

## Making Retaining Walls Attractive

The City of Alton, IL, had awarded a contract to give its city hall a "face-lift", when it realized that the parking lot and the existing wall needed attention. Oates Associates (Collinsville, IL) did the engineering for the walls and chose Stone Strong Retaining Wall System. Egyptian Concrete did the precasting.

The project consisted of three walls totaling 5,339 sq ft. The Main Wall turns 90° at each end and is 3,807 sq ft; the West Stair Wall is 935 sq ft and the East Stair Wall is 597 sq ft. One side wall runs about 16 ft and butts into an existing wall. The other end has a side wall which steps into the subgrade. This Main Wall reaches 13.5 ft in height.

A stairwell was designed in order for the public to get to the restaurants and shops on the street below. Thiele Geotech designed the stairs as two walls. Each wall



consisted of an inside and outside corner (90°) with an elevation change of 30 ft 8 in. The West Stair Wall has one side that reaches a height of 17 ft 2 in. from base to the top of the caps.

The East Stair Wall was a separate design—not just a mirror image. One side has a height of 18 ft 8 in. prior to joining the Main Wall. This relatively tight working space combined with the 30 ft change in elevation with the typical batter making two 90° turns required attention to detail. ■

## The Case for Skilled Labor

There is a case to be made for the certainty provided by qualified specialty subcontractors against unknowns when sourcing work. The expected uncertainties and unknowns present in all projects will overwhelm a schedule if additional complications are allowed to interfere on time-critical efforts.

The photo shows "rodbusters" from Davis-JD Steel LLC on the job installing foundation mat for a 790-MW coal-burning plant. Hitachi America was prime with the general work done by Kvaerner Songer, Inc. a division of Aker Kvaerner. Davis-JD was selected to perform this job because it was willing to accept a contract for the supply and installation of the approximately 6,000-ton job. Typical business practice in the Midwest is for the GC to issue two separate contracts for fabrication and placement. As a single point, Davis-JD assumed all responsibility for dealing with reinforcing issues. It never missed a pour and worked with the engineering firm to change rebar specifications to overcome spot shortages in the rebar market. Its manning on this job varied from over 40 men to fewer than five, requiring flexibility and a pool of manpower to support the project needs.

A fundamental problem with many rebar specialists is that there is no barrier to entry—a man with a pair of pliers and a truck can

## Anchors Used At Hoover Dam Bypass Bridge

Scheduled for completion in 2010, the 1,900-ft-long Colorado River Bridge will span the Black Canyon 900 ft above the river.

In preparing the bridge site for the piers, some of the weathered and jointed "volcanic tuff" rock needed to be stabilized with rock anchors. Over 380 of the Williams 1- $\frac{1}{2}$ -in.-dia. 150 KSI Multiple Corrosion Protected III anchors were each tensioned and locked off at 140,000 lb in the rock benches to add permanent strength and stability to the rock under the pier footings.

Williams 2- $\frac{1}{2}$ -in.-dia 150 KSI MCP III tieback anchors were chosen to serve as permanent lateral support for the abutments. The anchors were incrementally loaded and locked off up to 480,000 lb as the backfill was placed behind the abutments. Williams also furnished the prestressed wing wall tieback anchors for this phase. Roy E. Ladd and Asso. of Redding, CA, was contracted to do the installation and on-site testing of all the rock and abutment anchors.

In addition, the project used Williams 1- $\frac{1}{2}$ - and 1- $\frac{3}{4}$ -in.-dia 150 KSI All-Thread-Bars for the segmental pier post tensioning, the tub girder to pier cap connections, as well as the concrete arch-to-arch strut connections. All of the post-tension bars used to attach the concrete to structural steel connections were pre-tested in the Williams factory to assure the bar's quality and strength. The general contractor, a joint venture of Obayashi and PSM, is installing and stressing the 150 KSI bars in the post-tension locations of the bridge. ■



call himself a rebar contractor. The difficulty arises when a small or novice contractor encounters the all too frequent challenging project that presents new demands on experience and skills.

One of the larger U.S. rebar-placing firms in terms of workforce size and geographic coverage, Davis-JD Steel contends that broad experience and a pool of skilled workers preclude the learning curve on each project. ■

