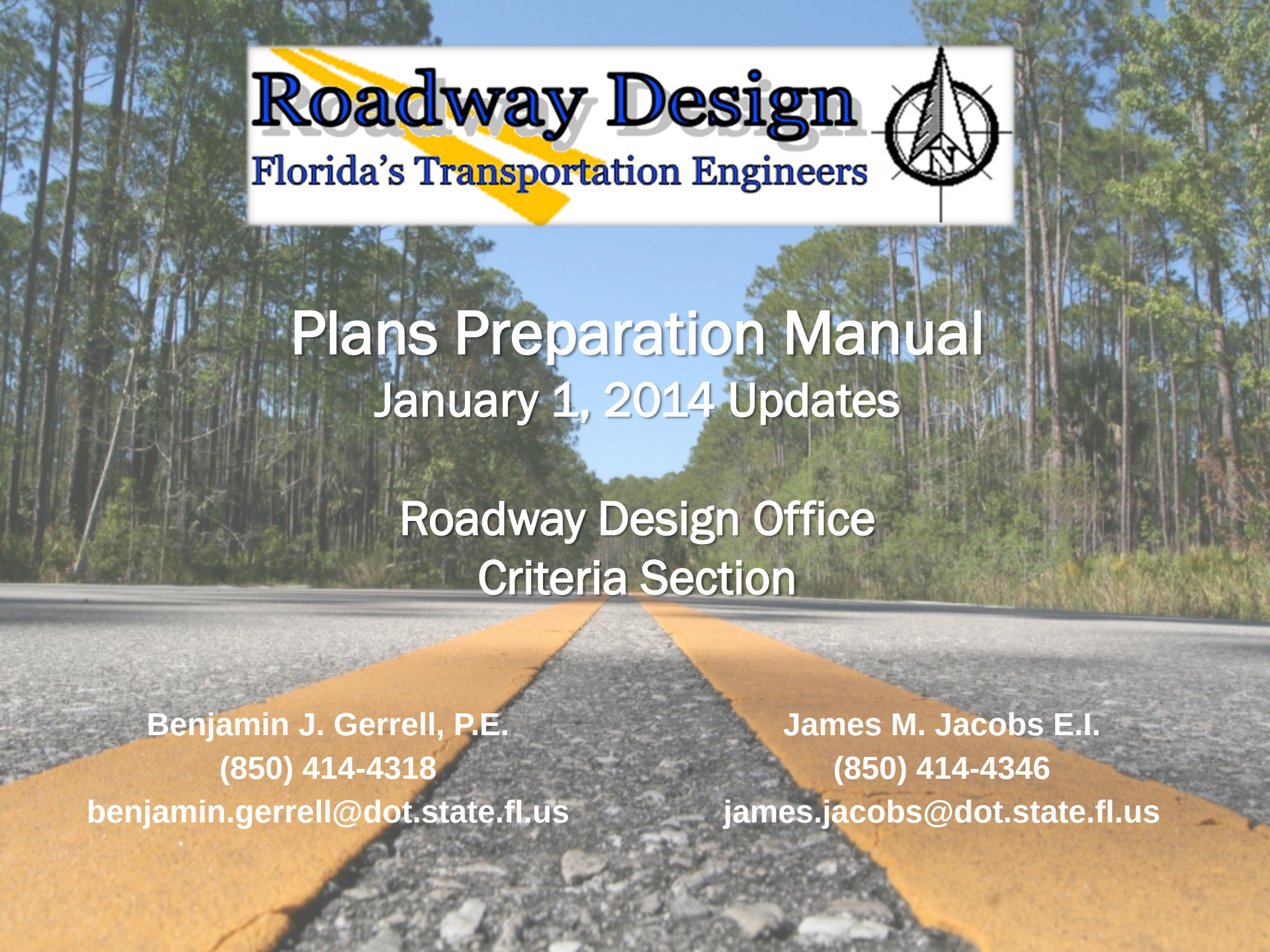

Plans Preparation Manual

January 1, 2014 Updates

Roadway Design Office
Criteria Section

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benjamin.gerrell@dot.state.fl.us

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Plans Preparation Manual

Overview of PPM Update Process

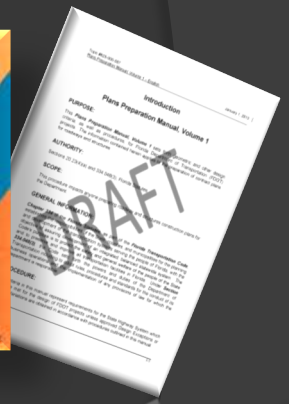
Overview of PPM Update Process

- Two Volumes
- English Units
- Electronic Version

http://www.dot.state.fl.us/rddesign/PPMManual/PPM.shtm

PPM Update Process

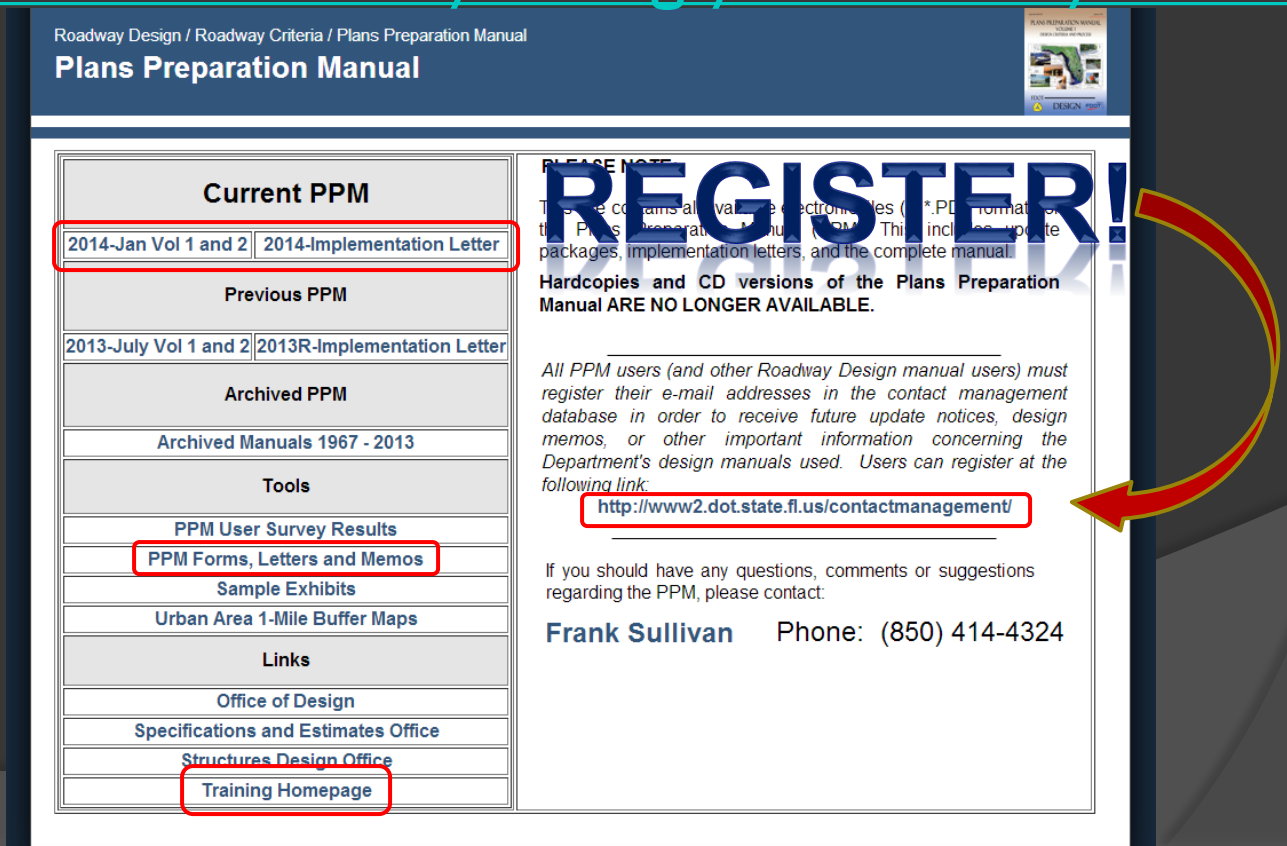
- **District Roadway Design Engineers Team**
  - Primary designer from each district
  - Biannual and monthly meetings
- **Draft Submittals**
  - Received throughout the year
  - Reviewed at DRDE meetings
- **District Design Engineers**
  - Review Final PPM Draft
  - Provide Comments
- **Federal Highway Administration (FHWA)**
  - Review Final PPM Draft
  - Provide Comments
- **Adoption of PPM Updates**



Updates

- Implementation Design Bulletin
- Complete Manual
- Updated Forms
- Contact Mailer - Notifications

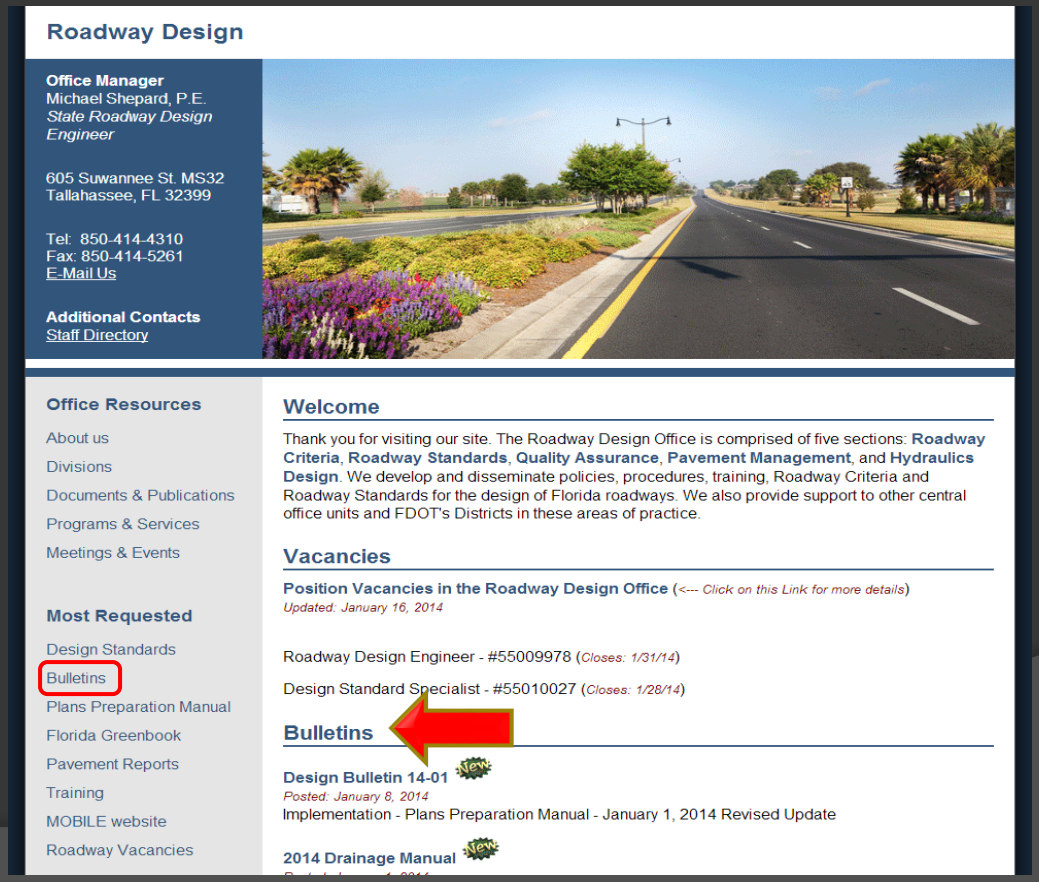
http://www.dot.state.fl.us/rddesign/PPMManual/PPM.shtm



Design Bulletins

- **Contact Mailer Notifications**
- **Our website:**

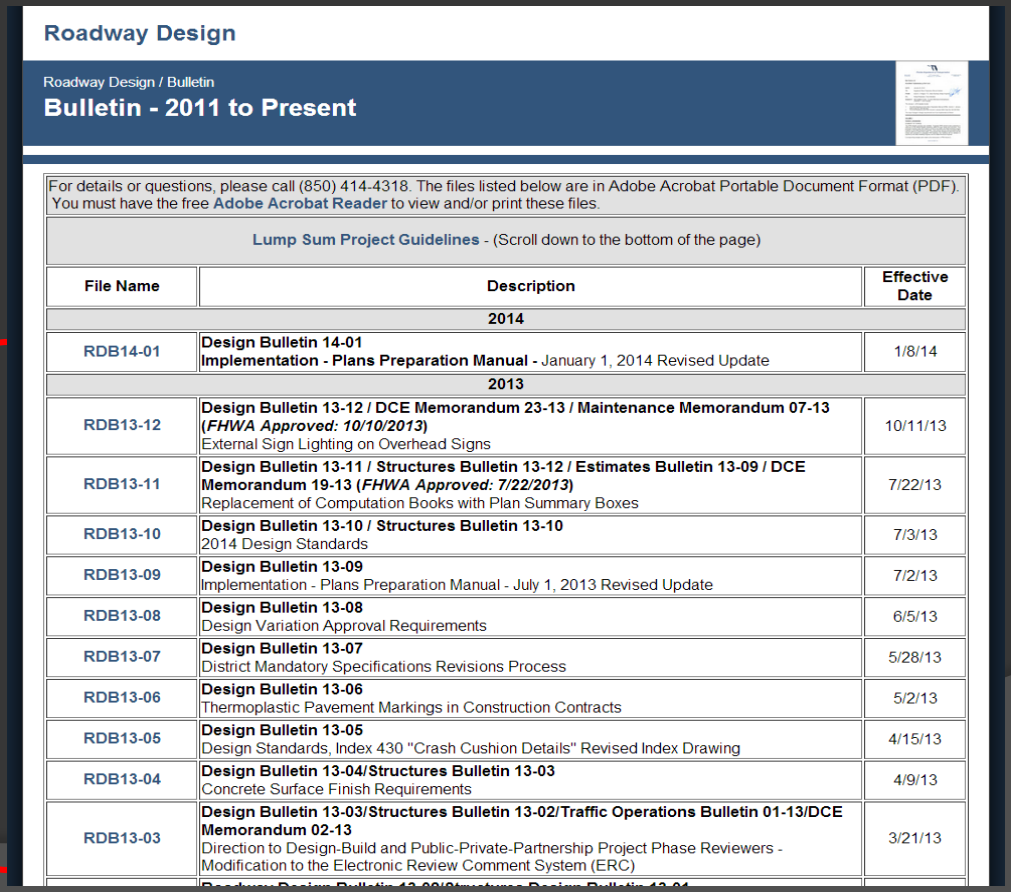
http://www.dot.state.fl.us/rddesign/



Design Bulletins

- **Contact Mailer Notifications**
- **Our website:**

http://www.dot.state.fl.us/rddesign/Bulletin/default.shtm



Roadway Design

Roadway Design / Bulletin

Bulletin - 2011 to Present

For details or questions, please call (850) 414-4318. The files listed below are in Adobe Acrobat Portable Document Format (PDF). You must have the free **Adobe Acrobat Reader** to view and/or print these files.

Lump Sum Project Guidelines - (Scroll down to the bottom of the page)

File Name	Description	Effective Date
	2014	
RDB14-01	**Design Bulletin 14-01** **Implementation - Plans Preparation Manual -** January 1, 2014 Revised Update	1/8/14
	2013	
RDB13-12	**Design Bulletin 13-12 / DCE Memorandum 23-13 / Maintenance Memorandum 07-13 (*FHWA Approved: 10/10/2013*)** External Sign Lighting on Overhead Signs	10/11/13
RDB13-11	**Design Bulletin 13-11 / Structures Bulletin 13-12 / Estimates Bulletin 13-09 / DCE Memorandum 19-13 (*FHWA Approved: 7/22/2013*)** Replacement of Computation Books with Plan Summary Boxes	7/22/13
RDB13-10	**Design Bulletin 13-10 / Structures Bulletin 13-10** 2014 Design Standards	7/3/13
RDB13-09	**Design Bulletin 13-09** Implementation - Plans Preparation Manual - July 1, 2013 Revised Update	7/2/13
RDB13-08	**Design Bulletin 13-08** Design Variation Approval Requirements	6/5/13
RDB13-07	**Design Bulletin 13-07** District Mandatory Specifications Revisions Process	5/28/13
RDB13-06	**Design Bulletin 13-06** Thermoplastic Pavement Markings in Construction Contracts	5/2/13
RDB13-05	**Design Bulletin 13-05** Design Standards, Index 430 "Crash Cushion Details" Revised Index Drawing	4/15/13
RDB13-04	**Design Bulletin 13-04/Structures Bulletin 13-03** Concrete Surface Finish Requirements	4/9/13
RDB13-03	**Design Bulletin 13-03/Structures Bulletin 13-02/Traffic Operations Bulletin 01-13/DCE Memorandum 02-13** Direction to Design-Build and Public-Private-Partnership Project Phase Reviewers - Modification to the Electronic Review Comment System (ERC)	3/21/13

As customers, your input is important to us!

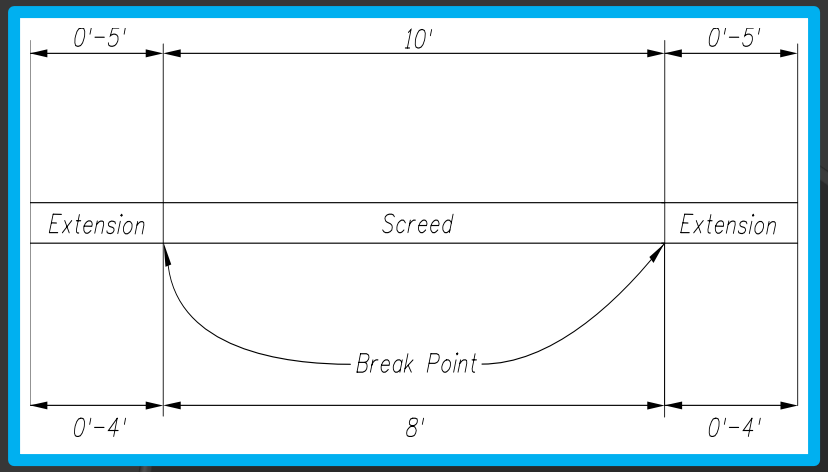
We want to hear from you!

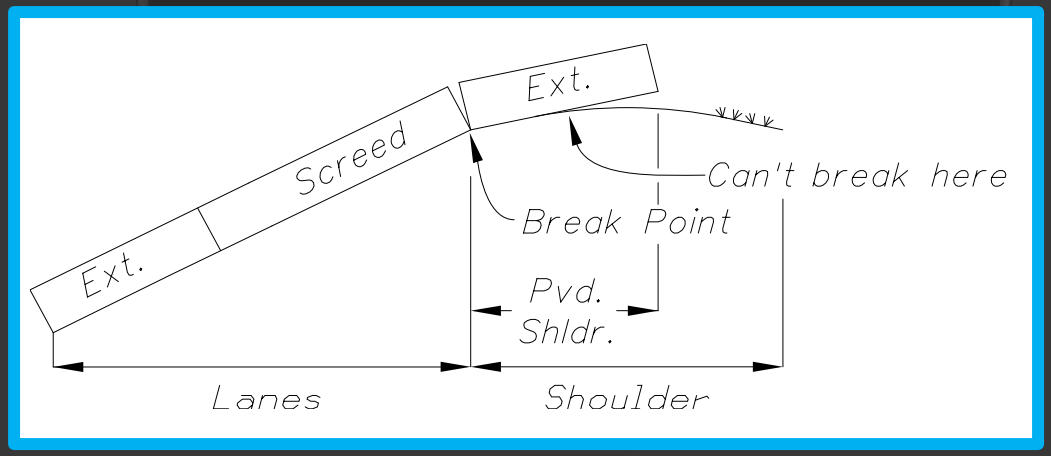
2014 PPM Updates

- Shoulders in Superelevated Sections
- Retaining Wall Access
- Right of Way

Shoulders in Superelevated Sections

Turn 1 of the Daytona Speedway.





Asphalt Paving Machines

Dimensions

- Screed 8 or 10 feet
- Ext. 4 or 5 feet wide

Shoulders in Superelevated Sections

Shoulders in Superelevated Sections

- Section 2.3 Shoulders
  - Reason for Change
    - Improve constructability of shoulders
      - Paved shoulders ≤ 5 ft.
      - 6% or greater superelevation
      - Measuring difficult
      - Constructing economically difficult

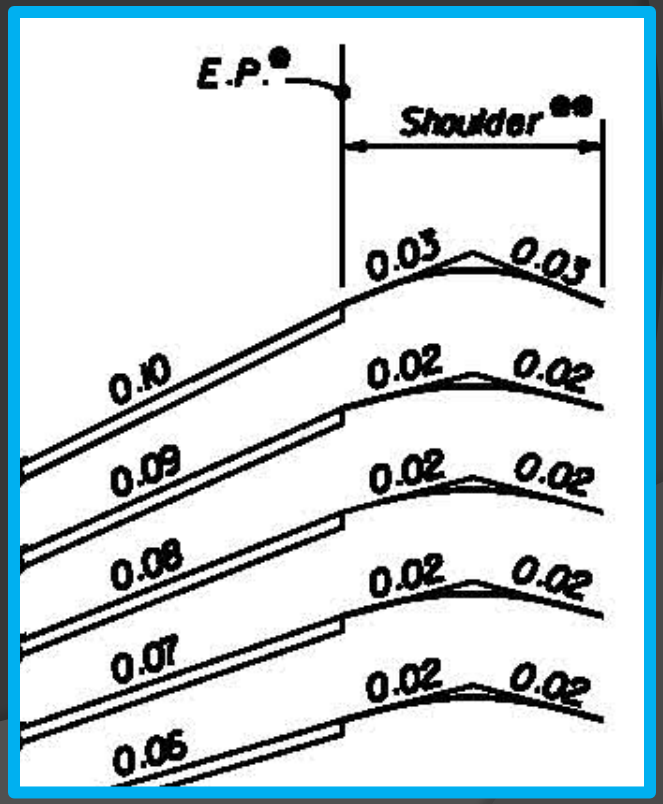
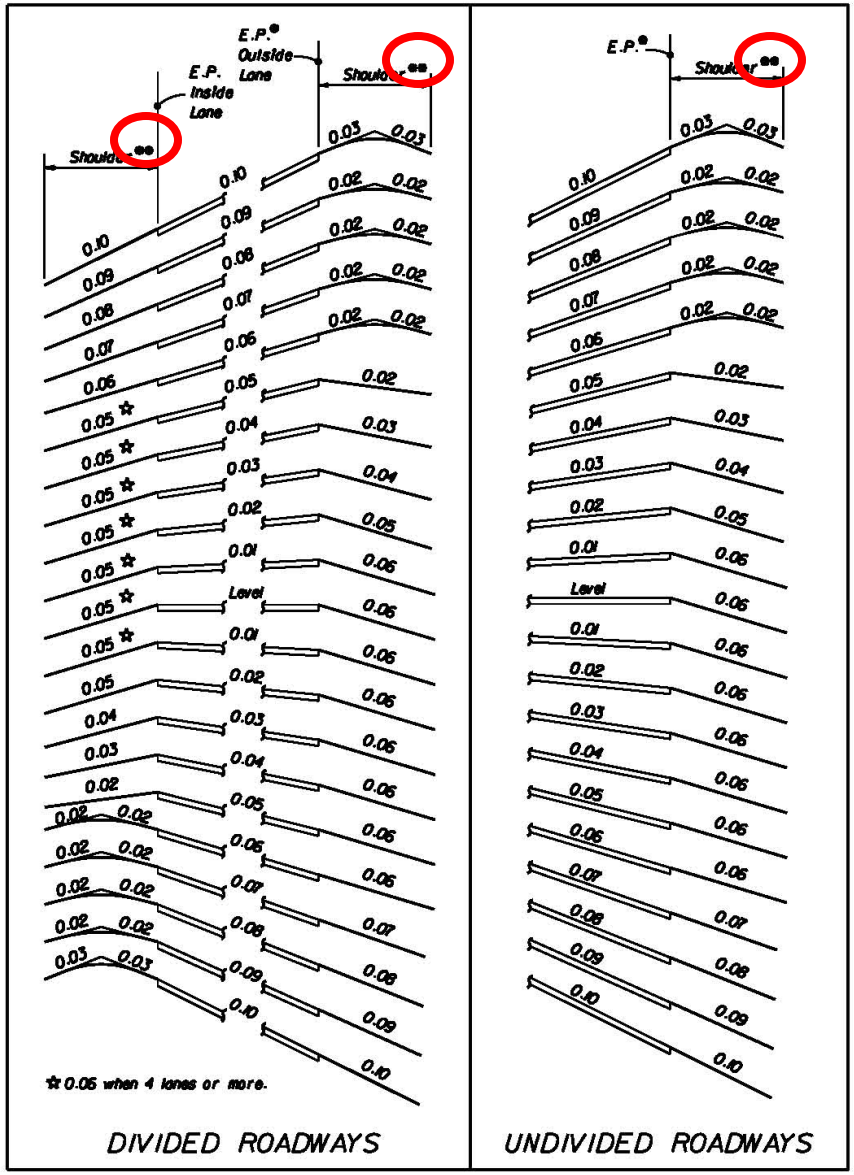


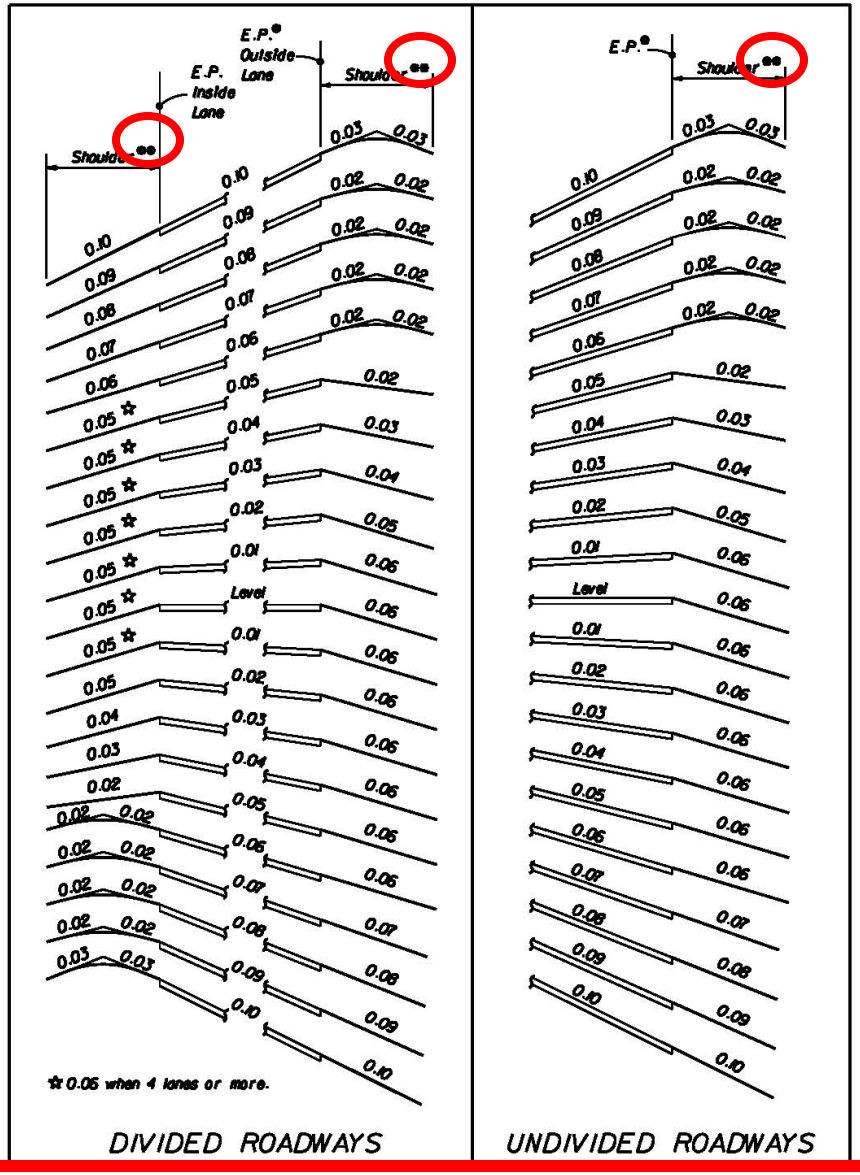
Figure 2.3.1.A Shoulder Superelevation



* For projects constructed with concrete pavement, the shoulder shall be superelevated about the outside edge of the outside slab.

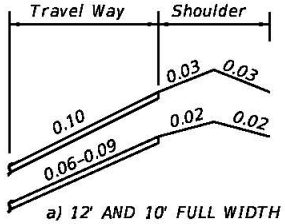
** For shoulders with paved widths 5 feet or less (all Highway Types) see Special Shoulder superelevation details (**Figure 2.3.1.B**).

Figure 2.3.1.A Shoulder Superelevation



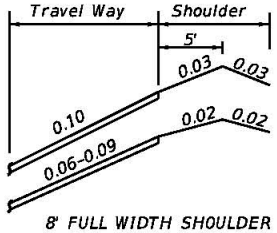
** For shoulders with paved widths 5 feet or less (all Highway Types) see Special Shoulder superelevation details (**Figure 2.3.1.B**).

Figure 2.3.1.B Special Shoulder Superelevation

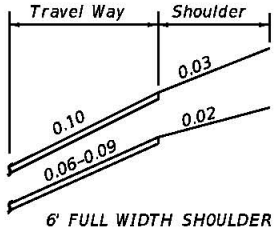


a) 12' AND 10' FULL WIDTH SHOULDERS WITH 5' OR LESS PAVED WIDTHS,

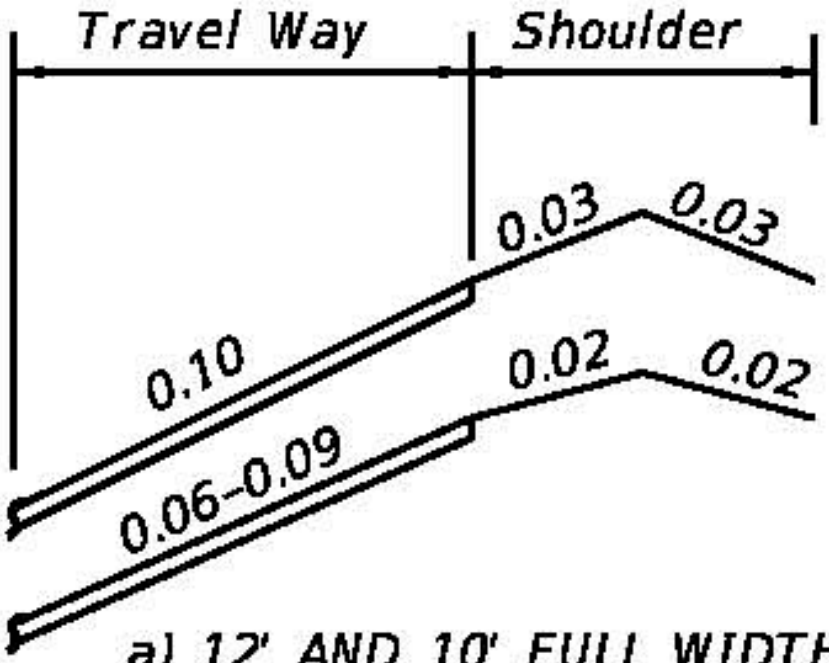
b) 8' FULL WIDTH SHOULDERS WITH 4' OR LESS PAVED WIDTHS,



8' FULL WIDTH SHOULDER WITH 5' PAVED WIDTH



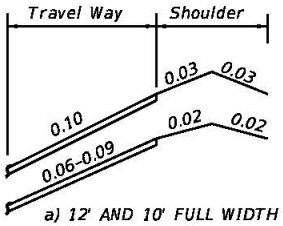
6' FULL WIDTH SHOULDER WITH 5' OR LESS PAVED WIDTH



a) 12' AND 10' FULL WIDTH SHOULDERS WITH 5' OR LESS PAVED WIDTHS,

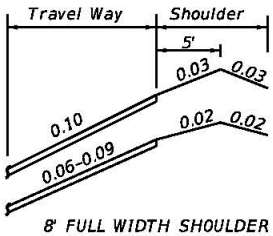
b) 8' FULL WIDTH SHOULDERS WITH 4' OR LESS PAVED WIDTHS,

Figure 2.3.1.B Special Shoulder Superelevation

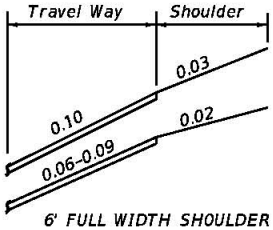


a) 12' AND 10' FULL WIDTH SHOULDERS WITH 5' OR LESS PAVED WIDTHS,

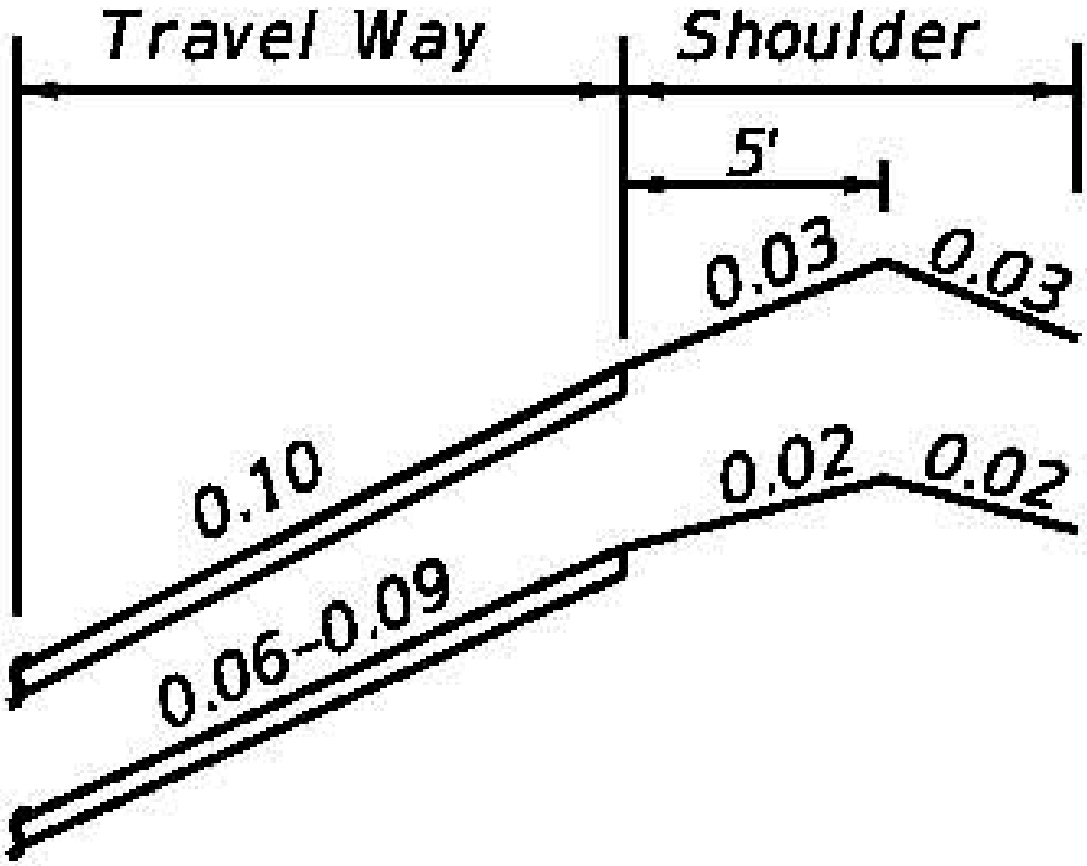
b) 8' FULL WIDTH SHOULDERS WITH 4' OR LESS PAVED WIDTHS,



8' FULL WIDTH SHOULDER WITH 5' PAVED WIDTH

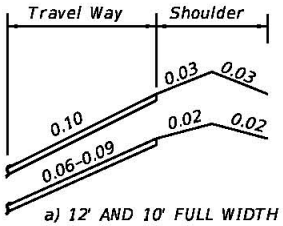


6' FULL WIDTH SHOULDER WITH 5' OR LESS PAVED WIDTH



8' FULL WIDTH SHOULDER
WITH 5' PAVED WIDTH

Figure 2.3.1.B Special Shoulder Superelevation



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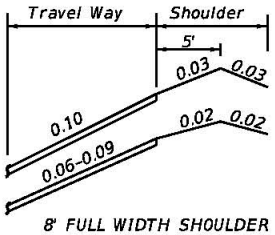
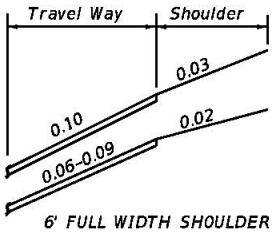
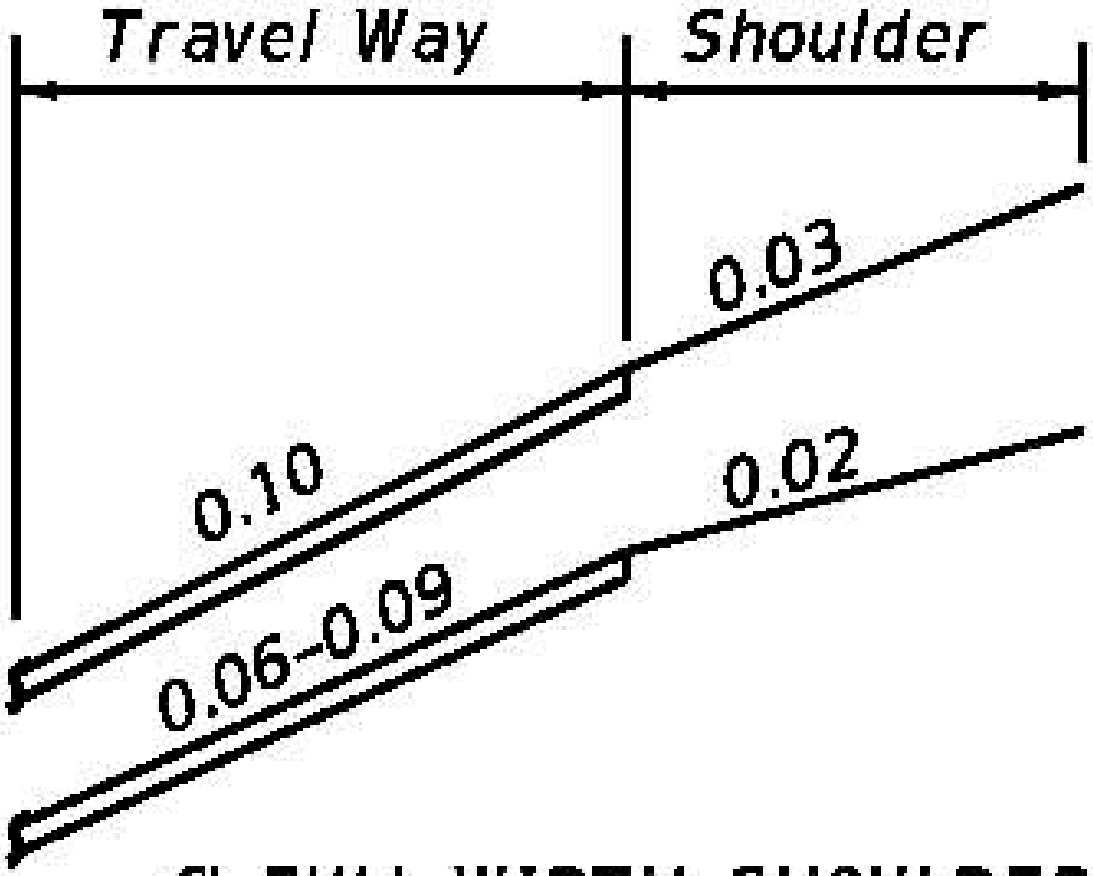
b) 8' FULL WIDTH SHOULDERS WITH 4' OR LESS PAVED WIDTHS,



8' FULL WIDTH SHOULDER WITH 5' PAVED WIDTH



6' FULL WIDTH SHOULDER WITH 5' OR LESS PAVED WIDTH



6' FULL WIDTH SHOULDER
WITH 5' OR LESS PAVED WIDTH

Retaining Wall Access

- Section 2.4 Roadside Slopes
  - Reason for Change
    - Maintenance
      - Personnel
      - Vehicles

Retaining Walls Access

- 2014 PPM Revision
  - Section 2.4 Roadside Slopes
    - 10 foot flat area
    - Retaining Walls
    - Maintenance Access

Retaining Walls Access

- 2014 PPM Revision
  - Section 2.4 Roadside Slopes
    - 10 foot flat area
    - Retaining Walls
    - Maintenance Access
    - Not for gravity walls

Right of Way

- Reason for Change
  - Property Owner's
    - Intentions or
    - Disposition
  - License Agreements
  - Temporary Construction Easement (TCE)

Right of Way

- TCE vs License Agreement
  - Temporary Construction Easement
    - Needed for the project
    - Compensate owner
  - License Agreements
    - Not needed for the project
    - No compensation

Right of Way

- Section 12.2.2
  - Don’t assume
    - Property owner’s intentions or disposition
    - Cure plan will be build by property owner
      - Cure Plan
        - A proposal submitted by an appraiser to restore value to a remainder.
        - It’s just a proposal
        - FDOT does not actually do the work in plan
        - Owner gets the $$ to effectuate the cure

Summary

- Shoulders in Superelevated Sections
  - Figure 2.3.1.B
    - Paved shoulders $\leq$ 5 ft.
    - Superelevated curves 6% or greater
- Retaining Wall Access
  - Section 2.4 Roadside Slopes
    - 10 foot flat area
    - Retaining Walls (Not for gravity walls)
    - Maintenance Access
- Right of Way
  - Section 12.2.2
    - Don’t assume
      - Property owner’s intentions or disposition
      - Cure plan will be build by property owner

Thank You!

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2014 PPM Changes for Bridge Vertical Clearance

Andre Pavlov
State Structures Design Office
February 4, 2014

Reason for Changes in FDOT Vertical Clearance Policy

District Structures Design Engineers were signing Design Variations for existing bridge vertical clearances between 16’-0” and 16’-6” (PPM Chapter 2, Section 10).

A Policy on Geometric Design of Highways and Streets

Rural Arterials (7.2)

Urban Arterials (7.3)

Freeways (8.2)

New or reconstructed structures should provide 16 ft. clearance over the entire roadway width including the usable width of shoulders. Additional clearance to allow for future resurfacing should be considered.

2014 PPM Revisions

Table 2.10.1 Minimum Vertical Clearances for New Bridges

FACILITY TYPE (Freeways, Arterials, Collectors & Others) [1]	CLEARANCE
Roadway or Railroad Over Roadway	16'-6"
Roadway Over Railroad	23'-6" [2]
Pedestrian Over Roadway	17'-6"
Pedestrian Over Railroad	23'-6" [2]

1. For Clearance Over Waterways, see ***Section 2.10.1*** of this volume.
2. Over High Speed Rail Systems, see ***Section 6.3.5*** of this volume and the latest version of ***American Railway Engineering and Maintenance-of-Way Association*** (**AREMA**) guidelines, or the design office of the high speed rail line of interest for specific guidelines and specifications. Over Electrified Railroad, the minimum vertical clearance shall be 24 feet 3 inches. (See ***Topic No. 000-725-003: South Florida Rail Corridor Clearance***.) Also see ***Section 6.3.5*** of this volume.

2014 PPM Revisions

Table 2.10.2 Minimum Vertical Clearances for New Sign and Signal Structures

TYPE OF STRUCTURE	CLEARANCE
Overhead Sign Structures	17'-6"
Overhead Dynamic Message Sign Structures	19'-6"
Signals On Span Wires, Mast Arms, or Other Structures	17'-6"

2014 PPM Revisions

2.10 Vertical Clearance

Minimum vertical clearances, with the exception of structures over water (see ***Section 2.10.1***), are contained in the criteria tables and figures. On rural Interstate routes or single Interstate routes through urban areas, approved Design Exceptions are required for bridge vertical clearances less than 16 feet and must be coordinated with Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA) as described in ***Section 23.3***. For bridges, sign structures and signal structures, minimum vertical clearance is the least distance measured between the bridge superstructure, signs, signals, luminaires or support members and the traffic lane or shoulder directly below.

For any construction affecting existing bridge clearances (e.g., bridge widenings or resurfacing) vertical clearances less than 16'-0" shall be maintained or increased. If reducing the design vertical bridge clearance to a value between 16'-0" and 16'-2", the design vertical clearance dimension in the plans shall be stated as a minimum with a note requiring the contractor to submit a certified survey confirming the as-built least vertical clearance is greater than the design vertical clearance.

For any construction affecting existing signs, vertical clearances less than 17'-0" shall be maintained or increased. For any construction affecting existing Dynamic Message Sign (DMS) structure clearances, all vertical clearances shall be maintained or increased.

For any construction affecting existing traffic signals, vertical clearances between 15'-0" and 17'-0" shall be maintained or increased. Vertical clearances less than 17'-0" will require a Design Variation. Existing signal vertical clearances below 15'-0" shall be "warranted for replacement". No Design Variations will be approved allowing signal vertical clearances less than 15'-0".

2014 PPM Revisions

2.10 Vertical Clearance

Minimum vertical clearances, with the exception of structures over water (see ***Section 2.10.1***), are contained in the criteria tables and figures. On rural Interstate routes or single Interstate routes through urban areas, approved Design Exceptions are required for bridge vertical clearances less than 16 feet and must be coordinated with Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA) as described in ***Section 23.3***. For bridges, sign structures and signal structures, minimum vertical clearance is the least distance measured between the bridge superstructure, signs, signals, luminaires or support members and the traffic lane or shoulder directly below.

Moved from PPM 25.4.13 Revised Language

2014 PPM Revisions

For any construction affecting existing bridge clearances (e.g., bridge widenings or resurfacing) vertical clearances less than 16'-0" shall be maintained or increased. If reducing the design vertical bridge clearance to a value between 16'-0" and 16'-2", the design vertical clearance dimension in the plans shall be stated as a minimum with a note requiring the contractor to submit a certified survey confirming the as-built least vertical clearance is greater than the design vertical clearance.

For any construction affecting existing signs, vertical clearances less than 17'-0" shall be maintained or increased. For any construction affecting existing Dynamic Message Sign (DMS) structure clearances, all vertical clearances shall be maintained or increased.

For any construction affecting existing traffic signals, vertical clearances between 15'-0" and 17'-0" shall be maintained or increased. Vertical clearances less than 17'-0" will require a Design Variation. Existing signal vertical clearances below 15'-0" shall be "warranted for replacement". No Design Variations will be approved allowing signal vertical clearances less than 15'-0".

New Policy

2014 PPM Revisions

25.1.2 Application

The criteria included in this chapter are for all RRR projects except for Interstate highways, freeways, and Limited Access Florida Intrastate Highway System (FIHS)/Strategic Intermodal System (SIS) Corridors and Connectors, and are not intended to apply to new construction or major modifications of existing facilities.

25.4.13 Vertical Clearance

In addition to the requirements of PPM 2.10, the following provisions apply:

Bridge Underpass Clearance - Maintain a minimum vertical clearance of 14 feet 6 inches through milling and resurfacing. In accordance with the ***Traffic Engineering Manual***, ***Section 2.6,*** signing and warning features shall be provided whenever bridge vertical clearance is less than 14 feet 6 inches.

Bridge Low Member Clearance - Contact the District Structures Design Engineer for further guidance if any sway bracing members over the bridge deck have a clearance less than 14 feet.

New Policy

Questions

- Q: Does this mean if the existing vertical clearance is between 16’-0” and 16’-6”, construction may reduce that clearance down to 16’-0”?
- A: Yes, and same reasoning goes for signs and signal structures.
- Q: Does this require a Design Variation?
- A: No.

Questions

- Q: The same logic applies to signs and signals, but why not DMS structures?
- A: On DMS structures, FDOT specifies 19'-6" as a precautionary measure to reduce vibrations due to truck gusts. If an existing DMS structure is performing well at 17'-0", there is no need to do anything. AASHTO treats DMS vertical clearance the same as overhead sign vertical clearance.

Comments or Additional Questions