub grade in several areas. Preparation of the mud slab work is under way; the crews are racing to have the TBM drag-thru slab poured before the TBM holes thru into the Station, anticipated to be in late January. Both TBMs are onsite, one mining and the other was to have been erected in December 2005.

Passengers using the A and B Concourse at Dulles get the opportunity to observe the work when standing on the bridge that spans the Tier 1 Station. These observers add a new meaning to the label of sidewalk superintendents.

Project sponsor: Allan Sylvester, project managers: Curt Allen, Peter Chase, project engineers: Rick Wymelenberg, Adam Rosmarin, general superintendent: Pete Zagorin, NATM tunnel superintendent: J.D. Martin, NATM project engineer: Brian Chandlee. Parsons Management Consultants resident engineers: Dominic Cerulli, Rick Munzer. Information: (703) 572-5757.

Project manager: Mark Rybak; general superintendent: Larry Rigsby; equipment superintendent: Kelvin Sampson; electrical superintendent: Don Magyar; Walker: John Hammer; chief field engineer: Rob

White, office manager: Bertha Sampson. Information: (202) 345-1087.

### **Chantilly**

#### **Dulles West Utility Tunnel**

#### **Kiewit Construction Co.**

Finalizing structural concrete and mechanical/electrical in the vent structure. Expected project completion in early spring 2006.

Underground sponsor: Dave Rogers, general superintendent: Joe Cagenelli, tunnel engineer: Paul Madsen, equipment superintendent: John Mulley, concrete superintendent: Bhaskar Bhavsar: Information: (703) 661-8770.

## **WASHINGTON**

### **Seattle**

#### **Beacon Hill Tunnel**

#### **Obayashi Corp.**

As of Dec. 31, 2005, the main shaft/headhouse excavation with tiebacks is down 180 ft; top four drifts of the Concourse Cross Adits are complete and excavation of the lower four side drifts has begun. Jet grouting over the platform tunnels is complete. Excavation of the ancillary shaft/headhouse will begin by mid-January. East Portal development work is nearing completion. The 6.5-m Mitsubishi EPB-TBM was scheduled to start mining mid January. Pre-cast segment production is 7 percent complete. Work on the aerial section began Sept. 1, 2005. The drilled piers are complete and work has started on the concrete track way sections.

Sound Transit jobsite personnel: John Critchfield, resident engineer; Zeph Varley, station project engineer; Clement Wiggins, tunnel project engineer; Rick Capka, office engineer; and Roger Smith, construction engineer. Obayashi Job Site Personnel: Masaki Omote, project manager; Steve Redmond, tunnel manager; Rohit Shetty, SEM manager; Nick Garavelli, TBM project engineer; Gregg Olsen, project engineer; Billy Hahn, safety manager; Jon Kirk, business manager; Jim Hyatt, shaft superintendent; Rob Stark, equipment manager; Duke Wilhite, surface superintendent; Satoshi Akai, SEM engineer; Yoshi Sawamoto, equipment manager; Tomo Kudo, EPB tunnel engineer; Bob Clucas, structural manager; Darrel Dobson, structural superintendent, Russell Nash. Information: (206) 262-0665

### **Bothell**

#### **Brightwater Conveyance System - East Contract**

#### **Kenny/J.E. Shea/Traylor JV**

King County awarded the Brightwater Project to the joint venture of Kenny Construction (Sponsor)/J.E. Shea Co. and

Traylor, on Dec. 29, 2005, after a lengthy protest by the second bidder, Jay-Dee/Coluccio, JV. The \$130.9 million project will get underway in February, after the Jan. 30 Notice to Proceed. The scheduled completion date is Aug. 28, 2009. The project located in Bothell, Wash., is in both King and Snohomish counties.

It is the first of the major projects scheduled by King County to complete the Brightwater System. The East Contract consists of the following major elements: 14,050 ft of 18 ft, 10 in. EPB TBM mined tunnel using 16 ft, 8 in. ID bolted, gasketed precast concrete segments for a primary liner; installing and grouting 14,200 ft each of 48-, 66-, 27- and 84-in. diameter pipes inside the tunnel, along with three runs of fiber optic cable; 2,430 ft of 72-in. in diameter microtunnel including three shafts including structures; one intercepting structure to mine from that is 74 ft deep and 80 ft in diameter with 130 ft deep slurry diaphragm walls, tremie slab and final concrete wall lining; one influent pump station shell 83 ft deep, twin 84 ft inside diameter cells, with 160 ft deep slurry diaphragm walls, tremie slab and final lining; two short 12 ft in diameter connector tunnels; one extraction shaft 40 ft deep x 40 ft wide and 140 ft long for connection to new treatment plant piping.

Until a site office is set-up in Bothell, inquiries can be directed to Ted Budd at Kenny Construction Co., 250 Northgate Parkway, Wheeling, IL 60090. Information: (847) 541-8838, E-mail: ted-budd@kennyconstruction.com, acooney@kennyconstruction.com, jmkennedy@kennyconstruction.com.

## **WISCONSIN**

### **Milwaukee**

#### **Elm Road Generating Plant – Cooling Water Intake System**

#### **Kenny Construction Co.**

Marine crews completed the 2005 season work on the first two of the four drilled intake shafts. The 2006 season will include the completion of the first two followed by the completion of the remaining two. The overburden excavation using a 32-ft ID caisson method to the rock for the first of three land based shafts is under way with a late January completion of the 80-ft of overburden. This will be followed by the drill-and-shoot excavation to complete the 200-ft deep shaft where the erection chamber will be excavated for the 27-ft, 4-in. TBM. The machine is currently being rebuilt by the joint venture forces in Milwaukee.

The first season dredging operation in the Intake Channel has been completed. This will be followed by the dock wall steel

sheeting cofferdam placement followed by the second deep land based shaft.

Ted Budd: tunnel division manager; Paul McDermott: project manager; Jon Isaacson: project engineer; Austin Cooney: home office sponsor. Information: (847) 541-8200.

### Milwaukee

#### Northwest Side Relief Sewer

##### Shea/Kenny JV

The project is being demobilized with final punch list work being completed. Anticipate closing the project late February 2006. Project manager: Marten (Dutch) Vliegthart, Project Engineer: Carl Christianson, Master Mechanic: Keith Walters, Office manager: Bonnie Senkowski. Information: 414-258-2510

### Rosemont

#### Empire III

##### Ames Construction, Jay-Dee Sub

Jay Dee has subcontracted the pipe jacking of 3,400 lf of 78-in. ID Hanson heavy wall reinforced concrete pipe. Currently setting up on the site and mobilizing equipment. Empire II has been bid and Ames is low bidder with Jay-Dee to do the jacking of 4-5,000 lf of 66-in. Hanson Heavy wall RCP in three runs: one 3,400 lf two runs of 600 lf each. Information: Glen Rorison (734) 591-3400.

### CANADA BRITISH COLUMBIA

#### North Vancouver

##### Seymour-Capilano Filtration Project Bilfinger Berger (Canada) Inc.

The (SCFP) comprising the construction of water filtration, transmission and pumping facilities in North Vancouver is well under way. The Seymour-Capilano Twin Tunnels portion of the work commenced in the fall 2004, with the contractor mobilizing equipment and personnel.

The Seymour Shaft collar was excavated and poured in December 2004 and the shaft sinking in dense glacial deposits commenced in January 2005 from an elevation of 179.8 m asi. A sloping bedrock contact was encountered (as expected) at 27m depth from the surface. Drill-and-blast excavation continued in meta-volcanics and grano-diorites for a further 142 m. The bottom of the 11-m ID shotcrete and rockbolt supported shaft, at elevation 0m asi, was reached on Nov. 11, 2005 without a serious accident.

Drill-and-blast operations to excavate the shaft bottom chambers required to install and launch the two Robbins TBMs commenced on Nov. 14, 2005, and are expected to continue through February 2006. The two new 3.88-m diameter Robbins machines will sport

19-in. cutters. Mucking will be by locomotive and high capacity shaft buckets, utilizing an integrated Bilfinger Berger system design.

The TBM drives will be approximately 7,130 m long and down drive to elevation -150 asi to Capilano, adjacent to the Cleveland Dam and underneath the newly constructed pump station. Two 4-m raise-bore holes will connect the Capilano shaft bottom chamber to the surface and 3-m ID steel pipe liner will be installed in selected areas of the excavations

Greater Vancouver Regional District (GVRD) provides supervising engineers. Project manager is Pacific Liaison & Associates Inc., a subsidiary of SNC Lavalin, design and construction management engineer is Hatch Mott MacDonald and the tunnel contractor is Bilfinger Berger (Canada) Inc. (BBC)

GVRD-Tom Morrison, senior project engineer tunnels; Doug Neden, manager Water Treatment Engineering, Goran Oljaca- Senior Engineer. PLA - Andy Saltis- Area manager Tunnels, Jeff Spruston- PM for SCFP, Brian Gardner - Project Director & VP Project Services. HMM Dean Brox- RE, Joe Rotzien-ARE (geology-Golder as sub to HMM-Grant Bonin). BBC- Christian Genschel-PM, Joseph Messner-CM. Information: Andy Saltis (604) 982-3197.

## Long Term Positions Available in the Pacific Northwest

The following construction personnel are needed for a tunneling project in Oregon: Inspectors, Safety Personnel, Project Managers, Schedulers, Operators, Welding Inspectors etc.

We are looking for the following construction personnel with a background in tunneling (mining), particularly personnel familiar with handling and working with heavy and specialized construction equipment such as shielded tunnel boring machines (TBMs), segment erectors, locomotives, shovels, or grouting equipment etc. underground.



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