Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

STEPHANIE C. KOPELOUSOS
SECRETARY

TEMPORARY DESIGN BULLETIN C09-06

ROADWAY DESIGN BULLETIN 09-06

DATE: August 6, 2009

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

FROM: Robert Robertson, State Structures Design Engineer
David O'Hagan, State Roadway Design Engineer

COPIES: Brian Blanchard, Lora Hollingsworth, David Sadler, Duane Brautigam, Timothy Lattner, Tom Malerk, Tom Andres, Sam Fallaha, Larry Jones, Andre Pavlov, Jeffrey Ger (FHWA)

SUBJECT: Plans Preparation Manual, Volume 1, Chapter 2 requirements for Vertical and Horizontal Clearances for Bridges

This design bulletin revises the vertical and horizontal clearance requirements in the ***Plans Preparation Manual***, Vol. 1, Chapters 2 and 25.

REQUIREMENTS

1. Delete the following figures from the current ***Plans Preparation Manual***, Vol. 1, Chapter 2, and replace them with the respective attached drawings:
   A. Figure 2.10.1 Clearances – Rural and Urban Interstates (Freeways), Arterials and Collectors, with Projected 20-Year ADT of 1500 or Greater
   B. Figure 2.10.2 Clearances – Rural Arterials and Collectors, with Projected 20-Year ADT of Less than 1500
   C. Figure 2.10.3 Clearances – Urban Arterials and Collectors (Without Curb and Gutter)

2. Delete Figure 2.10.4 Clearances – Urban Arterials and Collectors (Curb and Gutter) from the current ***Plans Preparation Manual***, Vol. 1, Chapter 2 and replace it with the attached Figures 2.10.4.A and 2.10.4.B.

3. Add Figure 2.10.5 as shown on the attached drawing to the current ***Plans Preparation Manual***, Vol. 1, Chapter 2.

4. Delete the current ***Plans Preparation Manual***, Vol. 1, Chapter 2, Table 2.11.6 and replace it with the following:

Table 2.11.6 Horizontal Clearance to Bridge Piers and Abutments

Minimum Horizontal Clearance to Bridge Piers and Abutments: Rural and Urban Flush Shoulders: Outside the clear zone. See also Figures 2.10.1 thru 2.10.3. Urban Curb or Curb and Gutter (Design Speed ≤ 45 mph): 16 ft. from the edge of the travel lane; or 4 ft. from face of outside curbs; or 6 ft. from edge of inside traffic lane; whichever provides the greater setback. See also Figures 2.10.4.A and 2.10.4.B. Rural and Urban with Roadside Barriers: The minimum barrier offset as shown in Table 4.3.1 measured from the face of the barrier. See also Figure 2.10.5.
Notes: 1. Pier protection and design shall comply with the requirements provided in ***Structures Design Guidelines, Section 2.6.*** 2. Locate piers outside of clearance envelopes as shown. Additional clearance may be required for sidewalks, shared use paths, intersection sight distance and future widening of the lower roadway. 3. Evaluate the potential for widening of a lower roadway at a given location based on adjacent geometric constraints, e.g. other bridge piers, MSE walls, significant water features, etc.

5. Delete the current ***Plans Preparation Manual***, Vol. 1, Chapter 25, Table 25.4.14.7 and replace it with the following:

Table 25.4.14.7 Horizontal Clearance to Bridge Piers and Abutments

Minimum Horizontal Clearance to Bridge Piers and Abutments: See Table 2.11.6.

COMMENTARY

When designing a bridge that will cross a lower roadway, consider the potential for future widening of the lower roadway during the service life of the bridge. Coordinate the bridge and roadway designs to establish bridge superstructure depths, span lengths, pier types and skew angles as necessary to accommodate the applicable vertical and horizontal clearance requirements for both the proposed and future lower roadway widths.

BACKGROUND

The vertical and horizontal clearance requirements for bridges over lower roadways as stated in the 2009 ***Plans Preparation Manual*** Vol. 1, Chapters 2 and 25 date to the 1987 ***Structures Design Guidelines***. These requirements need to be clarified, expanded to address potential widenings of lower roadways, and made consistent with the horizontal clearance requirements for other roadside objects. The new requirements stated in this bulletin address these issues.

IMPLEMENTATION

These changes are clarifications of existing requirements and shall be implemented immediately on all projects.

CONTACTS

For bridge related issues:
Charles E. Boyd, PE
Assistant State Structures Design Engineer
(850) 414-4275
charles.boyd@dot.state.fl.us

For roadway related issues:
Rob Quigley, PE
Roadway Design Engineer
(850) 414-4356
robert.quigley@dot.state.fl.us

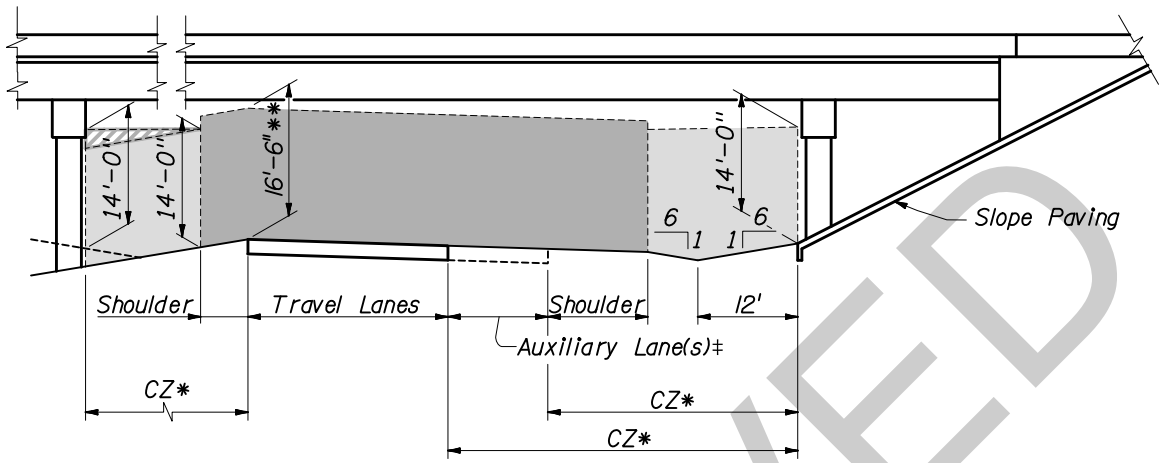
RVR/DCO/ceb

Attachments

ATTACHMENTS

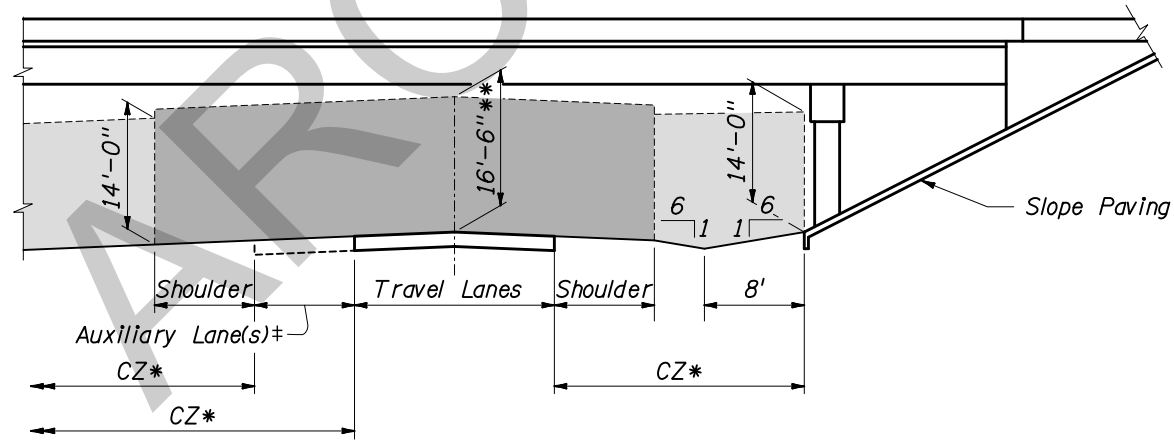
Figure 2.10.1
Figure 2.10.2
Figure 2.10.3
Figure 2.10.4.A
Figure 2.10.4.B
Figure 2.10.5

Figure 2.10.1 Clearances – Rural and Urban Interstates (Freeways), Rural Arterials and Collectors, with Projected 20-Year ADT of 1500 or Greater



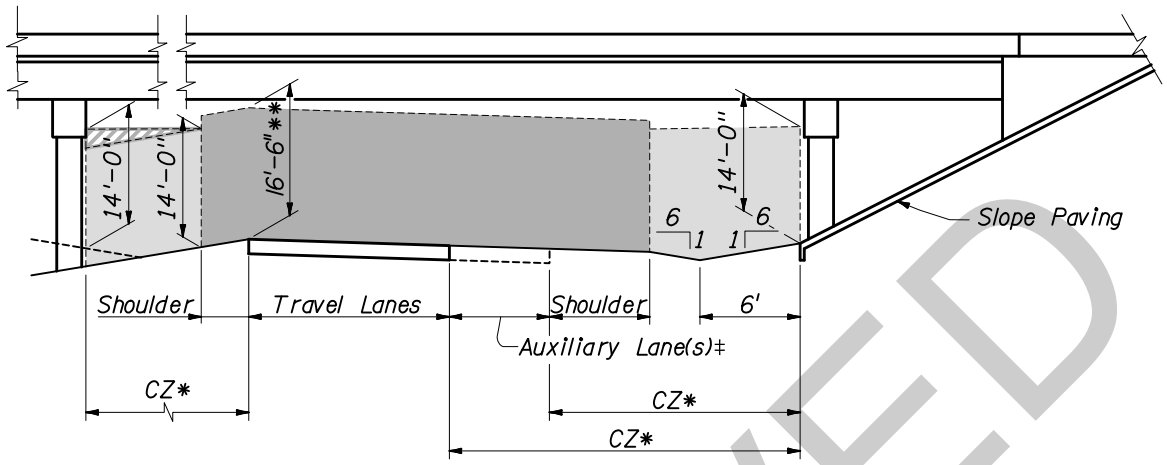
* Clear Zone – To Pier (Shown), Face of Retaining Wall/Coping or Toe of Slope (Similar)
** See Table 2.10.1 Vertical Clearances for Bridges
‡ When present, Auxiliary lane(s) may be located on either or both sides of Travel Lanes.

Figure 2.10.2 Clearances – Rural Arterials and Collectors with Projected 20-Year ADT of Less than 1500



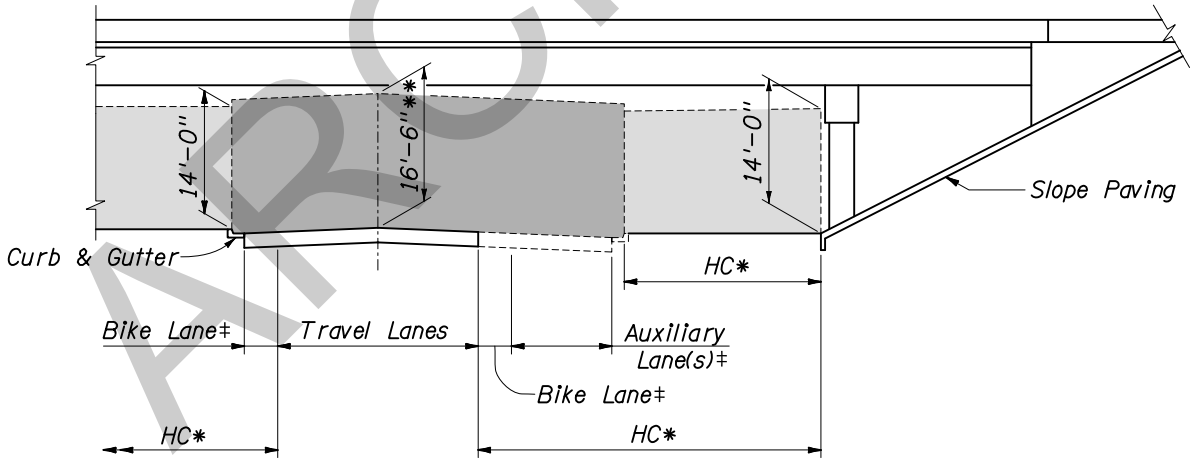
* Clear Zone – To Pier (Shown), Face of Retaining Wall/Coping or Toe of Slope (Similar)
** See Table 2.10.1 Vertical Clearances for Bridges
‡ When present, Auxiliary lane(s) may be located on either or both sides of Travel Lanes.

Figure 2.10.3 Clearances – Urban Arterials and Collectors (Without Curb and Gutter)



* Clear Zone – To Pier (Shown), Face of Retaining Wall/Coping or Toe of Slope (Similar)
** See Table 2.10.1 Vertical Clearances for Bridges
‡ When present, Auxiliary lane(s) may be located on either or both sides of Travel Lanes.

Figure 2.10.4.A Clearances – Urban Arterials and Collectors (Curb and Gutter) ≤45 mph - Elevation of Bridge



* Horizontal Clearance – To Pier (Shown), Face of Retaining Wall/Coping or Toe of Slope (Similar). See Table 2.11.6 Horizontal Clearance to Bridge Piers and Abutments
** See Table 2.10.1 Vertical Clearances for Bridges
‡ When present, Auxiliary lane(s) may be located on either or both sides of Travel Lanes.

Figure 2.10.4B Clearances–Urban Arterials and Collectors (Curb and Gutter) ≤45 mph - Section through Bridge

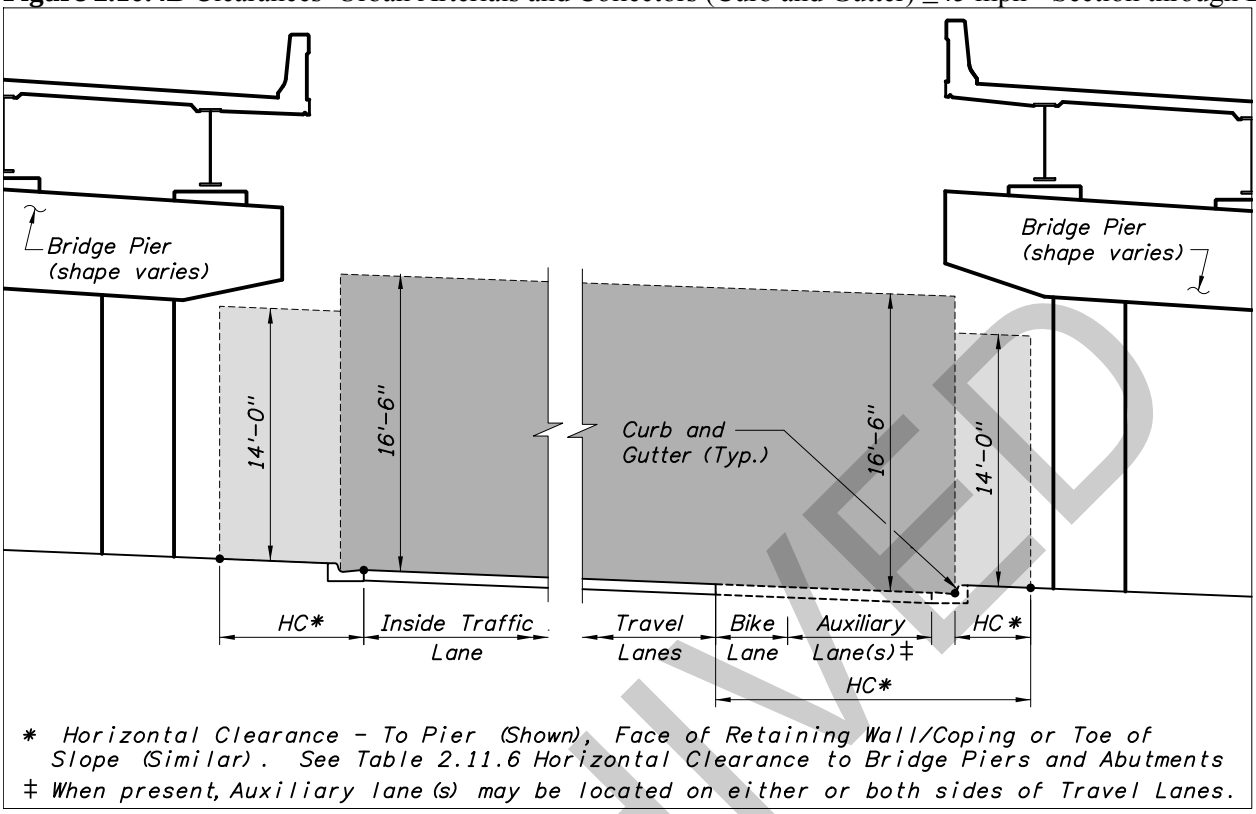


Figure 2.10.5 Clearances – Urban Arterials and Collectors (Curb and Gutter) with Traffic Barrier