

AESTHETICS COMMENTARY

by Frederick Gottemoeller



Directional ramps at major freeway interchanges are often called “flyovers,” a recognition of the curved aerial paths that high-speed vehicles take as they make their way from one freeway to the other. Concrete box girders are uniquely suited to this type of bridge.

In a large interchange, if the ramp widths are sufficiently standardized, there is often enough length of bridge to support the costs of specialized segmental forming. The longer spans and narrow pier shafts of segmental construction allow more options for pier placement and minimize the need for straddle bents. Segmental ramp bridges also have great aesthetic potential. If the pier shafts are kept thin and the pier caps are no wider than the soffit of the box girder, all the dominant lines of the structure—the deck edges, the overhang/web intersections, and the soffit edges—are parallel to the curvature of the ramp. Indeed, they reflect the trajectories of the vehicles above.

Their appearance from below also is pleasing to drivers passing through. Major interchanges are inherently confusing places, with drivers having to weigh multiple path choices while competing for road space with other drivers that are occupied likewise. Wide openings between the ramp piers maximize sight opportunities for drivers passing below, while the simple, clean lines of the structure are quickly grasped and easily understood, so that the bridges do not distract drivers.

The I-4/Selmon flyover ramp bridges take advantage of all of this potential. The spans are long and the number of pier shafts are relatively few. The webs are sloped and the box widths are minimized, which means that the pier cap width and the pier shaft width are also minimized. Drivers can easily see between the thin and widely spaced piers to the signs and ramp choices beyond. The minimal box width, sloped webs, and resulting long overhangs also allow more daylight to penetrate the spaces below the bridges. Because of this, drivers have an easier time recognizing traffic patterns and potential hazards. Relatively thin and widely spaced as they may be, there are still a lot of piers and a lot of pier caps in the I-4/Selmon interchange. Because they are simple geometric shapes with a minimum amount of detail, their potential for visual distraction is minimized and the overall appearance remains consistent. The height and prominence of the bearings is a welcome touch. At each pier, the box girders rest on two relatively small, raised pads.

From many angles a bit of sky is visible between the pier caps and the girder soffits. The girders appear to be very light in weight. They look like they are floating in the air, actually “flying over.” For drivers, traversing major interchanges will always be somewhat stressful. The I-4/Selmon Interchange’s open views, seemingly lightweight girders, simple shapes, and, most of all, congruence of the lines of the bridges with its traffic patterns, make this interchange less so.

roadway. Project partners are the Florida Department of Transportation (District Seven), Florida’s Turnpike Enterprise, the Tampa-Hillsborough County Expressway Authority, and the Federal Highway Administration. 

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