



Florida Department of Transportation

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ROADWAY DESIGN BULLETIN 09-01

DATE: January 12, 2009

TO: Registered Plans Preparation Manual Holders

FROM: David C. O'Hagan, P.E., State Roadway Design Engineer 

CC: Lora Hollingsworth, Robert Robertson, Jim Mills, Tana Ashbaker

SUBJECT: IMPLEMENTATION - PLANS PREPARATION MANUAL
JANUARY 1, 2009 Edition

The January 1, 2009 Updates include:

1. New Edition of Plans Preparation Manual (PPM), Volume 1, January 2009 (Topic No. 625-000-007).
2. New Edition of PPM, Volume 2, January 2009 (Topic No. 625-000-008).

The major changes in design requirements are to be implemented as follows:

VOLUME 1

Volume 1, Introduction

SUMMARY OF CHANGE:

This section has been updated to reflect the change in the maximum lifespan of Design Bulletins for the Plans Preparation Manual from 270 days to 450 days.

IMPLEMENTATION:

These changes are effective on all applicable Design Bulletins beginning immediately.

Volume 1, Chapter 1, Section 1.9.1 Design Speed Coordination and Approvals

SUMMARY OF CHANGE:

This section has been updated to define the design speed approval authority for Strategic Intermodal System (SIS) and Emerging SIS Highway Intermodal Connectors not on the State Highway System in accordance with the Development of the SIS Highway Component Directive (Topic No. 525-030-251-a). Corresponding changes were made in Section 2.0.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 1, Section 1.12 Design Vehicle

SUMMARY OF CHANGE:

This section was modified to include the AASHTO WB-109D as the design vehicle for tandem truck routes.

IMPLEMENTATION:

This change is effective on all applicable projects beginning design on or after January 1, 2009, however it may be applied to projects currently underway at the discretion of the District.

Volume 1, Chapter 2, Section 2.2.2 Multilane Facility Median Policy

SUMMARY OF CHANGE:

This section was updated to clarify that raised or restrictive medians are required on all multilane SIS facilities.

IMPLEMENTATION:

This change is clarification of existing requirements already in effect.

Volume 1, Chapter 2, Section 2.6 Grades

SUMMARY OF CHANGE:

This section was modified to include a reference to the Utility Accommodation Manual for utility clearances.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 2, Table 2.6.3 Criteria for Grade Datum

SUMMARY OF CHANGE:

A footnote was added to the table that requires a reduction in the design resilient modulus and Pavement Design Engineer notification when the clearance for the roadway base course is less than three feet above the base clearance water elevation.

IMPLEMENTATION:

These changes are based on changes to Section 5.2.2 of the Flexible Pavement Design Manual. The changes are effective on all applicable projects beginning pavement design on or after March 15, 2008, but may be applied to projects currently underway at the discretion of the design engineer of record as described in the [Implementation Letter for the March 15, 2008 Updates](#).

Volume 1, Chapter 2, Table 2.10.2 Minimum Vertical Clearances for Signs

SUMMARY OF CHANGE:

A footnote was added to this table to clarify that for cantilever structures, vertical clearance only applies to the portion of the roadway directly beneath the structure. Corresponding changes were made to Table 2.10.3 (Signals) and Table 2.10.4 (Overhead DMS).

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 2, Table 2.11.3 Horizontal Clearance for Utility Installations

SUMMARY OF CHANGE:

This section was modified to include a reference to the Utility Accommodation Manual for horizontal clearances for utilities. Corresponding changes were made to Table 21.2, and Table 25.4.14.4.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 2, Section 2.16 High Speed Urban and Suburban Arterial Highways

SUMMARY OF CHANGE:

This section has been rewritten to merge the criteria for high-speed urban arterial highways (previous Section 2.17) with the criteria for four-lane high-speed suburban highways (previous Section 2.16). Some of the language in this section was modified to clarify intent. Suggested median shoulders and right of way widths were added to better accommodate future roadway widening. The two figures were updated to show example four- and six-lane sections. Exhibit TYP-13 in Volume 2 was modified accordingly.

IMPLEMENTATION:

This change is effective on all applicable projects beginning design on or after January 1, 2009, however it may be applied to projects currently underway at the discretion of the District.

Volume 1, Chapter 7, Section 7.2.1 Design Criteria

SUMMARY OF CHANGE:

This section was revised to include new requirements for sign lighting including the requirement for only induction lighting as the standard for sign lighting. Table 7.2.1 was removed, and the sign lighting criteria was moved to the new Table 7.3.3.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning immediately.

Volume 1, Chapter 7, Section 7.2.8.2 Permanent Marking Applications

SUMMARY OF CHANGE:

This section was revised to include design requirements for audible and vibratory pavement markings on all flush shoulder rural roadway projects (excluding limited access roadways).

IMPLEMENTATION:

These changes are based on [Roadway Design Bulletin 08-07](#) and were effective on all applicable projects beginning with the January 2009 lettings as described in the design bulletin.

Volume 1, Chapter 7, Table 7.3.4 Underdeck Lighting

SUMMARY OF CHANGE:

A footnote was added to this table prohibiting the attachment of conduit or luminaires to bridge girders.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 7, Section 7.4.12 Mast Arm Supports

SUMMARY OF CHANGE:

This section revises the Department's Mast Arm Policy and establishes new requirements for signalized intersections both within and outside the ten mile coastline boundary. Corresponding changes were made to Chapter 25.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009 and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 1, Chapter 7, Section 7.4.16 Number of Signal Heads for Through Lanes

SUMMARY OF CHANGE:

This section was added to provide requirements for signal head type and placement with respect to the number of lanes. Corresponding changes were made to Chapter 25.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009 and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 1, Chapter 7, Section 7.4.17 Backplates

SUMMARY OF CHANGE:

This section was added to provide requirements for louvered backplates on all signal sections for all approaches, and retroreflective backplate borders on backplates where posted approach speeds are 45 mph or greater. Corresponding changes were made to Chapter 25.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009 and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 1, Chapter 7, Section 7.4.18 Span Wire Assemblies

SUMMARY OF CHANGE:

This section was added to require that all signal span wire assemblies be perpendicular spans, box spans, or drop box spans, and diagonal span assemblies only be used for flashing beacon installations.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009 and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 1, Chapter 8 Pedestrian, Bicycle and Public Transit Facilities

SUMMARY OF CHANGE:

Much of this chapter was rewritten to clarify FDOT requirements for bicycle and pedestrian facilities. Corresponding changes were made to Chapters 2, 10, and 25. The Introduction (Glossary of Terms) has also been updated to include new definitions for Bicycle Lane, Bicycle Way, Pedestrian Way, Urban Area and Urbanized Area.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009 and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 1, Chapter 9, Section 9.1 Landscape - General

SUMMARY OF CHANGE:

This section has been updated to expand the definition of landscape to include additional considerations for landscape plans. Also, various websites and reference manuals were listed as resources for information on landscape plans.

IMPLEMENTATION:

These changes are clarification of existing requirements and considerations which are effective on all applicable projects beginning immediately.

Volume 1, Chapter 9, Section 9.2 Maintenance Plan

SUMMARY OF CHANGE:

This section was modified to provide specific guidance on the preparation of a performance based landscape maintenance plan. A list of maintenance plan performance requirements was also added to ensure that all aspects of the installed landscaping perform to their intended purpose.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 10, Section 10.7.3 Project Information Sign

SUMMARY OF CHANGE:

This section was added to provide requirements for the use of the Project Information Sign.

IMPLEMENTATION:

These changes are based on [Roadway Design Bulletin 05-08](#) and are already in effect.

Volume 1, Chapter 10, Section 10.11.1 Traffic Barriers

SUMMARY OF CHANGE:

This section was modified in response to new federal requirements for Transportation Management Plans. Positive protection devices shall be considered in all places where workers are at an increased risk from motorized traffic. Some of the potential situations are listed where these criteria may be applicable.

IMPLEMENTATION:

These changes are clarification of existing requirements in accordance with the Final Rule on Temporary Traffic Control Devices (23 CFR Part 630, Subpart K) that was published in the Federal Register (72 FR 68480) on December 5, 2007 with an effective date of December 4, 2008.

Volume 1, Chapter 10, Exhibit 10-A Lane Closure Worksheet

SUMMARY OF CHANGE:

The Lane Closure Capacity Table on this worksheet was modified to include the capacity of an existing 8-lane roadway converted to 1-Way, 3-Lane.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning immediately.

Volume 1, Chapter 10, Section 10.12.14 Work Area Access

SUMMARY OF CHANGE:

A list of items to be considered in Transportation Management Plans has been added to this section to help improve safety and improve work area access plans.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 14, Section 14.1 Final Engineering Design Process - General

SUMMARY OF CHANGE:

This section has been modified to identify requirements associated with Location Design Concept Acceptance on projects requiring Federal Authorization. Exhibit 14-A has been revised accordingly.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 20 Plans Processing and Revisions

SUMMARY OF CHANGE:

This chapter has been rewritten to reflect current practices.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning immediately.

Volume 1, Chapter 22, Section 22.2 Project Selection

SUMMARY OF CHANGE:

This section has been updated to include JPA Projects with local agency funds as one of the projects that requires written approval by the State Roadway Design Engineer when Lump Sum contracting is used.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009 and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 1, Chapter 23, Section 23.5 Documentation for Central Office Approval

SUMMARY OF CHANGE:

This section was updated to include new crash costs for use in doing a cost to benefit analysis (based on current Highway Safety Improvement Program Guidelines).

IMPLEMENTATION:

These changes are effective on all applicable projects beginning immediately.

Volume 1, Chapter 24 Federal Aid Project Certification

SUMMARY OF CHANGE:

This chapter has been updated to reflect the Florida Federal-Aid Partnership Agreement, Topic No. 700-000-005 and Title 23 U.S. Code (U.S.C.) 106.

IMPLEMENTATION:

These changes are based on the Florida Federal-Aid Partnership Agreement, [Topic No. 700-000-005](#) and are already in effect.

Volume 1, Chapter 25, Section 25.1.2 Application

SUMMARY OF CHANGE:

This section has been updated to specify that Chapter 25 does not apply to projects programmed as Pavement Only Maintenance Resurfacing projects.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning immediately. Refer to the [Work Program Instructions](#) for these projects.

Volume 1, Chapter 25, Section 25.4.27 Sign, Signal, and Lighting Structures

SUMMARY OF CHANGE:

This section was added to provide guidance for existing sign, signal and lighting structures both with and without planned additional loading.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009, however it may be applied to projects currently underway at the discretion of the design engineer of record.

Volume 1, Chapter 26, Section 26.3 Definitions

SUMMARY OF CHANGE:

This section was modified to redefine Category 1 Structures as those with span lengths less than 170 feet. Category 2 Structures were also redefined as those with span lengths equal to or greater than 170 feet.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009 and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 1, Chapter 26, Section 26.9.2 Contents

SUMMARY OF CHANGE:

This section was modified to include specific guidance on the inclusion of Temporary Traffic Control, Prefabricated Bridge Options, and Bicycle Facilities in the Bridge Development Report.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009 and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 1, Chapter 28, Section 28.9 Distribution of Submittals

SUMMARY OF CHANGE:

This section was modified to include requirements for the shop drawing review of mechanical and electrical components of movable bridges. Table 28.3 and Exhibits 28-A and 28-B have been revised accordingly.

IMPLEMENTATION:

These changes are based on [Structures Design Bulletin C08-08](#) and were effective on all applicable projects beginning with the January 2009 letting as described in the design bulletin.

Volume 1, Chapter 29, Section 29.1 Structural Supports for Signs, Luminaires, and Traffic Signals - General

SUMMARY OF CHANGE:

This section was modified to show span limits for overhead signs, mast arms, and signal cable spans. Design Variations are required when these limits are exceeded.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning immediately.

Volume 1, Chapter 29, Section 29.2.1 Sign Structures - General

SUMMARY OF CHANGE:

This section was modified to include linear mass limits on posts installed in single or dual post applications. Slipbase support systems in the standard indexes are still allowed.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 29, Section 29.4.5 Custom Designs

SUMMARY OF CHANGE:

This section was added to require that the EOR be responsible for structural design, foundations, and review of shop drawings when custom signal structures are required

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 1, Chapter 30, Section 30.5 Shop Drawing Review

SUMMARY OF CHANGE:

This section was modified to include checks for steel strap reinforcement on long straps used with proprietary walls.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

VOLUME 2

Volume 2, Chapter 1, Section 1.4 Base Sheet Format

SUMMARY OF CHANGE:

This section was modified to allow aerial photography to be used as a visual aid in the plans when approved by the District Design Engineer. Corresponding changes were made to Chapter 5 of Volume 2.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning immediately.

Volume 2, Chapter 3, Key Sheet

SUMMARY OF CHANGE:

This chapter was modified to require the Construction Contract Number in the upper right corner of the Key Sheet, and the end milepost will also be included on the location map. Exhibit KS-1 was updated accordingly.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning with the July 2009 letting, however it may be applied earlier at the discretion of the design engineer of record.

Volume 2, Chapter 5, Section 5.2 Bridge Hydraulic Recommendation Sheet

SUMMARY OF CHANGE:

The Bridge Hydraulic Recommendation Sheet will now be a required part of the contract plans set. It shall be placed in the structures plans for bridges and in roadway plans for bridge culverts.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009, however it may be applied to projects currently underway at the discretion of the District.

Volume 2, Chapter 6, Typical Section Exhibits

SUMMARY OF CHANGE:

The typical section exhibits were updated to remove the bike lane designation from the paved shoulders. The note requiring designated bike lanes to be labeled was removed from the exhibits. These changes were made to be consistent with the updates to Chapter 8 of Volume 1.

IMPLEMENTATION:

These changes are effective on all applicable projects beginning design on or after January 1, 2009, and on all projects still in the design phase where implementation will not adversely impact production schedules.

Volume 2, Chapter 20, Section 20.3 Utility Adjustments: Sheet Format

SUMMARY OF CHANGE:

The table of Verified Vertical Elevation and Horizontal Location (V_{vh}) for utilities has been modified to include size, material, and station and offsets from the baseline and/or centerline.

IMPLEMENTATION:

This change is effective on all applicable projects beginning design on or after January 1, 2009, however it may be applied to projects currently underway at the discretion of the District.

Volume 2, Chapter 25, Section 25.6 Foundations and Boring Detail Sheets

SUMMARY OF CHANGE:

This section was revised to clarify that standard details for the foundation design of conventional height Highmast Poles are included in the Design Standards. This section has also been revised to clarify the requirements for design of foundations for non-standard highmast poles and for foundations in weaker soil conditions. Corresponding changes have been made to Chapter 7 of Volume 1.

IMPLEMENTATION:

These changes are clarification of existing requirements and are effective on all applicable projects beginning immediately.

Volume 2, Chapter 29, Section 29.1 ITS Plans: General

SUMMARY OF CHANGE:

The chapter was revised to allow an optional "GI" prefix to be placed on Soil Survey and Report of Core Boring sheets that may have been prepared separately and added to the ITS plans prior to the sheet numbering being established.

IMPLEMENTATION:

These changes may be used on all applicable projects beginning immediately.

GENERAL

All other changes in the January 1, 2009 Plans Preparation Manual Update Package primarily consist of minor editing, updated references, clarification and/or error corrections and are effective immediately.

If you have any questions, please contact this office at (850)414-4356.
