



# MEMORANDUM

**TO:** District Engineers

**DATE:** June 30, 2004

**FROM:** Mary Lou Ralls, P.E.

**SUBJECT:** New Miscellaneous Bridge Standard Drawings (English)

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New miscellaneous bridge standard drawings with an issue date of June 2004 are posted on the TxDOT web site and are available for immediate use. This issue of standard drawings accommodates the 2004 *Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* (2004 Texas Standard Specifications) and is an incremental step toward full implementation of the American Association of State Highway and Transportation Officials (AASHTO) *AASHTO LRFD Bridge Design Specifications* (AASHTO LRFD Specifications), primarily in the area of prestressed concrete I-beam bridge construction.

Bridge standard drawings that apply only to construction projects under the 1993 Texas Standard Specifications (BPA-1, BPA-2, PMDF(C), PMDF(S), PMDF(U), USMB-1, and USMB-2) will no longer be available after January 2005. This is in accordance with the memorandum from Amadeo Saenz, Jr., P.E., dated March 17, 2004, requiring use of the 2004 Texas Standard Specifications for all construction projects let after January 2005.

Bridge standard drawings based on the AASHTO LRFD Specifications and HL93 live load can be used for bridge designs based on the *AASHTO Standard Specifications for Highway Bridges* (AASHTO Standard Specifications) and HS20 or HS25 loading. For some structural elements, standard drawings based on HS20 live load are no longer available and HL93 live-load-based standard drawings must be used.

Miscellaneous standard drawings based on the AASHTO Standard Specifications and HS20 live load will either no longer be available after January 2005 or will be updated to comply with the AASHTO LRFD Specifications prior to February 2005. An exception is standard template drawing IBNS, which will be provided until full implementation of the AASHTO LRFD Specifications.

To delineate standard drawings based on specific AASHTO specifications, these miscellaneous bridge standard drawings are categorized as Common to AASHTO Standard and LRFD Specifications, AASHTO Standard Specifications, and AASHTO LRFD Specifications.

## Summary of New Features:

### Common to AASHTO Standard and LRFD Specifications

- **AJ**, Armor Joint – This standard drawing is updated to show sealed armor joints with a silicone seal instead of preformed neoprene joint seals. Shop drawings for approval are no longer required when fabrication adheres to the standard details.
- **BAS-A**, Bridge Approach Slab for Asphaltic Concrete Pavements – This standard drawing is new and replaces the Design Division's BAS-94 standard drawing when the approach roadway uses asphaltic concrete pavement. This standard drawing applies for construction projects based on the 2004 Texas Standard Specifications (approach slab is paid for under Item 420). Research recommendations from Texas Department of Transportation (TxDOT) research project 0-4147 are implemented in the approach slab details.
- **BAS-C**, Bridge Approach Slab for Concrete Pavements – This standard drawing is new and replaces the Design Division's BAS-94 standard drawing when the approach roadway uses concrete pavement. This standard drawing applies for construction projects based on the 2004 Texas Standard Specifications (approach slab is paid for under Item 420). Research recommendations from TxDOT research project 0-4147 are implemented in the approach slab details.
- **BL**, Bridge Lighting Details – This standard drawing is updated with an additional note outlining reinforcement modifications necessary for long deck slab overhangs.
- **BMCS**, Bridge Mounted Clearance Sign Assembly – This new standard drawing provides details for mounting clearance signs on bridges. It accommodates all standard bridge superstructure types using concrete barrier rails. It applies for construction projects based on the 2004 Texas Standard Specifications (clearance sign is paid for under Item 636 and sign supports are paid for under Item 442).
- **BPA**, Bridge Protective Assembly - This new standard drawing applies for construction projects based on the 2004 Texas Standard Specifications (bridge protective assembly is paid for under Item 442). No clearance sign is associated with this standard. If a clearance sign is needed, use standard drawing BMCS.
- **BPA-1**, Bridge Protective Assembly – This standard drawing is updated with a new issue date and will no longer be available after January 2005. Standard BPA and/or BMCS replaces this standard drawing for construction projects under the 2004 Texas Standard Specifications.
- **BPA-2**, Bridge Protective Assembly - This standard drawing is updated with a new issue date and will no longer be available after January 2005. Standard

drawing BMCS replaces this standard drawing for construction projects under the 2004 Texas Standard Specifications.

- **CP-N**, Prestressed Concrete Piling (Normal Exposure) – This standard drawing is updated to no longer include 14-inch piling. Voids in piles are eliminated. Shop drawings for approval are no longer required when fabrication adheres to the standard details.
- **CP-S**, Prestressed Concrete Piling (Severe Exposure) - This standard drawing is updated to no longer include 14-inch piling. Voids in piles are eliminated. Shop drawings for approval are no longer required when fabrication adheres to the standard details.
- **CRR**, Concrete Riprap and Shoulder Drains – This standard drawing is updated with additional notes outlining the dependency of shoulder drain location on type of rail transition used.
- **FD**, Common Foundation Details – This standard drawing is updated to comply with the AASHTO LRFD Specifications. 42-inch and 48-inch drilled shaft sections are added. A detail accommodating drilled shafts larger than column sections is added. A detail accommodating drilled shafts extending up to bent caps (to replace short columns) is also added.
- **MEBR(C)**, Minimum Erection and Bracing Requirements for Prestressed I-Beams – This standard drawing is new and replaces standards MEBR(C)-1 and MEBR(C)-2. Only the beam types shown on standard drawing IBD are supported.
- **MEBR(S)**, Minimum Erection and Bracing Requirements for Steel Girders – This standard drawing is updated with a new issue date.
- **ODSR**, Optional Drilled Shaft Reinforcing – This standard drawing is updated to clarify applicability of its details and options for transverse reinforcement.
- **PCSP**, Prestressed Concrete Sheet Piling – This standard drawing is updated with a new issue date and editorial changes.
- **PMDF**, Permanent Metal Deck Forms – This standard drawing is new and applies for construction projects based on the 2004 Texas Standard Specifications. This standard drawing replaces standards PMDF(C), PMDF(S), and PMDF(U).
- **PMDF(C)**, Permanent Metal Deck Forms (Concrete) - This standard drawing is updated with a new issue date and will no longer be available after January 2005. Standard drawing PMDF replaces this standard drawing for construction projects based on the 2004 Texas Standard Specifications.

- **PMDF(S)**, Permanent Metal Deck Forms (Steel) - This standard drawing is updated with a new issue date and will no longer be available after January 2005. Standard drawing PMDF replaces this standard drawing for construction projects based on the 2004 Texas Standard Specifications.
- **SEJ-A**, Sealed Expansion Joint Type A – This standard drawing is updated to accommodate 5-inch joints, to reflect changes in manufacturer's products, and to broaden the scope of details. Shop drawings for approval are no longer required when fabrication adheres to the standard details.
- **SEJ-P**, Sealed Expansion Joint Type P – This standard drawing is updated to broaden the scope of details. Shop drawings for approval are no longer required when fabrication adheres to the standard details.
- **SEJ-S(O)**, Sealed Expansion Joint Type S – This standard drawing is updated to broaden the scope of details. Shop drawings for approval are no longer required when fabrication adheres to the standard details.

#### AASHTO Standard Specifications

- **IBA**, Prestressed Concrete I-Beam Details – This standard drawing is updated to reflect full length Bars P for Type IV beams shorter than 50 feet. This standard drawing will no longer be available after January 2005. Standard drawing IBD can be used in lieu of this standard drawing.
- **IBB**, Elastomeric Bearing and Beam End Details – This standard drawing is updated with a new issue date and will no longer be available after January 2005. Standard drawing IBEB can be used in lieu of this standard drawing. See description of IBEB for considerations to make when not using standard drawing IBB.
- **IBNS**, Prestressed Concrete I-Beams (Non-Standard Spans) – This standard template drawing is updated with a new issue date. This drawing will no longer be available after full implementation of the AASHTO LRFD Specifications. New standard template drawing IBND cannot be substituted for this drawing.
- **PCP(C)**, Prestressed Concrete Panels (Concrete I-Beam Spans) – This standard drawing is updated with a new issue date and will no longer be available after January 2005. Standard drawing PCP can be used in lieu of this standard drawing.
- **PCP(S)**, Prestressed Concrete Panels (Plate Girder Spans) – This standard drawing is updated with a new issue date and will no longer be available after January 2005. Standard drawing PCP can be used in lieu of this standard drawing.

- **SBD**, Steel Beam Details – This standard drawing is updated with a new issue date.
- **SBMS**, Miscellaneous Slab Details for Steel Girders – This standard drawing is updated with a new issue date and with drain detail modifications.
- **SEB**, Elastomeric Bearing Details for Steel Girders – This standard drawing is updated with a new issue date.
- **SPGD**, Plate Girder Details – This standard drawing is updated with a new issue date.

### AASHTO LRFD Specifications

- **IBD**, Prestressed Concrete I-Beam Details – This standard drawing is new and will replace standard drawing IBA after January 2005. Immediate use of this standard drawing for HS20 or HS25 designs is encouraged. Details for Types A, B, C, IV, and VI beams are provided. Type 54 and Type 72 beams are not supported by this standard drawing.
- **IBEB**, Elastomeric Bearing and Beam End Details – This new standard drawing provides bearing details for all beams shown on standard drawing IBD, and will replace standard drawing IBB after January 2005. Immediate use of this standard drawing for HS20 or HS25 designs is encouraged. Bearing thickness is 2.75-inches (bearing thickness on standard drawing IBB is 2.5-inches) which must be taken into consideration in preparing abutment and other structural details and in determining bearing seat elevations.
- **IBMS**, Miscellaneous Slab Details for Prestressed I-Beams – This standard drawing is updated to comply with the AASHTO LRFD Specifications. It also applies for all AASHTO Standard Specifications-based designs. Details for haunch reinforcement, reinforcement over inverted-T bents, and Type A expansion joints are added. Additionally, drain details are modified.
- **IBND**, Prestressed Concrete I-Beam Designs (Non-Standard Spans) – This standard template drawing is new and is for providing prestressed concrete beam design information based on the AASHTO LRFD Specifications. This drawing must be signed, sealed, and dated for each use.
- **IBTS**, Thickened Slab End Details for Prestressed I-Beams – This standard drawing is updated to comply with the AASHTO LRFD Specifications. It also applies for all AASHTO Standard Specifications-based designs.
- **PCP**, Prestressed Concrete Panels – This new standard drawing provides details complying with the AASHTO LRFD Specifications and replaces standard

drawings PCP(C), PCP(S), and PCP(U). This standard drawing also applies for all AASHTO Standard Specification-based designs. Shop drawings for approval are not required when fabrication adheres to the standard details.

- **SBTS**, Thickened Slab End Details for Steel Girders – This standard drawing is new and is similar to standard drawing IBTS but is for steel girder or beam construction. This standard drawing does not apply unless a 2-inch haunch is present at expansion joint locations. End diaphragms on standard drawings SBD and SPGD should not be used with the details shown on this standard drawing. Interior diaphragms must be used at end bearings when standard SBTS is used.

Standard drawings USMB-1 and USMB-2 will remain available until January 2005. After this date, standard drawing BMCS is to be used for clearance sign mounts on U-beam bridges.

Standard drawings MEBR(C)-1, MEBR(C)-2, and IBDO have been removed from the TxDOT web site but are still available as working drawings upon request.

These miscellaneous bridge standard drawings and other standard drawings are available from the Bridge Standards (English) web pages in MicroStation® “dgn” and Adobe® Acrobat® “pdf” formats. Please distribute this information to the appropriate district staff and area offices as well as consulting engineers working on TxDOT projects.

If you have questions or comments concerning these standard drawings, please contact John M. Holt, P.E., at (512) 416-2212, or Jon T. Ries at (512) 416-2191.

Note: Original signed by Mary Lou Ralls

cc: Federal Highway Administration  
Bridge Design Consultants  
Administration  
Division and Office Directors  
Directors of Transportation Planning and Development  
District Bridge Engineers  
Bridge Division Employees



# MEMORANDUM

**TO:** District Engineers **DATE:** March 17, 2004  
**FROM:** Amadeo Saenz, Jr., P.E. *AS*  
**SUBJECT:** 2004 Specifications and General Notes (Construction and Maintenance)

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## **Construction Projects**

The first allowable letting month for the use of the 2004 Standard Specifications is November 2004 for construction projects. The last letting month for the use of the 1993 Standard Specifications is January 2005 unless prior approval is obtained from the Director of the Design Division.

## **Routine Maintenance Projects**

Routine maintenance projects with a letting month of September 2004 and after will require the use of the 2004 Standard Specifications. The use of the 2004 Standard Specifications will not be allowed prior to that time.

## **PS&E Task and Implementation Assistance**

To meet these letting dates, there are several tasks that are the responsibility of the districts, three of which are:

1. Develop general notes for the 2004 Standard Specifications.
2. Revise previously developed PS&E for lettings using the 2004 Standard Specifications.
3. Develop one time use and district-wide special provisions and specifications.

A semi-final version of the 2004 Standard Specifications is now available on the intranet and internet. Significant changes have been made to the specifications that will require redevelopment of district-wide standard general notes. To assist you, we have established a team, lead by Peggy Chandler of the Design Division, to develop example statewide general notes. Upon completion, the example general notes will be made available to the districts.

Six regional specification seminars will be held for district and contractor personnel during the summer of 2004 to assist in the implementation of the 2004 Standard Specifications. More information on this subject will be coming in the near future.

If you have any questions or need assistance, please do not hesitate to contact the Design Division Field Areas or Bob Blackwell, (512) 416-3113, of the Maintenance Division.

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