

Design Standards Letter

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Section/Plan No.: P203.20F, P203.21J, P203.50L, P502.05E, P601.00, P602.00B, P602.40, P606.00AL, P606.01C, P606.40C, P606.41F, P608.00G, P609.40L, P616.10AA, P703.10D, P703.11D, P703.12D, P703.13D, P703.14D, P703.15C, P703.40D, P703.41D, P703.42D, P703.43D, P703.44D, P703.45B, P703.80D, P703.81D, P703.82D, P703.83D, P703.84D, P703.85B, P901.00U, P901.01AA, P901.02B, P901.30E, P901.80D, P901.85, P902.00K, P902.10N, P902.15J, P902.20B, P902.21C, P902.30N, P902.40M, P902.50J, P902.70K, P902.80E, P903.01G, P903.03AV, P903.09D

Subject: Supplemental Revisions to the Missouri Standard Plans for Highway Construction

Body

Questions concerning the distribution of the Supplemental Revisions to the Missouri Standard Plans for Highway Construction should be directed to General Headquarters, Keith L. Smith (573) 751-4659 or David Silvester (573) 526-2903.

Please note the changes to the changes to Standard Drawing 606.01. Due to a decision from the Federal Highway Administration (FHWA) important modifications to some Bullnose designs have been made.

Below are the revisions to the October 2001 edition of the Missouri Standard Plans for Highway Construction.

NOTE	EXPLANATION
1	The following revisions are effective with the April 2002 bid opening.
STD. PLAN NO.	DESCRIPTION OF REVISION
203.20F	<i>Sheets 1 through 5 of 5.</i> This drawing was formerly comprised of one sheet. The Superelevation and Widening Table was expanded to two tables, one each for $e_{MAX}=8\%$ (rural) and $e_{MAX}=4\%$ (urban). In the English version, the Superelevation and Widening Tables and accompanying notes were revised to reflect the AASHTO usage of radius to measure a curve, instead of the degree of curve. In the Metric version, the Superelevation runoff length also slightly

	revised by the new AASHTO edition.
203.21J	<i>Sheets 1 through 5 of 5.</i> This drawing was formerly comprised of one sheet. The Superelevation and Widening Table was expanded to two tables, one each for $e_{MAX}=8\%$ (rural) and $e_{MAX}=4\%$ (urban). In the English version, the Superelevation and Widening Tables and accompanying notes were revised to reflect the AASHTO usage of radius to measure a curve, instead of the degree of curve. In the Metric version, the Superelevation runoff length also slightly revised by the new AASHTO edition.
203.50L	Minor clarification by labeling the raised concrete island on the Island Detail diagram.
502.05E	<i>Sheet 1 of 2.</i> The phrase "Tied PCC Shoulder" was inadvertently overlooked a couple years ago when it should have been removed from the inside shoulder in Detail A. The phrase has now been removed. A General Note pertaining to the monolithic casting of shoulders was added.
601.00	New standard drawing for a special field office.
602.00B	The minor errata correction involved moving the witness posts away from the steel right-of-way markers.
602.40	This Standard Drawing has been deleted.
606.00AL	<i>Sheet 1 of 10.</i> Several references to Special Provisions have been removed. These Special Provisions have been incorporated into the Missouri Standard Specifications for Highway Construction. <i>Sheet 2 of 10.</i> The "Hole Punching Detail" diagram's subtitle was retitled "For Steel Post and Wood or Plastic Blocks" to accommodate plastic blocks. A note pertaining to plastic blocks was added to this diagram and one dimension revised. Some notes have been removed since they are now referenced in the Missouri Standard Specifications for Highway Construction. <i>Sheets 3, 5 and 6 of 10.</i> Portions of some notes have been removed since they are now referenced in the Missouri Standard Specifications for Highway Construction.
606.01C	<i>Sheet 1 of 12.</i> Formerly numbered Sheet 1 of 13. A General Note has been revised to indicate the Bullnose pay item will now be a single item comprised of the structure between the nose and the two Post 10s. Previously, the pay item included the length of guardrail between the nose and Post 14. <i>Sheet 2 of 12.</i> Formerly numbered Sheet 2 of 13. The U-bolt diameter has been revised to ½" (13 mm) and the Thrie Beam post now only applies to Posts 9 and 10. Three new diagrams have been added: U-Bolt Cable Clip

	<p><i>Sheet 3 of 5.</i> This new sheet contains a revised diagram that was moved from the former Sheet 2 of 4. The diagram now includes guard cable for both sides of the median.</p> <p><i>Sheets 4 and 5 of 5.</i> Formerly enumerated as Sheets 3 and 4 of 4. Some notes have been removed since they are now referenced in the Missouri Standard Specifications for Highway Construction.</p>
608.00G	<p><i>Sheets 1 and 2 of 2.</i> Sections A-A, E-E, F-F and K-K diagrams were corrected to illustrate the proper relationship of the ½" (13 mm) preformed fiber expansion joint to the existing pavement. Other minor clarifications.</p>
609.40L	<p><i>Sheets 1 and 2 of 2.</i> Revision to 3'-5" (1050 mm) of the distance from the face of the guardrail to the slope toward the curb. This correction brings this drawing into compliance with Standard Drawing 606.00. Also, a new General Note pertaining to the Type A curb bid item was added.</p>
616.10AA	<p><i>Sheets 1 of 5.</i> A new table, Post Size Requirements, has been produced. The Work Zone Sign Mounting Requirement table was also revised to reflect the somewhat more restricted use of the barrier mounting method. The Object Markers diagram was revised and moved to Sheet 3 of 5. The U-Channel Post Splice diagram was clarified and retitled "U-Channel Post Detail". The Height and Lateral Locations for Post and Portable Sign Mounting diagram no longer differentiates between "rural" and "urban" settings. The Wood Post Breakaway diagram has been retitled "Wood Post Detail". A new diagram and detail for Perforated Steel Square Tube has been added. A note pertaining to the bracing of posts was removed and a General Note prohibiting the bracing of support posts was added. Two General Notes were added: one pertaining to</p>
	<p>embedding of post and another related to signs mounted on portable or temporary supports. A new diagram for Perforated Steel Square Tubing was added.</p>
703.10D	<p><i>Sheet 2 of 5.</i> Minor errata correction.</p> <p><i>Sheet 3 of 5.</i> Type I channelizer markers are no longer to be used and have been removed from the drawing. The Object Markers diagram was revised and moved from Sheet 1 of 5. Other minor clarifications.</p> <p><i>Sheet 1 of 3.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 3.</i> Detail Titles were revised.</p>
703.11D	<p><i>Sheet 1 of 3.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 3.</i> Detail Titles were revised.</p>
703.12D	<p>Notes and titles were revised to show the design fill revision from 3'-3" (1000</p>

<p>703.13D</p>	<p>mm) to 2'-0" (610 mm).</p> <p><i>Sheet 1 of 3.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 3.</i> Detail Titles were revised.</p>
<p>703.14D</p> <p>703.15C</p>	<p><i>Sheet 1 of 3.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 3.</i> Detail Titles were revised.</p> <p><i>Sheets 1 through 13 of 13.</i> The Design Fill Height definition and related notes have been revised. The fill height is now the distance from the top of earth fill or roadway to the top of the top slab. This produced a revision to the Design Fill values in the chart.</p>
<p>703.40D</p> <p>703.41D</p>	<p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p> <p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p>
<p>703.42D</p> <p>703.43D</p> <p>703.44D</p>	<p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p> <p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p> <p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p>
<p>703.45B</p>	<p><i>Sheets 1 through 13 of 13.</i> The Design Fill Height definition and related notes have been revised. The fill height is now the distance from the top of earth fill or roadway to the top of the top slab. This produced a revision to the Design Fill values in the chart.</p>
<p>703.80D</p>	<p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610</p>

<p>703.81D</p>	<p>mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p> <p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p>
<p>703.82D</p>	<p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p>
<p>703.83D</p> <p>703.84D</p> <p>703.85B</p>	<p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p> <p><i>Sheet 1 of 2.</i> Design fills were revised from 3'-3" (1000 mm) to 2'-0" (610 mm).</p> <p><i>Sheet 2 of 2.</i> Detail Titles were revised.</p> <p><i>Sheets 1 through 13 of 13.</i> The Design Fill Height definition and related notes have been revised. The fill height is now the distance from the top of earth fill or roadway to the top of the top slab. This produced a revision to the Design Fill values in the chart.</p>
<p>901.00U</p>	<p><i>Sheets 1 and 2 of 2.</i> Clarification and relocation of several drawings, charts and labels. A few references to specifications of bolts, nuts and washers were</p>
<p>901.01AA</p>	<p>removed since the Missouri Standard Specifications for Highway Construction sufficiently addresses this subject. A diagram for Identification Tags added.</p> <p><i>Sheets 1 through 3 of 3.</i> Clarification and relocation of several drawings, charts and labels. A few references to specifications of bolts, nuts and washers were removed since the Missouri Standard Specifications for Highway Construction sufficiently addresses this subject. References to bolt circles and bolts simplified. A new diagram for Identification Tags added.</p>
<p>901.02B</p>	<p>Clarification and relocation of several drawings and labels. Addition of one General Note pertaining to cable-conduit.</p>
<p>901.30E</p>	<p><i>Sheets 1 and 2 of 2.</i> Clarification and relocation of several drawings, charts and labels. A General Note pertaining to electrical codes was removed since the Missouri Standard Specifications for Highway Construction sufficiently addresses this subject. Strip heaters are no longer required to be used in the control station and have been removed from the drawing. Side-mounted</p>

	photoelectric cells are now permitted in order to relieve the problem of dirty covers turning on lights. On Sheet 1 of 2, the drawings were revised to remove the thermostats from the cabinets.
901.80D	Clarification and relocation of several drawings. Two General Notes pertaining to electrical codes and meter box hardware were removed since the Missouri
901.85	Standard Specifications for Highway Construction sufficiently addresses this subject. New standard drawing for the Highway Lighting Symbols. The symbols were previously located in Chapter 8 of the Project Development Manual.
902.00K	<i>Sheet 1 of 2.</i> Clarification and relocation of several drawings and labels. A General Note pertaining to backplates was added. The sheet is retitled "Signal Head Mounting". <i>Sheet 2 of 2.</i> This new sheet was created for several existing diagrams originally on Sheet 1 of 1. The original "Vehicular Lenses" diagram was expanded into three diagrams for clarity.
902.10N	Notes pertaining to cabinet bases and burial tapes were deleted. Minor revisions in diagrams for clarity.
902.15J	<i>Sheets 1 and 2 of 2.</i> Clarification and relocation of several drawings.
902.20B	Thermostats and heater strips were removed from cabinets. A General Note pertaining to electrical codes was removed since the Missouri Standard Specifications for Highway Construction sufficiently addresses this subject. Other notes consolidated for clarity. <i>Sheet 1 of 3.</i> Clarification and relocation of several drawings and labels. The sheet is retitled "Concrete Pull Boxes". <i>Sheets 2 and 3 of 3.</i> These are new sheets. Double Concrete Pull Box, Type B, can be used in lieu of two preformed pull boxes to serve the different voltage
	requirements for signals and lighting. The Preformed Class 5 Pull Box is used for fiber installations such as for signal interconnect and ITS applications. Rebar requirements for concrete pads have also been added.
902.21C	Minor errata revisions.
902.30N	<i>Sheets 1 and 2 of 2.</i> Minor errata corrections.
902.40M	<i>Sheet 1 of 3.</i> Typical Bracket Arm Mounting diagrams deleted and replaced with a note to refer to Drawing 901.00. A General Note pertaining to posts and arms removed. A new diagram for Identification Tags was added. Some diagrams moved to the new Sheet 2 of 3.

	<i>Sheet 2 of 3.</i> This new sheet contains arm attachment diagrams and other
902.50J	diagrams formerly located on Sheet 1 of 2.
902.70K	<p><i>Sheet 3 of 3.</i> Formerly enumerated as Sheet 2 of 2. The sheet is retitled "Tubular Steel Posts Design Loading Requirements".</p> <p>One Typical Loop Corner diagram removed because the corners of sawed loop slots will now be drilled instead of sawed on 45-degree angles. Other minor revisions to a General Note and diagram. The sheet is retitled "Induction Loop Detectors".</p> <p><i>Sheet 1 of 2.</i> Span wire identification was revised so that the terminology will be uniform. The upper span wire is identified as the messenger wire. The lower span wire is the tether wire. Guy cables are now identified as guy wires. Also, a detail note "Cotter pin splayed after insertion" was added to help prevent traffic heads from falling. The sheet is retitled "Wood Pole Span Wire Details".</p> <p><i>Sheet 2 of 2.</i> Span wire identification revision as well as renumbering of listed</p>
902.80E	<p>items. The sheet is retitled "Rigid Span Wire Details".</p> <p><i>Sheet 1 of 2.</i> Numerous new traffic signal symbols and revisions. New symbols include those for a steel pole, steel pole with down guy, double pull box Type B with Type I and II drain, and pull box Class 5 with Type I and II drain. The Commission Furnished Sign symbols were removed.</p> <p><i>Sheet 2 of 2.</i> This new sheet contains the listing of Commission Furnished Sign symbols previously located on Sheet 1 of 1.</p>
903.01G	A Metric Standard Drawing, mislabeled 903.01G, was inadvertently included in the October 2001 English edition of the manual. The sheet included with this Standard Plans Letter (No. 1) is the corrected sheet.
903.03AV	<i>Sheet 1 of 6.</i> Revision of the Post and Footing Data Table to accommodate various slopes.
903.09D	Minor errata correction. English and metric measurements were corrected in the Elevation C diagram.
D-2BS	Additional blank lines for miscellaneous signs have been added. No hardcopy is included with these revisions. The file has been updated on the district servers.

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