# Design Standards Letter

Letter Number: P-2004-01

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Section/Plan No.: S203.02F, S203.10C, S203.21J, S203.40F, S203.41F, S203.50M, S203.61A, S203.62C, S203.64C, S413.20, S502.05F, S504.00F, S601.00, S604.21C, S604.23B, S605.10E, S606.00AQ, S606.22Q, S606.23G, S606.40D, S606.41H, S607.10U, S607.11F, S607.20F, S608.10L, S608.30, S609.00L, S609.40M, S610.20F, S611.60P, S612.10N, S612.20B, S613.00K, S613.20, S615.00A, S616.10AE, S617.00AE, S617.10C, S617.20A, S617.30 (now re-titled S617.20B), S619.10C, S620.00C, S620.10, S620.20, S626.00C, S702.02F, S703.10F, S703.11F, S703.12F, S703.13F, S703.14F, S703.40F, S703.41F, S703.42F, S703.43F, S703.44F, S703.80F, S703.81F, S703.82F, S703.83F, S703.84F, 706.35H, 712.40J, S725.00A, S725.31C, S726.30F, S730.00B, S731.10P, S732.00N, S732.05C, S732.10F, S806.02A, S806.10E, S808.00, S901.00V, S901.01AB, S902.00L, S902.10P, S902.15K, S902.20C, S902.40N, S902.50K, S902.70L, S902.80G, S903.01H, S903.02AG, S903.03AY, & S903.09D

Subject: July 2004 Edition of the Missouri Plans for Highway Construction

Body

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The hard copy edition of the Missouri Standard Plans for Highway Construction, July 2004 will be available in May. The updated plans will soon be available on MoDOT's website.

Questions concerning the distribution of this edition of the Missouri Standard Plans for Highway Construction should be directed to General Headquarters, Keith L. Smith (573) 751-4659 or Bruce Green (573) 751-9248.

A special sheet entitled "Street Name Signs for Traffic Signals" is available and will be added to Standard Plan 903.02 in the near future. Since D3 (street name) signs are no longer commission furnished, the variable-length x 9", 16" or 18" (225 mm, 400 mm or 450 mm) layouts will need to be included in the plans of all signal projects.

These revisions will be effective with the July 2004 bid opening. Below are the revisions to the Missouri Standard Plans for Highway Construction since October 1, 2003.

| NOTE | EXPLANATION |
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| 1 | The following revisions are effective with the July 2004 bid opening. |

| STD. | DESCRIPTION OF REVISION |
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| PLAN NO. | |
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| **203.02F** | *Sheet 1 of 2.* Minor clarification to show the undergrading limits. |
| **203.10C** | *Sheet 1 of 2.* The Clear Zone in Figure E was revised to reflect guidelines in the Roadside Design Guide. This standard drawing has been expanded to two sheets. |
| **203.21J**<br><br>**203.40F**<br><br>**203.41F** | *Sheet 3 of 5.* Minor errata correction.<br><br>Minor clarification.<br><br>Minor clarification. |
| **203.50M** | *Sheet 1 of 2.* This standard drawing has been expanded to two sheets. General Note added pertaining to Concrete Median Strip.<br><br>*Sheet 2 of 2* . Tie bars added to the "Low Profile Island Detail" diagram. Concrete Median relabeled as Concrete Median Strip in the diagram. Also, a |
| | minor clarification of the notes pertaining to the slopes adjacent to the median opening shoulders. |
| **203.61A** | Clarification of the cover height at the shoulder. The minimum cover is 12″ (300 mm) at the shoulder point. |
| **203.62C** | *Sheet 2 of 2.* Clarification of the cover height. The minimum cover is 12″ (300 mm). This standard drawing has been expanded to two sheets. |
| **203.64C** | *Sheet 2 of 2.* Clarification of the cover height. The minimum cover is 12″ (300 mm). This standard drawing has been expanded to two sheets. |
| **413.20** | This new drawing, "Scrub Seal Broom Configuration", was previously located in the General Provisions. |
| **502.05F** | *Sheets 1 through 3 of 4.* This standard drawing has been expanded to four sheets, instead of the two sheets the "E" version had. Numerous revisions were made to identify where the new L2 (Longitudinal Construction Joint for New Construction) and L1 (formerly "L" joint) may be installed. Ramp joint layouts have been revised.<br><br>*Sheet 3 of 4.* A new diagram for the "Longitudinal Construction Joint for New Construction" was added to Sheet 3 of 4. Two other diagrams, "Transverse Contraction Joint" and "Joint Filler Detail" were revised to reflect new PCCP transverse joint practices. The saw cut depth will now be increased to one-third the pavement thickness and the top of the joint filler material will now be ½″ (13 mm) below the pavement surface. |
| **504.00F** | *Sheet 1 of 3.* The diagrams on this new sheet were located on the former Sheet 1 of 2. Corrected the fifth General Note to refer to the "minimum sheet overlap" instead of the "maximum sheet overlap". Sheet subtitled "For Two-Lane Pavements". The sixth General Note was revised to state that Type A curbs are now included in the payment for concrete approach pavement and shall be constructed with the concrete approach pavement only when drain basins are required. The bridge's fill face is now to be vertical so the "fill face |

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| | of bridge end bent" label has been replaced with "end of slab". The hatched areas identified as the "partial panels". |
| | *Sheet 2 of 3* . The diagrams on these new sheets were moved from the former Sheet 1 of 2. Sheet subtitled "For Multi-Lane Pavements". The hatched areas identified as the "partial panels". |
| | *Sheet 3 of 3* . The diagrams on this new sheet were moved from the former Sheet 2 of 2. Sec A-A now shows the 4″ (100 mm) perforated drain. A new General Note was added to refer to Standard Plan 605.10. |
| **601.00** | This drawing, Special Field Laboratory, has been removed from the Standard Plans. The drawing is not deemed necessary since Sec 601 provides adequate information. |
| **604.21C** | *Sheet 2 of 3.* The diagrams on this new sheet were moved from the former Sheet 1 of 1. Minor errata correction pertaining to the U-bars. |
| | *Sheet 3 of 3.* The diagrams on this new sheet were moved from the former Sheet 1 of 1. |
| **604.23B** | The "D" dimension was corrected in the Section A-A diagram of the Basic Drop Inlet. |
| **605.10E** | *Sheet 1 of 2.* This sheet has been subtitled "Pipe Aggregate Pavement Edge Drains". All of the previous General Notes have been removed since they are either included in Sec 605 or have been excluded as a part of Performance Specs. Several drawings, including "Location in Sag Vertical Curves", "Location on Outside of Superelevated Curves" and "Location on Inside of Supereleveated Curves in Cut" have been removed because continuous 4″ (100 mm) perforated pipes will accommodate the flow instead of the 6″ (150 mm) pipes the drawings were based upon. The remaining drawings were moved to Sheet 2 of 2. Several drawings from Sheet 2 of 2 were moved to Sheet 1 of 2. Also, a new drawing, "Detail of Pipe Aggregate Edge Drain Outlets", was added as was a table from Chapter 6 of the Project Development Manual.<br><br>*Sheet 2 of 2* . This sheet has been subtitled "Cross Drains". Much of this sheet's contents was previously located on Sheet 1 of 2. |
| **606.00AQ** | *Sheet 3 of 16.* Contents previously contained on the former Sheet 3 of 13. One diagram, "Setting Post at Obstructions", was removed and two diagrams, |
| | "Setting Post Thru Concrete" and "Setting Post in Solid Rock" were revised to reflect recommendations from the Midwest Roadside Safety Facility. A new diagram, "Setting Post in Asphalt" was also added. Finally, a note was added to the "Type A and D Guardrail" allowing an 8″ x 4″ x 14″ (200 mm x 100 mm |
| | x 350 mm) wood block to be used. |
| | *Sheet 4 of 16.* Contents previously contained on the former Sheet 3 of 13. This has been subtitled "Types A, B & D". |
| | *Sheet 5 of 16.* The "Hole Punching Detail" diagram was moved from the former Sheet 3 of 13. A new diagram, "Alternate Design for Wood Block", was added. |
| | *Sheet 6 of 16.* Contents previously contained on the former Sheet 5 of 13. |

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| | Two new diagrams and accompanying notes pertaining to delineators were added. |
| | *Sheets 7 through 15 of 16.* Contents moved from former Sheets 5 through 13 of 13.<br><br>*Sheet 16 of 16.* This new sheet shows the proper way to construct guardrail when a culvert or some other obstacle is present and the designer chooses to "skip a post". The rail is nested, post spacing is affected and, on some of the posts, the number of wood blockouts is increased. |
| **606.22Q** | *Sheets 1 and 2 of 4.* Contents previously contained on the former Sheet 1 of 2.<br><br>*Sheets 3 and 4 of 4.* The Connector Plate's dimensions were slightly increased to accommodate a design that has been crash tested. |
| **606.23G** | *Sheets 1 through 5 of 5.* Contents previously contained on the former Sheets 1 and 2 of 2.<br><br>*Sheet 4 of 5.* Optional holes have been provided for the Transitional Cap Rail so that the rail can be installed on either side of the highway. |
| **606.40D** | *Sheets 1 and 2 of 2.* Standard Plan re-titled "One-Strand Access Restraint Cable". Contents previously contained on the former Sheet 1 of 1. |
| **606.41H** | *Sheet 2 of 6.* Contents previously located on the former Sheet 2 of 5. References to the FLEAT crashworthy end terminal were added to the "Guard Cable to Guardrail Transition at Median Obstacle" diagram. A new diagram with the title of "Profile of Transition at Median Obstacle with Bullnose or in a Median Narrower than 60′ (18 m)" was added to clarify guard cable transitions.<br><br>*Sheet 4 of 6.* Contents previously located on the former Sheet 4 of 5. A retro-reflective delineator has been added to the "Line Post & Welded Soil Plate" diagram. |
| | *Sheet 6 of 6.* This new sheet was added to clarify how guard cable is to be installed at a median opening. No particular type of median opening is specified by the drawings. |
| **607.10U** | A revision to a dimension in the "Barbed Wire Extension Bracket" diagram. Also, a minor errata correction. |
| **607.11F** | Minor clarification to second and fourth General Notes. |
| **607.20F** | Minor errata corrections. |
| **608.10L** | *Sheet 1 of 2.* A note added to the "Concrete Sidewalks Joints" diagram pertaining to the depth of joints.<br><br>*Sheet 2 of 2* . The first General Note was revised to refer to a maximum slope of 12:1. Some dimensions in the Section A-A diagram clarified. |
| **608.30**<br><br>**609.00L** | This new drawing is for Concrete Median Strip that is to be laid on pavement (as opposed to Concrete Median, that is poured onto a prepared subgrade).<br><br>The second General Note was clarified to indicate the barrier curb shown on |

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| | Standard Drawing 606.00. |
| **609.40M** | *Sheet 1 of 2* . The third General Note was revised to state that Type A curbs are now included in the payment for concrete approach pavement or as bridge approach slab on the bridge approach and shall be constructed with the concrete approach pavement only when drain basins are required. The last General Note, pertaining to Type A curb, was deleted. The Type A curb in the Section FF diagram was slightly shortened to show its length more properly. The bridge's fill face is now to be vertical so the "fill face of bridge" label has been replaced with "end of slab". Finally, a note pertaining to using concrete slope protection when rock blanket is placed under the bridge ends. |
| **610.20F** | This drawing, Brick Manholes, has been removed from the Standard Plans but is still available as a special sheet from General Headquarters-Design. |
| **611.60P** | The drawing now reflects the standard practice of constructing additional slope protection along the wing walls. Reference to "joint filler" revised to "preformed fiber expansion joint filler". Another revision is the use of 50 lb. roofing felt at the joint instead of ½″ felt. |
| **612.10N** | The Standard Drawing has been deleted because the barricades did not meet NCHRP 350 standards. A new diagram for permanent barricade is now included as Sheet 18 of 18 in Standard Drawing 903.02. |
| **612.20B** | A new diagram, "Type I Object Marker Placement", and its associated General Note were added. |
| **613.00K** | *Sheet 1 of 2* . The diagram for Partial Depth Pavement Repair has been deleted. An expanded series of partial depth pavement repair diagrams have been included in the new Standard Drawing 613.20. In the Section A-A diagram, |
| | instructions pertaining to joints and distances between new joints for Class A repair have been revised. In the Section B-B diagram, additional instruction pertaining to where joints for Class A repair may be constructed has been provided. In the notes, wire fabric reinforcing shall now be used in patches farther than 15′ (4.5 m) from transverse joints.<br><br>*Sheet 2 of 2.* In the Section C-C diagram, instructions pertaining to joints and distances between new joints for Class B repair have been revised. In the Section D-D diagram, L joints should now be used if the repair length is 10′ (3.0 m) or longer. In the notes, wire fabric reinforcing shall now be used in patches farther than 15′ (4.5 m) from transverse joints. |
| **613.20** | This new drawing portrays Class A partial depth repair for spalled areas and reflects MoDOT's intention to expand the use of partial depth repairs. |
| **615.00A** | This drawing, Office for Engineer, has been removed from the Standard Plans but is still available as a special sheet from General Headquarters-Design. |
| **616.10AE** | This Standard Drawing has been re-titled "Temporary Traffic Control Devices".<br><br>*Sheet 2 of 8.* Contents were located on the former Sheet 2 of 5. Several notes |

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| | specifying fabrication materials and the like were included in the specs. New notes pertaining to the Direction Indicator Barricade's portable support and sheeting orientation were added. The note stating that Trim-line channelizers may be used in lieu of drum-like channelizers was deleted so as to limit options in the field. |
| | *Sheet 3 of 8* . Contents were located on the former Sheets 2 and 3 of 5. Several notes specifying fabrication materials and the like were included in the specs. |
| | *Sheet 4 of 8.* Contents were located on the former Sheet 3 of 5. Several notes specifying fabrication materials and the like were included in the specs. Two new diagrams entitled "Changeable Message Sign" were added. |
| | *Sheet 5 of 8.* Contents were located on the former Sheet 4 of 5. |
| | *Sheets 6 through 8 of 8* . Contents were located on the former Sheet 5 of 5. A note pertaining to sign layouts in Standard Drawing 903.02 was removed since |
| | all of the signs referenced by the note are no longer included in Standard Drawing 903.02. (The Standard Drawing 903.02 signs were deleted since they were standard MUTCD signs.) |
| **617.00AE** | This Standard Drawing has been incorporated into Standard Drawing 617.10. Thus, the Standard Drawing 617.00 has been deleted. |
| **617.10C** | *Sheets 1 through 7 of 7.* This Standard Drawing has been re-titled "Permanent Concrete Traffic Barrier" and now includes the contents of the former Standard Drawings 617.00AE, 617.10B and 617.20A. |
| | *Sheets 1 and 2 of 7.* The contents of these sheets were formerly located on Standard Drawing 617.00, Type A and B Concrete Traffic Barrier. The "Double Delineator" diagram was updated and re-titled "Delineator". Except for a note pertaining to expansive joints, all of the General Notes have been deleted and replaced with a few new notes. The new notes pertain to height transitions, chamfers and joints. It is important to note that height transitions shall not be used where the posted speed is greater than 35 mph (55 km/h). |
| | *Sheet 3 of 7.* The content of this sheet was formerly located on Standard Drawing 617.00, Type B (Modified) Concrete Traffic Barrier. The "Type B (MSE Wall) Traffic Barrier on Top of MSE Wall" diagram was revised. Several new rebar diagrams were added as well as a new table, "End Hook Dimensions". The "Table of Transverse Pavement Reinforcement" was revised. Type B (Modified) shall be used only at locations shown in plans. |
| | *Sheets 4 and 5 of 7.* The contents of these sheets were formerly located on Standard Drawing 617.10, Sheets 1 and 2 of 2, Type C Concrete Traffic Barrier. Most of the General Notes were incorporated into the specs. On Sheet 5 of 7, the number of cross-section diagrams were increased and re-labeled. |
| | *Sheet 6 of 7.* The content of this sheet was formerly located on Standard Drawing 617.20, Type D Concrete Traffic Barrier. Most of the General Notes were incorporated into the specs. |
| | *Sheet 7 of 7.* The content of this sheet was formerly located on Standard Drawing 617.20, Type D (Modified) Concrete Traffic Barrier. The "Type D (MSE Wall) Traffic Barrier on Top of MSE Wall" diagram was revised. |

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| | Several new rebar diagrams were added as well as a new table, “End Hook |
| | Dimensions”. The “Table of Transverse Pavement Reinforcement” was revised. Type B (Modified) shall be used only at locations shown in plans. |
| **617.20A** | This Standard Drawing has been incorporated into Standard Drawing 617.10 and has been re-titled “Temporary Concrete Traffic Barrier”. |
| **617.30, now re-titled 617.20B** | The number of this Standard Drawing has been changed from 617.30 to 617.20 in order to coordinate with its specification number. Therefore, the former Standard Drawing 617.30 is now the 617.20B, entitled “Temporary Concrete Traffic Barrier”. |
| | *Sheet 1 of 6.* Contents were located on the former Sheet 1 of 4 of 617.30. The Temporary Barrier Tie-Down Strap, used to limit the deflection of the Type F in applications with bridges, is now an alternative design. New diagrams for bridge anchoring and barrier loops have been added. Other changes in the design include wider lifting slots and radius edging. Two General Notes referring to current specifications and use of crashworthy end terminals in the clear zone were deleted. Six new General Notes pertaining to reinforcing steel clearance, barring of moving the Type F barriers by the loop bars, Type F dimensions, anchoring on the side facing traffic, location of bridge anchors and delineator details were added. |
| | *Sheet 2 of 6.* Contents were located on the former Sheet 2 of 4 of 617.30. The A and B bars have new dimensions. A new B3 bar has been added, as has the E bar. A new General Note referring to bar dimensions was added. |
| | *Sheet 3 of 6.* Contents were located on the former Sheet 4 of 4 of 617.30. The dimensions of the Type F Height Transition have been revised. The Straight Ferrule diagram was deleted and Traffic Barrier Delineator diagrams added. Two General Notes referring to relocation of barriers and disposal of damaged barrier were deleted. Three new General Notes pertaining to reinforcing steel clearance, limiting the use of Type F barrier, and barring of moving the Type F barriers by the loop bars were added. It is important to note that height |
| | transitions shall not be used where the posted speed is greater than 35 mph (55 km/h). |
| | *Sheet 4 of 6.* This new sheet contains diagrams of the A and J bars of the Type F height transition.<br><br>*Sheet 5 of 6.* This new sheet contains diagrams of the tie-down strap. |
| | *Sheet 6 of 6.* This new sheet contains diagrams showing how to properly anchor Type F barriers when transitioning from freestanding barriers to barriers that have been anchored. |
| **619.10C** | *Sheet 1 of 3.* The table was located on the former Sheet 1 of 1. The Partial Lane Closure cross section is now incorporated into the Adjacent Lane Closed illustrations. The one General Note (from 619.10B) was revised so that when an “Uneven Lanes” sign is installed at a side road, another “Uneven Lanes” sign located within a mile from the side road may be omitted. One new General Note refers to Standard Plan 616.10. Other notes pertaining to signing and edge drop off are now General Notes. |

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| | *Sheets 2 and 3 of 3.* Contents were located on the former Sheet 1 of 1. |
| **620.00C** | *Sheet 1 of 3.* One General Note pertaining to the dimensions and spacing of pavement markings was added. Some clarifications of the General Notes and other notes. Two new drawings, "Typical Striping Offsets", were added.<br><br>*Sheets 2 and 3 of 3.* Contents were located on the former Sheets 1 and 2 of 2. |
| | *Sheet 3 of 3.* This new sheet contains the "Railroad Grade Crossing" drawing from the former Sheet 2 of 2. |
| **620.10** | This new drawing for Temporary Pavement Marking contains information formerly included in the PDM (Figures 8-04.19 and 8-04.20) and a new edge line pattern. |
| **620.20** | *Sheet 4 of 4* . Minor errata correction. |
| **626.00C** | The minimum width for shoulders to have shoulder rumble strips is now 2′ (0.6 m). Therefore, the "Roadway Plan" diagrams have been simplified. Instead of two diagrams, one for a two-way road and one for a freeway or expressway, there is now only one. |
| **702.02F** | The second General Note was revised to note that additional thickness may be required for the thin-shelled type of concrete piles. The second and third General Notes were deleted. |
| **703.10F** | *Sheet 1 and 2 of 3.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler".<br><br>*Sheet 3 of 3.* The label to refer to the special provisions about granular backfill was removed. Another reference to granular backfill was revised so that the drawing is in accordance with Sec 206. The design specifications were updated to refer to 2002 AASHTO factors. |
| **703.11F** | *Sheet 1 and 2 of 3.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| | *Sheet 3 of 3.* The label to refer to the special provisions about granular backfill was removed. Another reference to granular backfill was revised so that the drawing is in accordance with Sec 206. The design specifications were updated to refer 2002 AASHTO factors. |
| **703.12F** | Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.13F** | *Sheet 1 and 2 of 3.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler".<br><br>*Sheet 3 of 3.* The label to refer to the special provisions about granular backfill was removed. Another reference to granular backfill was revised so that the drawing is in accordance with Sec 206. The design specifications were updated to refer 2002 AASHTO factors. |
| **703.14F** | *Sheet 1 and 2 of 3.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler".<br><br>*Sheet 3 of 3.* The label to refer to the special provisions about granular backfill |

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| | was removed. Another reference to granular backfill was revised so that the drawing is in accordance with Sec 206. The design specifications were updated to refer 2002 AASHTO factors. |
| **703.40F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.41F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.42F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.43F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.44F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.80F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.81F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.82F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.83F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **703.84F** | *Sheets 1 and 2 of 2.* Several minor clarifications including the replacement of "preformed fiber expansion joint material" with "joint filler". |
| **706.35H** | Four new General Notes added pertaining to epoxy coating, specifying types of feet for wire bar supports and for bar supports to comply with the C.R.S.I. Manual of Standard Practice. Plastic bar supports shall be spaced as and meet or exceed the load capacity of steel wire bar supports. Two General Notes pertaining to epoxy coating were removed. Minor updates to several diagrams. The cross-section of the Continuous High Chair was revised. |
| **712.40J** | Minor clarification to the first, fourth and fifth General Notes. |
| **725.00A** | *Sheet 1 of 3.* A new note pertaining to trench installations was added.<br><br>*Sheet 2 of 3.* Allowable fill heights for existing pipes have been revised to comply with the current AASHTO method for calculating fill heights. Table I |
| | has been expanded into Tables I and II. Table II pertains to the method of seam fabrication. Table I has been revised to include two additional types of steel circular pipe, 5″ x 1″ corrugation and ¾″ x ¾″ x 7 ½″ spiral rib. The previous Table II, "Corrugated Aluminum Allow Circular Pipe" was re-labeled Table III. |
| | *Sheet 3 of 3.* This new sheet contains Table IV, previously labeled as Table III, from the previous Sheet 2 of 2. The new Tables V and VI (Pipe-Arch Requirements) were moved from Sec 1020 where they were Tables IX and X, respectively. |
| **725.31C** | Minor clarification. |
| **726.30F** | *Sheet 1 of 2* . The first General Note, pertaining to coverage of pipes during |

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| | construction, was deleted. |
| **730.00B** | *Sheet 1 of 2.* This Standard Plan was re-titled "Corrugated Polyethylene and Polyvinyl Chloride Pipe Installation Methods". Installation methods for PVC pipe have been added. Information for polyethylene pipes of 54″ (1350 mm) and 60″ (1500 mm) diameters has been added to Table I. Several dimensions are now designated as having a maximum or minimum so as to bring the drawing into accordance with the updated Spec 730. |
| **731.10P** | *Sheet 2 of 4* . Minor errata correction pertaining to U-bars in the Type A, B and C half-section diagrams. |
| **732.00N** | *Sheet 2 of 2* . The option to include a galvanized top finish plate for a pipe end section was removed. Also, additional end section types were included in the "End Sections for Arch Pipe" table. |
| **732.05C** | *Sheet 2 of 2.* Minor clarification. |
| **732.10F** | *Sheet 1 of 2* . Safety bars are now optional for pipes with diameters of 21″ (525 mm) or less, instead of 24″ (600 mm). Other minor clarifications. |
| **806.02A** | This drawing, Staple Placement for Plastic Netting, has been removed from the Standard Plans since MoDOT no longer uses plastic netting for erosion control. |
| **806.10E** | *Sheet 1 of 7* . A note pertaining to ditch checks was added. |
| | *Sheet 2 of 7* . The "Silt Fence Ditch Check" diagram was revised to show a 6" (150 mm) rise. Also, references to engineering fabric were revised to "filter fabric". |
| | *Sheet 3 of 7.* Two new diagrams, "Drop Inlet Check" and "Minimum Ditch Check Spacing" were added. The "All Types Ditch Check Spacing" table was expanded and re-titled "Example Ditch Check Spacing for Standard Heights". |
| | *Sheet 4 of 7* . Section D-D was added to clarify the construction of the sediment basin. |
| | *Sheet 6 of 7* . Additional details for proper placement of silt fence were added. The third General Note about support fence was deleted and a new General Note was added pertaining to use of silt fences for fill heights of 10′ (3 m) or greater. Two new General Notes pertaining to the use of ditch checks across drainage ditches and silt fence wing spacing. |
| **808.00** | This new standard drawing is entitled "Typical Planting Illustrations" and provides instructions on how to support, measure, prune and plant trees and shrubs. |
| **901.00V** | *Sheet 1 of 4.* The contents of this sheet were located on the former Sheet 1 of 2. A new General Note was added instructing design of structural supports shall comply with AASHTO standards.<br><br>*Sheet 2 of 4.* The contents of this sheet were located on the former Sheet 1 of 2. |
| | *Sheets 3 and 4* . The steel pile and screw anchor foundations have been revised to comply with updated AASHTO standards. The screw anchor foundation includes a second slotted hole to permit a simpler installation of the cable-conduit. The slotted holes' size was increased to 3″ x 12″ (75 mm x 305 |

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| | mm). |
| **901.01AB** | *Sheet 1 of 6.* The contents of this sheet were located on the former Sheet 1 of 3. A new General Note was added instructing design of structural supports shall comply with AASHTO standards. |
| | *Sheets 4, 5 and 6* . The foundation designs, formerly located on Sheets 2 and 3 of 3, have been revised to comply with updated AASHTO standards. The screw anchor foundation includes a second slotted hole to permit a simpler installation of the cable-conduit. The slotted holes' size was increased to 3″ x 12″ (75 mm x 305 mm). |
| **902.00L** | *Sheet 1 of 2* . The General Note pertaining to the height of the pedestrian symbol was deleted. Also, the distance from the top of the pedestal base to the top of the pedestal post was identified as 15′ (4.5 m).<br><br>*Sheet 2 of 2* . The height of the pedestrian symbols was slightly revised. |
| **902.10P** | Types E-170 and D-170 controllers were relabeled Type 332 and 336S, respectively. Additional holes were added to the plan views of all the controllers. |
| **902.15K** | *Sheet 2 of 2.* Additional information provided for item No. 14, a lexan window. Also additional information provided for the main breaker. |
| **902.20C** | *Sheet 1 of 3.* Two General Notes, one requiring all concrete to be a minimum of 3000 psi (21 MPa) and the other requiring lift openings, were deleted.<br><br>*Sheet 2 of 3.* The General Note allowing the preformed box walls to be flared or vertical was deleted. |
| | *Sheet 3 of 3.* The dimensions of the circular pull box, class 5, were revised to accommodate other designs. A General Note pertaining to the number of hooks was added. A note about the pull box's depth was deemed no longer relevant and was removed as was the General Note requiring pull box frames and covers to be of polymer concrete. |
| **902.40N** | *Sheet 1 of 3* . Minor errata correction.<br><br>*Sheet 3 of 3.* Some traffic sign dimensions have been increased because the MUTCD now requires larger letter sizes. |
| **902.50K** | Three General Notes pertaining to cutting loops by power concrete saws, filling slots with loop sealants and sawing newly constructed Portland cement concrete were deleted. |
| **902.70L** | *Sheet 1 of 2.* Minor correction.<br><br>*Sheet 2 of 2.* A new General Note pertaining to span lengths was added. |
| **902.80G** | *Sheet 1 of 1.* A symbol for Video Detection Zone added. |
| | *Former Sheet 2 of 2* . This sheet has been deleted since contractors will now furnish these signs. |
| **903.01H** | Information for an arrow used with 6" (150 mm) upper case lettering was added |

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| | to the Type D Arrow Table. Other minor clarifications. |
| **903.02AG** | A special sheet entitled "Street Name Signs for Traffic Signals" is available and will be added to Standard Plan 903.02 in the near future. Since D3 (street name) signs are no longer commission furnished, the variable-length x 9", 16" or 18" (225 mm, 400 mm or 450 mm) layouts will need to be included in the plans of all signal projects.<br><br>*Sheets 1 and 2 of 18* . Contents of these sheets were located on the former Sheets 1 and 2 of 23. A note pertaining to exit number panels was added to Sheet 2 of 18. Other minor clarifications. |
| | *Sheet 3 of 18.* Another "River/Creek" diagram has been added. Minor clarifications have also been made. |
| | *Sheet 4 of 18.* Contents of this sheet were located on the former Sheet 4 of 23. Minor clarifications.<br><br>*Sheets 5 and 6 of 18* . Contents of these sheets were located on the former Sheet 5 of 23. Minor clarifications including the addition of a "Border (All Signs)" table on each sheet. |
| | *Sheet 7 of 18.* Contents of this sheet were located on the former Sheet 6 of 23. The "Rest Area" and D9-2B signs were deleted since they are standard MUTCD signs. The D9-2 sign, which displayed a large "H" symbolizing a hospital, has been revised with a larger "Hospital" sign. |
| | *Sheet 8 of 18.* Contents of this sheet were located on the former Sheet 8 of 23. The Exit Number Panels have been revised to a height of 3′ (915 mm) instead of 2′ (610 mm). The diagram "All 1 to 3 Digit Numerals" was deleted. Since the exit number signs will be structural, a General Note about structural sign size requirements and another pertaining to the thickness of flat sheets were deleted. A note pertaining to panels being mounted directly to the top of guide signs was moved into the General Notes. |
| | *Sheet 9 of 18.* This new sheet, entitled "Gore Exit Signs", illustrates the structural signs. |
| | *Sheet 10 of 18.* The Gore Exit diagram was deleted since it is a standard MUTCD sign. The information from the 6″ (150 mm) Arrow Detail diagram was moved into the Type D Arrow Table on Standard Drawing 903.01. The |
| | sheet was re-titled "Cross Road and Outer Road Signs". Two new diagrams of mast arm streetname signs and a General Note pertaining to mast arm streetname signs were added. |
| | *Sheet 11 of 18* . The new, larger regulatory sign, R2-4a, replaces the old R2-4 sign that was moved from the former Sheet 12 of 23. The Keep Right sign was moved from the former Sheet 12 of 23. The sheet has been re-titled "Regulatory Signs". |
| | *Sheet 12 of 18.* Contents of this sheet were located on the former Sheet 17 of 23. Almost all of the signs on the former Sheets 10 through 16 and 18 of 23 were deleted since they are standard MUTCD signs. |
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| | *Sheet 13 of 18.* The contents of this sheet were located on the former Sheets 19 and 20 of 23. The U.S. Route Shield signs on the former Sheet 19 of 23 was deleted since it is a standard MUTCD sign.<br><br>*Sheet 14 of 18.* The contents of this sheet were located on the former Sheet 21 of 23. The "By-pass" sign was replaced with "Business" and the one-route pipe post assembly diagrams were removed. The 30″ x 15″ (600 mm x 300 mm) cardinal direction (ex. north or south) signs are no longer used and were also removed. |
| | *Sheet 15 of 18.* The contents of this sheet, re-titled "Backing Bar Details", were located on the former Sheet 22 of 23. Three General Notes pertaining to minimum clearances, pipe posts and the adjustment of posts were deleted. Another General Note was moved so that it is a footnote to some backing bar diagrams. A new diagram, "The Three Backing Bar Layouts for Single Post Signs" was added. |
| | *Sheets 16 and 17 of 18.* The contents of these sheets were located on the former Sheets 22 and 23 of 23. A hole-punching diagram for a new regulatory 4′x 8′ (2400 mm x 1200 mm) sign has been included. The new diagram and table pertain to radii for sheet signs. Two new General Notes pertaining to signs with |
| | four or more holes and sign thickness were added to Sheet 16 of 18. The General Note about hole size on Sheet 17 of 18 was deleted. |
| | *Sheet 18 of 18* . The Standard Drawing 612.10, entitled "Barricades", has been deleted because the barricades did not meet NCHRP 350 standards. This new diagram for permanent barricade, with accompanying W1 sign diagrams and |
| | several new General Notes was deemed to be more properly included with Standard Drawing 903.02. |
| **903.03AY** | *Sheet 1 of 8.* Contents of these sheets were located on the former Sheet 1 of 7. The "Footing" and "Foundation Detail" diagrams were re-titled "Footing Detail" and "Stub Detail" respectively. The note in the "Elevation" diagram pertaining to the top of the footing was clarified.<br><br>*Sheet 2 of 8* . Contents of this sheet were located on the former Sheet 1 of 7. A note pertaining to the centerline post was revised in the "Hinge Plate Detail" diagram so that signs having larger post designs can be properly attached to the post. |
| | *Sheet 3 of 8.* Contents were located on the former Sheet 2 of 7. Because of its applicability to permanent signs, the "Post Size Requirements" table has been moved from Standard Drawing 616.10 to this sheet. A General Note referring to Standard Drawing 616.10 for options for non-pipe post mountings was removed. |
| | *Sheet 4 of 8.* A General Note referring to Standard Drawing 616.10 for options for non-pipe post mountings was removed since the options are now included on a table on Sheet 1 of 8. The "Footing in Rock" detail was re-titled "Footing Detail" and was revised to illustrate a sloped situation.<br><br>*Sheet 5 of 8* . Contents of this sheet were located on the former Sheet 4 of 7. |

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| | *Sheet 6 of 8.* The Side Trim Molding diagrams were removed. Details pertaining to molding, panel bolts and post clips have been revised in the "Panel Bolt Location" diagram (formerly entitled Sign Panel Assemblies). |
| | *Sheet 7 of 8.* The Sign Details diagram was removed since MoDOT no longer uses the red reflectors shown in the diagram. Other minor errata corrections. The contents of this sheet were located on the former Sheet 6 of 7. |
| | *Sheet 8 of 8.* The post clip locations have been revised in the diagram re-titled "Typical Post Clip Mounting Details for Round Pipe Posts". The diagram was formerly entitled "Mounting to Round Pipe Posts for Ground Mounted Signs". |
| | The channel post on the "Mounting Details for Extruded Panels on Wood 4″ (100 mm) x 6″ (150 mm) Post" has been increased to 3.0 lb./ft. (4.4 kg/m). The contents of this sheet were located on the former Sheet 7 of 7. |
| **903.09D** | This standard drawing has been deleted since sign lighting is no longer typically utilized. It is now available as a special sheet. |