



A precast concrete pier cap with fluted aesthetic detailing is erected on a column element. Segments are connected using grouted couplers. Photo: Volkert Inc.

business hub with a bustling food and art scene, only 14 months of full interstate closure were allowed for construction; also, access to certain CBD public venues was required throughout the project. Additional challenges included limited right-of-way, utility conflicts, varying geotechnical conditions along the project corridor, and limited vertical clearance under the existing structures to perform foundation work before the interstates were closed.

Aesthetics were a priority for ALDOT, so the design team decided to use single-column piers under each segmental girder line. The piers are accented with vertical fluted lines in the near and far faces, and the pier caps flare out at the top to complement the sloping lines of the segmental girders. The contractor elected to precast the piers as two separate pieces, columns and caps, for faster construction. The reinforcement for the pier sections was made continuous with grouted couplers. This allowed the piers to be constructed efficiently once the demolition and removal operations for the existing structures were completed.

The first two-thirds of the project had sound rock for foundation design. Near 22nd Street North, there was a



AESTHETICS COMMENTARY

by Frederick Gottemoeller

Faced with a request for a viaduct that would “revitalize the downtown experience for the citizens and visitors of Birmingham,” the project’s designers thought creatively about the appearance of the space below the structure. Such spaces are often dark and uninviting, filled with haphazardly parked cars and drifting waste paper, depressing the activities around them. Improving the appearance of such a space requires conceiving of it as a huge outdoor “room,” with the superstructure as its ceiling and the bridge piers articulating the room-like impression.

The attractiveness of this “room” depends, first of all, on long, uninterrupted sight lines in both the transverse and longitudinal directions, so that the whole area can be seen and understood

at once, so that it can be organized for uses beyond parking, such as farmers markets and art fairs, and so that there are few opportunities for concealment. The concrete box girders contribute to this goal by minimizing the number of pier legs both longitudinally (by allowing relatively long spans) and transversely (by requiring only four pier legs per pier line). The thin piers also avoid a problem that sometimes results when designers are asked to provide a structure with architectural grandeur: They attempt to do so with physical mass and “architectural” detail. The result can be an agglomeration of massive piers with nonstructural decorative details. Thus, an individual looking along the bridge sees the piers line up one behind the other, visually filling the “room” with concrete. In contrast, the

thinness of the Birmingham piers keeps the long views open, and the “room” inviting. The piers’ only architectural details are the closely spaced vertical grooves that visually reinforce their thin appearance.

The concrete box girders also keep the longitudinal views simple. The sight lines are not blocked by transverse pier caps, and there are no braces or diaphragms to catch the eye. The wide spacing between box webs means that light can reach to the underside of the deck slab, and the whole underside of the bridge stays bright. Finally, a reflective white coating on the underside of the structure keeps light bouncing around the “room,” meaning the space is brighter during the day and easier to light at night.

It is heartening to see this high level of aesthetic quality achieved within the discipline of accelerated bridge construction. Birmingham has met its schedule while achieving an “aesthetically pleasing area for public events”—all at the same time.