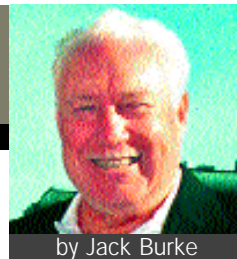


North American Tunnel Project Update



by Jack Burke

CALIFORNIA

Bakersfield

Kern River Powerhouse Rehabilitation
Merco Western Inc.

Tunnel rehabilitation work is nearing completion on Phase II of the Kern River PH1 Tunnel Rehab Project. Forebay reconstruction concrete work is complete, as butterfly valves and slide gates have been installed and steel platform and electrical work are in progress. Helicopter lifts were utilized to install the valves. Tunnel 19 Liner is complete and crews are removing the temporary construction rail and preparing for a substantial completion date of May 22, followed by a week of testing to be able to run water for power generation. Phase III work is planned for remedialization in September 2007.

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

The Eastbound TBM was installed and tested on the Eastside LRT Project in January and February. The machine was launched in late Feb. and has progressed 1,000 lf. Crews are working two eight-hour shifts and production is increasing to expected levels. The Westbound TBM was installed and tested in February and March. The machine was launched in late April and has progressed 100 lf. Crews are working one eight-hour shift until the entire machine is buried and a switch is installed. Hayward Baker is continuing the grouting of critical structures and cross passages along the alignment.

San Bernardino

Arrowhead East and West
Shea/Kenny JV

East: Strawberry Portal

The Strawberry tunnel has advanced more than 12,000 lf as of May 2 — more than 50 percent of the total drive. Grouting continuously primarily from the cutter head support.

West: Waterman Canyon Portal

The Waterman portal has advanced to 6,235 lf with continued difficulty with the ground and water conditions. Grouting and probing continuous, with pre-excavation grouting being conducted to alleviate the water inflow.

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 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: Brian Fulcher (909) 883-3399.

Sacramento

Bradshaw 8 Interceptor
Affholder Inc.

The excavation of the tunnels has been completed, the pipe installed and encapsulated in cellular concrete. Shafts have been backfilled and all sites and streets are restored. Final cleanup and demobilization is currently being completed.

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, John Forero (916) 302-7258.

San Diego

San Vicente Pipeline
Traylor/Shea JV

Shaft excavation has been completed to depth, 75 ft. The shaft is a 62 ft x 30 ft ellipse, supported by 10-in. steel ribs and shotcrete. The shaft invert has been prepared to accept delivery of the first shield in late May, tunnel eye and 14-ft starter tunnel prepped and mining utilities installed in shaft. The grout mixing plant for segment backfill will also be assembled onsite in early June.

The Slaughterhouse shaft site, and the Reach 5 excavation from it, is the project's critical path activity. The 75-ft 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 have been in granite, very weathered granite and a mixed face of granite and conglomerate and have been supported by rock bolts, shotcrete, and lattice girders as appropriate. Ribs were used in the two 100-ft starter tunnels. Reach 5 east is at 850 ft, Reach 5 West is at 450 ft. Two representatives of BeMo are onsite to aid in support and excavation.

The San Vicente Portal site is the eastern terminus of the project, and starting point for Reach 6 excavation. Starter tunnel for the Robbins main beam is complete to 60 ft, with support of ribs & lagging. Work for the TBM cradle and other startup items are complete. Installation of a rollover station for muck trains has been completed. TBM delivery was expected in late May.

Fabrication and refurbishment of the TBMs is nearly complete. The first of two new open-face digger shields was built by Construction Tunneling Services (CTS) in Washington. It was to be delivered in late May to the Central Shaft, where it will mine reaches 4W, 3 and 2. The second shield fabrication will follow, with later 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. This machine will mine Reach 6 first, and then be removed to the West shaft to mine Reach 1. It will be delivered to the Portal site in late May.

Ground support in Reaches 2, 3 and 4 will be precast concrete segments. They will be installed behind the CTS shields, and subsequently backfill grouted. Segments are being manufactured by Traylor Shea Ghazi, in its Palmdale, Calif., plant. Casting began in late March, and is proceeding well.

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. Excavation of the tunnel will be completed by drill and shoot methods. Additional project scope consists of construction of a 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 in July 2005. All operations relating to the site development, portal excavation and portal support have been completed. Tunnel excavation started in September 2005. Tunnel excavation operations are currently working three shifts per day and have completed 3,932 lf of the 5,848 lf of excavation to-date. Excavation of the 1,870 lf 0.5 percent incline and the 2,062 lf 13.5 percent incline have been completed. The remaining excavation will be completed on the 19.6 percent incline. Fabrication of the 10-ft diameter steel liner is in process with a target completion date of August 2006.

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

Tunnel construction began in June 2002. The project was completed on Dec. 31, 2005, with Mayor Shirley Franklin pushing a ceremonial red button to mark the tunnel's official opening. The capping of shafts, site grading and restoration and landscaping will be finished by June 2006.

Atlanta

West Area CSO Storage
Tunnel and Pumping Station

Atlanta CSO Constructors

As of May 6, the Clear Creek Tunnel TBM had excavated 4,700 lf and the North Avenue Tunnel TBM has excavated 6,300 lf. The Clear Creek shaft and deaeration chamber excavation is complete and lining work is beginning. The North Avenue Shaft excavation is complete, with deaeration chamber top heading excavation complete. 14-ft diameter raise bored vent shafts have been excavated and shotcreted at North Avenue and Clear Creek.

Work on the Pump Station is being performed by W.L. Hailey as a sub-contractor to ACC. All pump station excavation work has been completed and 24-ft diameter tunnel forms are being installed. 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 underway. 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 back filling the tunnel. Mobilization started 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 April, Affholder had completed its portion of the project, including the connection to the existing Indiana Tunnel. All work has been accepted by the MWRD and Affholder has demobilized from the site and is completing contract close out issues. Jay Dee has completed all tunneling for the RCP sewers and is currently installing the last 700 lf of 42-in. pipe in the section of rock tunnel just completed.

All other items of work are completed and accepted by the MWRD. The project was given substantial completion status as of March 17 and is currently going through the 60-day operational testing and start up. Final restoration and move out is on going, and it is anticipated that all work will be completed by the end of June 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

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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.

Chicago

Calumet Tunnel System-Valve Isolation Chamber, TARP Pump Station

Kenny Construction Co.

The 320-ft deep valve access shaft was advanced to grade and the drilling and shooting of the first phase of the chamber was completed. The first phase of the chamber has been concreted and the shaft lined. The overburden and drill and shoot excavation of the West Pump Room Access shaft and access-way has been completed. The lining of the access-way and the shaft was recently completed.

The overburden of another access shaft to the existing TARP tunnels was completed followed by the drill-and-shoot excavation of the 310-ft deep shaft. This will give access to the existing TARP flows to the pump station that will be diverted to one side of the existing bifurcation, so the new valves and flumes can be installed and encased in the vacated side. Concurrent with this operation will be the required demolition in 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 the division of wet well into two separate wet wells for the new divided station.

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 Co.

The \$60 Million C.U.P project being built for the Corps of Engineers is in the final stages of completion. All below-ground concrete work is complete, along with all the mechanical and electrical work. Final testing is currently taking place. Shaft piping and tie-ins have been completed 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

Crews completed the drill and shoot excavation of the haul tunnels in early Dec. The paving of the 2,100-ft long tunnels was completed the second week of January. Crews demobilized from the completed haul tunnels and have started a follow-up project for Vulcan Materials that includes an access decline to the newly completed tunnel and the development of a starter pit for future quarry development.

INDIANA

Griffith

Cady Marsh Drainage Ditch Tunnel

Jay Dee/Kenny Construction JV

The Lovat soft ground TBM has completed the 6,440-lf tunnel drive and crews are completing concrete lining operations for the reinforced concrete lining and dewatering the last section with the last pour currently being made mid May. Inlet and outlet spillways and structure work will complete this work with substantial completion in July and final cleanup scheduled for September 2006.

Project manager: David Stacey, project engineer: Jason Cade, general superintendent: Jerry Pardon, quality control manager: Steve Jensen. Information: (708) 473-5473.

Indianapolis

Indianapolis International Airport

Midwest Mole Inc.

Midwest Mole has the subcontract to excavate a soft ground tunnel 2,100 lf with a 102-in. gasketed liner plate support, the Akkerman EPB TBM will excavate the tunnel crossing under an active runway and active taxi way. The tunnel will house a chilled water line and steam line for the new Terminal already under construction. Bowen Engineering has started construction of the launch shaft and will turn the shaft over to Midwest Mole on June 5. The TBM is scheduled to arrive the week of June 10 and launched approximately one week later. Information: (800) 533-0386.

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by James Thompson
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MICHIGAN

Grand Rapids

Christman Company Tunnel

Kiewit Construction

The Project consists of 100 lf of 19 ft x18 ft NATM tunnel excavated in clean sands under Mich. Street in Grand Rapids, Michigan. The NATM excavation was completed on May 6, and crews are currently applying waterproofing and final shotcrete lining. Scheduled completion date is early June 2006.

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

MINNESOTA

Rosemont

Ames Construction

Sub Contract -Jay-Dee Constructors

Empire III

Jay Dee has subcontracted the pipe jacking of 3,400 lf of 78-in. ID Hanson heavy wall reinforced concrete pipe. The contractor has completed two runs totaling 1,700 lf.

Empire II has been bid and Ames is low bidder with Jay-Dee to do the jacking of 4,600 lf of 66-in. Hanson Heavy wall RCP in three runs one 3,400 lf two runs each 600 lf. This work will start with the completion of Empire III. Information: Glen Rorison (708) 473-5473.

MISSOURI

St. Louis

Baumgartner Tunnel

Frontier-Kemper/Gunther Nash JV

The TBM daylighted on Dec. 15, 2005 and was dismantled and removed from the receiving shaft together with the support equipment in late December. Tunnel cleanup was completed in late January 2006 and installation of the reinforced carrier pipe started in February 2006. Cast-in-place concrete work at the deaeration chambers is being completed and backfilling of the concrete pipe will start as soon as they finish welding the tee lock sections. The backfilling will be handled by a local sub-contractor.

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

NEW YORK

New York

Dey Street Transit Project

Slattery/Skanska

The Dey Street project is a design build by Slattery/Skanska with DMJM+Harris as designer. It is a complicated, deep open cut construction adjacent to the World Trade Center site that requires underpinning of two active subway lines along with secant walls, jet grouting, and partial demolition of two stations.

Project Executive: Mike Attardo, Project Manager: Norm Hirsch, General Superintendent:

Tom Maxwell, Underpinning: John Stanberry, Project Engineer: John Phillips, Superintendent: Jay Harrison, Design Coordinator: Sean Glynn, Assistant, PM: Nir Golan. Information: Gary Almeraris (708) 746-2714.

New York

Water Tunnel #3 Stage 2

Schiavone/Frontier-Kemper/Shea JV

The 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 on Jan. 3.

The TBM has mined 10,335 lf in the east drive; the owner revised the contract to include an additional 2,000 lf to take the tunnel to Shaft 32 at the Queensboro Bridge. The shaft chamber on the surface is currently being excavated through the overburden in preparation for setting up the raise bore and slashing operation.

Crews are mucking all the shaft slashing operations from the completed adits and transporting the muck to an underground crusher to feed the horizontal conveyor feeding the vertical shaft belt. They're also starting to set up concrete forms in the south heading for the start of tunnel concrete operations this summer.

As part of the \$658 million joint venture project, J.F. Shea Co. is excavating and concrete lining nine shafts, 550 vf each. The drill-and-blast slashing is complete on Shafts 29 and 31 and crews are currently finishing



Hart Street WWS Force Main Replacement
Involved HDD installation of 3,000 feet of steel casing under Manhattan Harbor, jet grouting to underpin piles to 120 feet below sea level, connection of microtunneling, and HDD installed pipeline 40 feet below the existing groundwater. A 48-inch HDPE force main pipe was installed by microtunneling, having drive lengths up to 3,000 feet.

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concrete operations, while slashing of the large upper sections of Shafts 28 and 30 are complete. Once concreting of these sections back to the surface is complete, crews will then resume slashing operations.

Excavation and concreting has been completed in the overburden of Shaft 27, with crews currently slashing with 6-shots left then concrete. Raise bore is complete on Shaft 25 and crews are setting up for slashing operations. On Shaft 24, raise bore was completed the week of May 8, 2006 and crews are setting up for slashing operations.

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.

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 through these problems.

Bradshaw Construction Project Manager: Eric Eisold, Superintendent: Jerry Simon. Rockdale Project manager: Ken Richardson; Rockdale Superintendent: Jerry Morrow

High Point

Deep River Outfall Project, Segment 2

Bradshaw Construction Corp.

Bradshaw Construction Corp. is still finishing construction on the last tunnel for a sewer project in High Point, N.C. The last tunnel crosses under Business I-85 and US-29.

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 23-ft, 9-in. main tunnel has been completed. TBM removal along with conveyors etc. is nearing completion. Concrete final lining to a 20-ft ID is scheduled to begin in June 2006. Shaft construction and connector sewer installation is under way.

Project manager: Robert J. Kassouf, Project Superintendent: Ralph Dodero. Further Information Contact: Bob Kassouf (216) 651-3333.

Columbus

BWARI

Jay Dee/Michels/Traylor JV

When excavation advanced to Shaft 6 at approximately 15,000 lf, the TBM was halted and major maintenance was conducted at that

site on the cutterhead and cutters. Mining restarted on May 6 on the final drive of 6,000 lf, where the TBM will breakthrough into the main working slurry shaft on the BWAOS II, with anticipated holing through in October 2006. Hand mining 500 lf of 5 x 5 adits from the main tunnel to connect the 36-in. drop pipe elbow with the main tunnel. When the TBM has completed its drive, work on a microtunnel 250-ft long for installation of a 18-in. line will commence. The contractor has completed four 10-ft diameter drilled and cased holes to the crown of the tunnel drilling to tunnel invert and filling the hole with flowable fill and installing Hobas pipe after removal of the TBM.

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

The joint venture has completed 5-shaft one 39-ft FD work shaft 77 ft deep with a slurry wall completed by subcontractor Soletanche/Moretrench 99 ft deep. A mud slab 15 ft thick was placed at the shaft bottom. Four A jet grout area 15 ft deep, 30 ft wide and 27 ft high was placed on one side of the shaft where the tunnel eye will be placed and a similar jet grout area placed on another side where the TBM from BWARI I will breakthrough into this shaft.

Four shafts were auger bored by Case Foundation under a subcontract 12 ft in diameter and cased with liner plate 10 ft in diameter down to 2 ft above tunnel crown and a jet grout area 24-ft x 24-ft x 27-ft high placed around the shaft by Nicholson Contracting Pittsburgh. And the shaft bored to invert and back filled with low density slurry to spring line. The shafts ranged from 45.5 ft to 74.5 ft in depth. The Interconnecting Structure bypass 108-in. Hobas pipe was completed and currently drilling for soldier pile placement around the structure.

The 4,600-lf stretch of open-cut (25 ft deep and 7 ft wide) was completed and the Hobas 42-in. pipe installed by subcontractor Complete General. Columbus, Ohio.

The Lovat TBM was assembled in sections in the main work shaft; the tight quarter required hanging the sections and leading the umbilical with the cutterhead section turning the eye from a jacking station constructed in the shaft. The TBM has advanced approximately 1,950 lf as of May 2006 and will continue to Shaft 9 approximately 550-ft, where it will halt in the enlarged area of the shaft for maintenance and seal replacement work on the articulation seals. The final drive started in June. Segments are being cast by North American Segment Co., Mount Vernon, Ohio.

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. Shaft build out, and diversion and drop structures, will be complete in June, 2006. Site landscaping and restoration work is underway. In the pump station, mechanical/electrical and architectural work is in progress. The Operations and Maintenance Building adjacent to the pump station is structurally complete. Construction of a 115-KV substation is substantially complete.

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.

Portland

Portland East Side CSO Tunnel Project

Kiewit/Bilfinger Berger JV (KBB)

After completing Phase I Pre-Construction Services earlier this year, KBB received notice-to-proceed for construction services from the City of Portland in late March 2006. Key items of work completed during pre-construction included TBM procurement, segmental lining design and cost estimating and scheduling.

Currently set-up of the main mining site is being completed including grading, paving, utilities, and trailer/shop installations. Construction of the 70-ft diameter, 125-ft deep slurry wall Mining Opera Shaft was scheduled to start in May.

Design of the 25-ft diameter Herrenknecht Slurry Pressure TBM is complete with fabrication to start in June 2006. Delivery of the TBM is scheduled for later this year with tunneling to start in April 2007.

Other key elements of the project including planning for the precast segmental lining manufacturing plant, microtunneling, and pipeline structure excavation and support.

Key personnel for the KBB team include: Tom Corry-Project Manager, Tony O'Donnell-Project Engineer, Paul Weisheit-Safety Manager, Glen Tomack-Quality Manager, Scott Wimmer-Shaft Manager, Christof Metzger-Tunnel manager, Scott Cromack-Pipelines Manager, Dave Craemer-Precast Manager. Information: Bill Mariucci (503) 849-8189

RHODE ISLAND

Providence

Deep Tunnel CSO Project

M.L. Shank Co. Inc.

All of the adits have been completed and starting freezing operations for raise-bore operations on the small vent and drop shafts. The freeze started on April 6 for the shafts 1-ft

6-in. for one and 12-ft excavated for the other. The raise boring will be conducted by Dynatec from and excavated adit prior to concrete operations reaching the area. It is anticipated that all concrete and raise bore operations will be complete by the end of 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; PA.: Jim Hinashian; safety: Eric Stalman. Information: (401) 941-1495.

SOUTH CAROLINA

Charleston

Cooper River Sewer Replacement-Phase III
Affholder Inc.

This \$39 million contract consists of approximately 18,100 lf of deep tunnel with carrier pipe 20- to 48-in. diameter. Three working shafts to be completed as drop shafts, two drop pipes, and one retrieval shaft. Connections to drop shafts and pipes including sewers and odor control; piping. Approximately 1,200 lf of micro-tunneling and approximately 1,400 lf of open cut excavation with associated shafts, manholes and connections.

The shafts have all been completed using concrete caissons to the marl then ribs and lagging in the clay to tunnel invert. The exception to this method is the Huger Street shaft at the North end of the project, which was completed with a concrete caisson in the soft ground to tunnel invert.

From the South end Adgers Wharf shaft a

Decker 92-in. diameter TBM was installed and excavated west 1,500-lf and cutterhead changed to 84-in. diameter. The TBM mined north to Queen Street into a 100-ft radius curve. To complete this curve the TBM mined ahead into a starter tunnel to allow for hand mining of the final curve then backing out the Decker TBM from the starter tunnel and turning it into the enlarged hand mined tunnel for the 4,000-lf drive to Colonial Lake interface with previous construction of the Ashley River Tunnels. Crews are currently moving the TBM to the face to start mining with ribs and lagging support.

At the Calhoun shaft in the center of the project the Lovat 77-in. TBM is being assembled in the hand driven starter tunnel and will drive south to meet the excavated section at Queen Street.

Operations Manager: Ross Webb, Project manager: John Scheithe, Superintendent: Ron Beasley, Project Engineer: Jason Teuscher, MicroTunnel Superintendent: Roy Windham, Tunnel Foremen: Vince Cardenas, Jose Rios, Safety Manager: Howard Jones. Information: Ross Webb (843) 723-5899.

Charleston

Daniel Island Extension

Affholder Inc.

This \$24 million project awarded to Affholder Inc. as a negotiated bid will be getting underway simultaneously with the Cooper River Tunnels. A new caisson shaft with a 20-ft ID will be sunk with a concrete caisson full depth 120 ft and a Lovat EPB 96-in. diameter will be assembled to excavate the 11,000-ft to

the Huger Street Shaft. The same personnel and offices will be utilized for this project.

Rock Hill

Sumter Ave. Storm Drain

Bradshaw Construction Corporation.

An 84-in. diameter liner plate tunnel was completed under a railroad using an Akkerman TBM. The shotcrete final lining is just getting started. Project Manager: Eric Eisold, Superintendent: Jason Lytle.

VIRGINIA

Chantilly

Dulles West APM

Clark/Shea JV

At the Dulles West APM Project the NATM tunnels continue to excavate the last of four benches, with completion of excavation planned for June 2006. In May, concrete operations were under way in the other three tunnels. concrete operations for the cut-and-cover boxes adjacent to the main terminal are under way, with completion of the APM boxes planned for August.

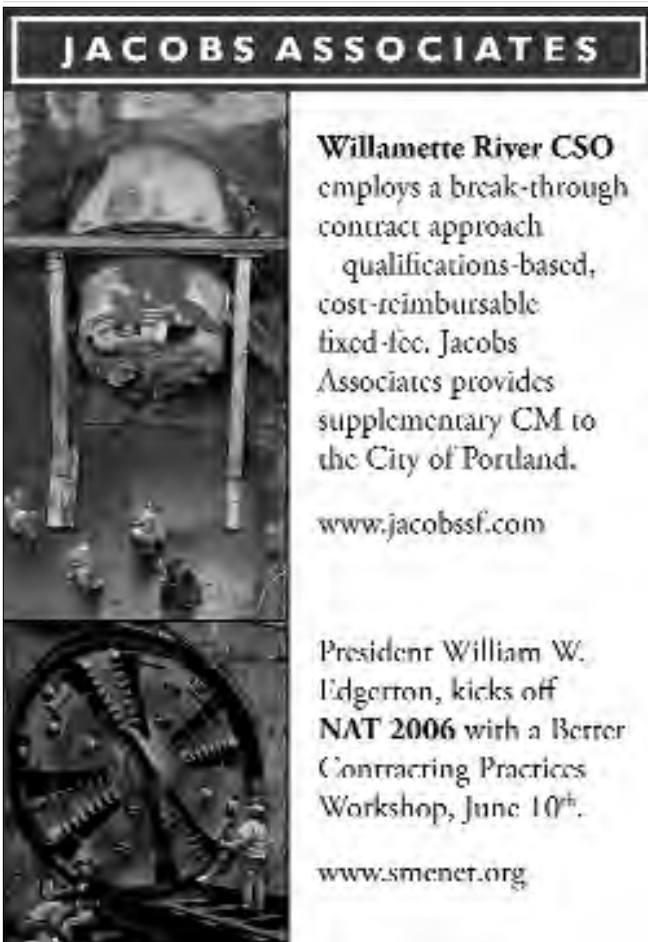
In order to accommodate design revisions to the Airport's International Arrivals Facility, the Tug Tunnel and ramp structures have been scaled back in size. This puts the tunnel concrete operations on the project's critical path to completion.

Chantilly

Dulles East APM

Atkinson-Clark-Shea JV

Over on the East APM side of the airport, a major concrete operation is in full swing. The APM boxes at the south end are due to



JACOBS ASSOCIATES

Willamette River CSO employs a break-through contract approach qualifications-based, cost-reimbursable fixed-fee. Jacobs Associates provides supplementary CM to the City of Portland.

www.jacobssf.com

President William W. Edgerton, kicks off NAT 2006 with a Better Contracting Practices Workshop, June 10th.

www.smenet.org



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be completed in June, turning the tunnels over to the follow on contractor for installation of plinth concrete and train controls.

The Tier 3 East Station concrete crews are pouring the mezzanine level and walls up to the apron level. By July, the structure will be substantially complete, allowing for the installation of the architectural, mechanical and electrical fit out. The Tier 1 East Station concrete is just getting underway, after having the two TBMs pulled through the station. The real estate outside the windows of concourses A and B is shared by mucking operations, caisson installation crews and structural concrete work.

In June 2006, two TBMs are north of the station mining toward completion at the Main Terminal. Two NATM headings are also mining toward the Main Terminal, with all mining planned for completion by fall 2006.

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 Riggsby; equipment superintendent: Kelvin Sampson; electrical superintendent: Don Magyar; Walker: John Hammer; chief field engineer: Rob White, office manager: Bertha Sampson. Information: (202) 345-1087.

WASHINGTON

Seattle

Beacon Hill Tunnel

Obayashi Corp.

As of May 1, west headhouse/main shaft excavation with tiebacks is complete; east headhouse and ancillary shaft excavation is complete, currently placing mud slab in bottom of shaft. South Concourse Cross Adit (41 ft diameter) excavation complete. North Concourse Cross Adit (41 ft diameter) side drifts and top heading center drift complete, center drift bench and invert complete by mid-May. East and West (two headings) excavation of the South Platform tunnels (31 ft diameter) is under way. East Portal development work will be complete by the end of June. The Mitsubishi EPB TBM began tunneling on a single shift mid-January. The TBM was advanced 400 ft, then shut down to install a mucking system. Single shift mining resumed April 24, with a current heading advance of 500 ft. Single shift mining will continue until reaching the Beacon Hill station in July. Precast segment production will be complete by mid June. Work on the 1,400 lf aerial structure and station is 35 percent complete.

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.F. Shea/Traylor JV

King County awarded the Brightwater Project to the Joint Venture of Kenny Construction (Sponsor) / J.F. Shea Co. and Traylor, on Dec. 29, 2005 after a lengthy protest by the second bidder, Jay-Dee/Coluccio, JV. The \$130,848,700 project will get under way in February 2006 after the Jan. 30 notice to proceed. Scheduled completion is Aug. 28, 2009.

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. 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 ID 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.

The site utilities and screen/sound wall fence has been completed and the guide walls for the 130 ft and 160 ft deep slurry wall panels is underway. Bencor, the slurry wall subcontractor, will start the actual slurry wall excavation in early June with a late October scheduled completion. This will be followed by the lining of the slurry wall shafts and the mining of a microtunnel drive from the (mining) shaft before the 19 ft, 4 in. in diameter Lovat EPB will be erected in the shaft. TBM launch is expected for summer 2007 TBM launch is expected.

Inquiries can be directed to Ted Budd at Kenny Construction Co. at 250 Northgate Parkway, Wheeling, IL 60090. Phone (847) 541-8200, Fax (847) 541-8838, E-mail: ted-budd@kennyconstruction.com.

WISCONSIN

Milwaukee

Elm Road Generating Plant - Cooling Water Intake System

Kenny Construction Co.

The overburden excavation using a 32-ft ID caisson method to the rock (80 ft deep) for the first of three land based shafts was completed and the rock drilled and shot to the top of the tunnel and TBM erection chamber. The 200-ft deep shaft was lined and the drilling and shooting of the 30-ft horseshoe erection chamber started. The erection chamber for the insertion of the 27 ft, 4 in. in diameter TBM will be completed in late May.

Once complete, the 27 ft, 4 in. TBM that is nearing completion of its rebuild will be delivered to the shaft and erection started.

The first season dredging operation in the Intake channel has been completed and steel sheeting work in the existing inlet channel has started. 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. The job is de-mobilized and the remaining crew will be moving over to the Harbor Siphons Project. The American Public Works Association announced that this project Northwest Relief Sewer was awarded Public Works Project of the Year and Dutch Vliegthart and Roger Maurer will be individually honored at a ceremony in Kansas City, Mo. on Sept. 11, 2006.

Project manager: Dutch Vliegthart, project engineer: Carl Christianson, master mechanic: Keith Walters, office manager: Bonnie Senkowski. Information: (414) 258-2510.

Milwaukee

Harbor Siphons Project

Shea/Kenny JV

The \$87 million job is scheduled to start mobilizing in June.

CANADA

BRITISH COLUMBIA

North Vancouver

Seymour-Capilano Filtration Project

(SCFP) Bilfinger Berger (Canada) Inc.

The two new 3.88-m diameter Robbins MB 264-310 conventional hard-rock TBMs machines will sport 19-in. cutters, and can be reconditioned for other work up to 4.2 m. Total cutterhead power 3,000 kW with up to 8.3 rpm rotation speed. Installation of the two TBM units will begin in May. The TBMs will be lowered down the 11-m ID x 180-m deep Seymour Access Shaft and assembled in the Shaft base chamber. 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 will be launched in early summer 2006. 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.

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.