

Design Standards Letter

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Effective Date: **01/01/2002**

Section/Plan No.: Sections 2-03, 2-06, 3-02, 3-04, 4-02, 4-03, 4-05, 4-06, 4-09, 6-03, 6-05, 6-07, 8-01, 8-02, 8-04, Figures 1-01.2, 1-02.1, 1-03.5, 1-03.6, 2-03.1, 2-03.2, 2-03.3, 2-03.5, 2-03.7, 2-03.8, 3-01.3, 3-04.1, 3-04.2, 4-02.1, 4-02.2, 4-02.11, 4-02.12, 4-02.13, 4-02.14, 4-04.1, 4-05.6, 4-05.7, 4-05.8, 4-05.9, 4-05.10, 4-05.11, 4-05.12, 4-05.13, 4-06.6, 4-09.3, 4-10.1, 7-02.8, 8-01.15, 8-01.6, 8-01.9, 8-01.10, 8-01.18, 8-01.19, 8-01.20, 8-01.21, 8-01.12, 8-01.13, 8-01.14, 8-01.15, 8-01.16, 8-02.1, 8-02.5, 8-02.9, 8-04.9, 9-10.2

Subject: Project Development Manual Revisions

Body

Questions concerning the Project Development Manual revisions should be directed to General Headquarters, Design Standards Section, Dan Tschirgi (573) 526-2924 or David Silvester (573-526-2903).

NOTE	EXPLANATION
1	The following revisions are effective January 1, 2002.
ITEM	DESCRIPTION OF REVISION
Volume I Table of Contents	Revision dates changed for appropriate sections.
Figure 1-01.2	Deleted obsolete form D-25 "Application for Traffic Signal Interconnect" from list of Standard Forms.
Figure 1-02.1	Updated cost figures for rural preliminary design estimates and revised estimated replacement bridge length.
Figure 1-03.5	Revised Municipal Agreement to match changes previously made by Chief Counsel's office.
Figure 1-03.6	Revised County Agreement to match changes previously made by Chief Counsel's office.
Chapter II Table of Contents	Made revisions to correspond to Section revisions.
2-03	Added guidance to Subsection 2-03.7 to seek additional input and notification when advertising for public hearings or opportunity for public hearings. Also added Email address in Subsection 2-03.11 for submittal of location sketch for Commission approval of location or design.

Figure 2-03.1	Revised U.S. Environmental Protection Agency Region VII address.
Figure 2-03.2	Added Email address for submittal of Commission exhibits.
Figure 2-03.3	Revised phone number for hearing impaired persons to contact MoDOT for participation in public hearing. Previous number was incorrect.
Figure 2-03.5	Revised "Project Summary" form that is submitted with public hearing transcripts.
Figure 2-03.7	This new figure, "Sample Letter to Gather Input from Service Providers," was added to ensure maximum input from sheriff, police, fire, schools, post office, emergency, etc.
Figure 2-03.8	This new figure, "Sample Letter to Interested People," was added to gather additional input from property and business owners.
Chapter II Table of Contents	Made revisions to correspond to Section revisions.
2-06	Minor clarifications to survey procedure, right of way terminology, pavement type selection submittal.
Chapter III Table of Contents	Made revisions to correspond to Section revisions.
Figure 3-01.3	The English version of this figure was not included in previous updates. The figure provided replaces sheet 1 of 2.
3-02	New procedures added to Subsection 3-02.8 for location surveys including ties between the highway survey alignment and corners of the U.S. Public Land Survey System, use of Professional Land Surveyor, and filing with County Recorder of Deeds. Added procedures for re-establishing corner monuments in Subsection 3-02.8 and monumenting right of way in Subsection 3-02.17.
3-04	Added references to new example location survey in Subsection 3-04.6 and cap and post installation details in PDM figures and standard plans in Subsection 3-04.11.
Figures 3-04.1	New "Example Location Survey Plan."
Figure 3-04.2	Former Figure 3-04.1 revised to remove station and offset from Monument Cap.
Chapter IV Table of Contents	Made revisions to correspond to Section revisions.
4-02	Revised right of way terminology from "Limited" to "Controlled" Access in several locations. Requirement added to Subsection 4-02.9 to use location survey monuments to mark right of way on projects with preliminary plans approved after January 1, 2001. Subsection 4-02.13 significantly rewritten to clarify procedures for right of way plans submittal and filing. Please review carefully. Procedures for Change in Route Status Report in right of way plans revised in Subsection 4-02.15. Please review carefully.
Figures 4-02.1, 4-02.2, 4-02.11,	Revised to update terminology from "limited" to "controlled".

and 4-02.12	
Figures 4-02.13 and 4-02.14	Revised dates and approval authority.
4-03	<p>Revised Subsection 4-03.14 (4) to require non-contractual costs to be included in project estimates and expenses.</p> <p>Since the corresponding JSP DSP-90-05B was made ineffective starting 4/02, guidance was added in Subsection 4-03.16 to include extra working days for signal and lighting poles when appropriate.</p> <p>Subsection 4-03.19 was clarified on signing and sealing plans and specifications.</p>
Figure 4-04.1	Clarifications to design criteria. Note 2B expanded to use 12 foot shoulders outside and inside on urban freeways with 6 or more lanes. Note 5A clarified that maximum superelevation on urban conditions applies to non-freeways. Note 14 revised to state that HS-25 loading also applies to major river crossings, and to reference the current version of the MISSOURI VEHICLE ROUTE MAP.
4-05 and Figures 4-05.6 through 4-05.13	New Subsection 4-05.8 and eight figures added with design criteria for roundabouts. The new section was written by a team of MoDOT and consultant engineers.
4-06	Guidance added to Subsection 4-06.1 in response to a FHWA audit to clarify that "future" ramps should be shown on plans when traffic volumes do not warrant construction initially.
Figure 4-06.6	Dimension revisions were added that were omitted on previous versions.
4-09	<p>Revised terminology in Subsection 4-09.6 (5) for "One-Strand Cable - Access Restraint" to be consistent with revised specifications and bid items.</p> <p>Recommended method of specifying drop inlet depths in Subsection 4-09.9(3) revised to decimal measurement in feet.</p> <p>Revised guardrail definitions and applications in Subsection 4-09.7 including bullnose guardrail systems.</p> <p>Revised Subsection 4-09.19 to preclude work by MoDOT maintenance forces on any contracted construction project, without the approval of the Directors of Operations and Project Development. Approved work is included in the project costs per Subsection 4-03.14 (4).</p> <p>Deleted Subsection 4-09.22, "Geographic Reference System Monuments" as they will no longer be installed when location surveys are used.</p>
Figure 4-09.3	Revised terminology from "Limited" to "Controlled" Access and from "Guard Cable" to "Access Restraint."
Figure 4-10.1	Revised example Title Sheet.
Volume II Table of Contents	Revision dates changed for appropriate sections.
6-03	Revised to have pavement type selection requests and recommendations submitted to GHQ Project Operations instead of Design. Please note that the definition of

	<p>"Engineer" is revised in Section 101.2 of the specifications to mean engineer of a functional unit when that functional unit is stated in contract documents. For consistency, the PDM will also use functional unit names in the future, which refer to the engineer of the functional unit or designee.</p> <p>Pavement type selection for bypasses has been moved from Subsection 6-03.2 to Subsection 6-03.9.</p>
6-05	Minor wording changes to Subsection 6-05.12 regarding use of 3-strand guard cable.
6-07	<p>Subsections 6-07.3 and 6-07.4 revised to provide guidance on use of commercial mixes in temporary construction. JSP's DSP-96-02C and DSP-96-03B regarding the use of commercial mixes have been made ineffective starting 4/02.</p> <p>Table 6-07.2 revised to give District discretion on asphalt mix selection on light duty applications when ADT < 3500 and Total Average 24 Hour Commercial Truck Traffic < 400.</p>
Figure 7-02.8	Updated list of Utility Agreements.
8-01	Revised Subsection 8-01.4 (8) (a) to clarify that when mixing 240 and 480 volts within a single system, either two separate pull boxes or one double concrete pull box, Type B shall be used to avoid mixing voltage systems. Several other miscellaneous revisions produced by the Signals and Lighting Quick Action Team.
8-01 (continued)	
Figures 8-01.1-5	Switched English and Metric, changed symbol location to Standard Plan 901.85.
Figures 8-01.6, 8-01.9, 8-01.10, 8-01.18-21	Specified that the Luminaries for Type [II or III]-M-S refer to Type [II or III] - Medium Distribution Semi-Cutoff. Also switched English and Metric.
Figures 8-01.12-15	Added arrows indicating "house side" and "street side". Also added medium distribution semi-cutoff and switched English and Metric.
Figure 8-01.16	This figure with highway lighting symbols was deleted because the symbols were put on new standard plan 901.85.
8-02	<p>Deleted Subsection 8-02.7 (1) (a) "Solid State, Pre-timed Controllers". Almost all controllers purchased today are actuated (which have the capability of being used as a pre-timed controller). A JSP has been created instead for the rare instances that the designer may need to specify a pre-timed controller. The remainder of the section was renumbered accordingly.</p> <p>Deleted Subsection 8-02.8 (1). MoDOT is no longer using Tone Transmitters and Receiver Units. The remainder of the section was renumbered accordingly.</p>
Figure 8-02.1	Removed "Solid-State" and "Tone Equipment" from the flow chart.
Figure 8-02.5	Deleted this figure from the PDM. It is duplicated in Standard Plan 902.80.
Figures 8-02.9, Sheet 1 and 5	This figure is also Standard Form D-37A. Removed the concrete quantity of 2.00 cubic yards from the "Base" section, and added note that concrete requirements are located on Standard Plans 902.10 and 902.30. Changed Top Mount post options to 8 ft (2.4 m) and 15 ft (4.6 m). Added a column for Visors, with 12" lenses and ped heads for options.
Figure 8-02.9, Sheets 2 and 6	This figure is also Standard Form D-37B. Reversed the locations of pushed and median conduit.
Figure 8-02.9,	This figure is also Standard Form D-37C. Removed Solid State Pre-Timed

Sheets 3 and 7	Controller Assemblies and Tone Unit Transmitters and Receivers. Removed the "optional" use of 2 channel detectors in the notes, since they are required. Added the option of choosing the NEMA cabinet type.
8-04	Revised Subsection 8-04.2 (2) (d) to delete use of arrow signs on Type III barricades. Also removed use of flashing electric lights on moveable barricades in Subsection 8-04.3.
8-04 (continued)	Added new Subsection 8-04.5 (3) with guidance on use of permanent (snowplowable) raised pavement markers in new construction and on reflector replacement projects.
Figure 8-04.9	This figure was revised to remove the signs that were shown as mounted on Type III barricades.
Figure 9-10.2	General Note that referenced Standard Drawing 703.35 has been corrected to reference Standard Drawing 703.37.

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