

Members tackle Airport Expansion

By Scott Smith

McCarthy Building Companies is nearing final approach on construction of a massive parking garage to accommodate Terminal 3 at McCarran International Airport. The builder is under budget and ahead of schedule at the halfway mark on the eight-story garage that will accommodate some 6,000 vehicles. Part of the ambitious building plan to help the nation's sixth-largest airport handle 40 million visitors a year, the garage will 140 concrete pours.

Slated for completion by the end of the year, The 2.3 million-square-foot garage project includes an 11,000-square-foot office, roadway for airline passenger pick up and drop off and toll plaza and features a helical entrance ramp that required 14 dedicated concrete pours.

McCarthy, which is self-performing all the concrete work for the \$122 million project, recently completed pour number 63 on the deck – the midpoint required for the structure.

The garage will include spaces for employee parking, valet service and short- and long-term public parking for those using Terminal 3, now under construction. The terminal itself will help assuage the airport's overburdened Terminal 1, which saw nearly 48 million passengers cross its gates in 2007. Air travel to Las Vegas has decreased since then, but Clark County is taking a proactive approach to tourism, betting on the come that air traffic will improve with the economy.

The terminal will add 14 gates, along with supporting structures such as security checkpoints, baggage claim areas, ticketing and more. According to planners, the additional terminal will enable McCarran to efficiently accommodate 53 million visitors each year.

To pave the way for the new terminal, McCarthy completed a civil package that included drilling and installation of 1,300 piers. The company first had to undertake an aggressive and extensive dewatering plan to lower the construction site's water table by 50 feet in order to allow for the excavation of 600,000 cubic yards of material. That process took more than a year. The site preparation complete, McCarthy then oversaw the pier drilling, construction of an underground shell for the terminal's automatic tram station and a 2,300-foot utility tunnel to house electrical, gas and water utility lines. The reinforced concrete structures used rebar supplied by AGC Las Vegas member Pacific Coast Steel and waterproofing by member Commercial Roofers. Other AGC-member subcontractors on the civil package included Sequoia Electric and Pahor Mechanical.

The scope of work also included construction of retaining walls, utility installation, grade beam construction, pier caps, grading, demolition and installation of 350 foundation anchor bolt assemblies to serve as the foundation for the terminal's structural steel framing. The 125,000-square-foot project was coordinated to ensure smooth scheduling, staging and transition with terminal construction and other tangential and supporting projects at the airport.

The \$150 million package, which recently won Southwest Contractor's "Best of 2009" award for civil/public works and engineering design, uses hydronic piping modules to conduct water for heat transference. The modules, constructed off-site, were lifted into the tunnel through gaps in the concrete roof, saving valuable time over the process of installing the piping one piece at a time. Once the modules were in place, the roof was filled in.

McCarthy's fellow AGC Las Vegas member, The PENTA Building Group was responsible for moving water at and underneath the new terminal. As general contractor for the site's central plant, PENTA used an extensive under slab sub-base drainage system, sump pit assemblies and waterproofing details to control the earth water below, Jeff Mills, PENTA project manager told the *Nevada Business Journal*.

"Also as part of the central utility plant, we are constructing a below grade water basin that will hold approximately 250,000 gallons of water feeding six concrete cooling towers. The central utility plant is located approximately 1,000 feet away from the new Terminal 3 project, supplying chilled and heated water for the mechanical system through an underground tunnel connecting both projects," he said.

The central utility plant covers 100,000 square feet with is a cast in place concrete and tilt-up walls. It will provide some 13,000 tons of cooling capacity in six cooling towers containing equipment placed by three overhead cranes.

Frehner Construction discovered about one-third more caliche that expected when performing earthwork on an under-runway roadway connector that is part of the massive airport expansion project that includes an entrance

to Terminal 3 and better access to the existing two terminals. Frehner was able to break up the caliche and use it as backfill.

Planning, sitework and funding for these projects and the entire \$2.4 billion began long before the current economic downfall, and is expected to allow McCarran to meet passenger demand at least into the next decade. The entire three-story Terminal 3 project will cover close to 2 million square feet and is expected to be completed in 2012.