



## Florida Department of Transportation

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GOVERNOR

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SECRETARY

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TO: District Directors of Operations, District Directors of Production, District Design Engineers, District Structures and Facilities Engineers, District Maintenance Engineers, District Construction Engineers, District Structures Design Engineers

FROM: William Nickas, P.E., State Structures Design Engineer

COPIES: Bob Greer, Jeffrey Ger (FHWA), Brian Blanchard, David Sadler, John Harris, Duane Brautigam, Sharon Holmes, Robert Robertson, David O'Hagan, Larry Sessions, Henry Bollmann, Steve Plotkin

SUBJECT: Temporary Design Bulletin CO5-12  
Design of Bridges with Sidewalks

### REQUIREMENTS

1. **Add a new section, 2.1.3 Live Loads, to the July 2005 Structures Design Guidelines as follows:**

#### 2.1.3 Live Loads [3.6]

Possible future changes in the physical or functional clear roadway width of the bridge shall be investigated. (LRFD 3.6.1.1)

2. **Add a new section, 6.7.9 Sidewalks / Superstructure Design, to the July 2005 Structures Design Guidelines as follows:**

#### 6.7.9 Sidewalks

Design bridges with sidewalks located behind traffic railings for the governing of the following two cases:

- The initial design configuration with traffic load, pedestrian load, traffic railing and pedestrian railing loads present, or
- The possible future case where the traffic railing between the travel lanes and the sidewalk is removed and vehicular traffic is placed over the entire deck surface (no pedestrian loads present).

## **COMMENTARY**

### **2.1.3 Live Loads**

Frequently bridges are widened and areas dedicated to pedestrian traffic become travel lanes for vehicular traffic. In the future, the sidewalk could also be simply eliminated in order to provide additional space to add a traffic lane.

### **6.7.9 Sidewalks**

In the future, the sidewalk could be simply eliminated in order to provide additional space to add a traffic lane. For this case two options are viable:

1. Construct a second traffic railing at the back of the sidewalk instead of a standard Pedestrian / Bicycle Railing as part of the original bridge construction. A vertical face traffic railing is preferred for this application if ADA compliant handrails are required due to the grade of the sidewalk. Design the cantilever within the sidewalk deck area to resist vehicle impact forces and wheel loads.
2. Construct a standard Pedestrian / Bicycle Railing as part of the original construction of the bridge and then demolish it and replace it with a traffic railing when necessary. If the deck cantilever is adequately reinforced to resist vehicle impact forces and wheel loads, only the railing needs to be replaced. Dowel the new vertical steel into the deck.

## **BACKGROUND**

Above clarifies design issues surrounding pedestrian sidewalks on bridges. The standard Pedestrian /Bicycle Railing cannot be used as a traffic railing. The standard concrete parapet is too short (only 27" tall; 32" tall minimum for TL-4) and it is not sufficiently reinforced to resist impact loads. The aluminum bullet railings are not designed to resist impact loads either.

## **IMPLEMENTATION**

This policy is effective on all designs less than 60% complete before November 21, 2005.

## **CONTACT**

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