



MEMORANDUM

To: District Engineers
Attn: Directors of Transportation Planning and Development
and District Bridge Engineers

November 27, 2001

From: Mary Lou Ralls, P.E.
Director, Bridge Division

Subject: New and Revised Standards for Type II Safety End Treatments for Pipe Culverts
Developed to Support Statewide Special Provision 467-009

New and revised standards for Type II Safety End Treatments for Pipe Culverts with an issue date of November 2001 are posted on the TxDOT web site and available for immediate use. These sheets support the recently approved statewide Special Provision 467-009 to the Item "Safety End Treatment". The standards and the special provision were developed to resolve several issues regarding the placement of riprap around Safety End Treatments.

- Confusion has arisen regarding the following clause under 467.3(2)(c), third paragraph, which reads:

Unless otherwise shown on the plans, when RCP is specified for the pipe structure, the Contractor shall have the option of providing Precast SET units in place of mitered RCP.

Safety End Treatments (SETs) with mitered reinforced-concrete pipe (RCP) have a riprap apron around the end of the pipe. The apron provides erosion control and also serves to anchor the pipe runners. Precast SETs do not require a riprap apron. In most cases the unit itself is sufficient for erosion control and the pipe runners are attached directly to the unit. After investigating this issue with several district construction engineers and design engineers, TxDOT concluded that the use of riprap around the ends of precast safety end treatments is generally not required. Most Districts do not require riprap aprons with precast SETs. However, each project needs to be considered on a case-by-case basis, and in some instances riprap for precast SETs may be required.

A conflict occasionally arises when a contractor substitutes precast units for mitered RCP, assuming that riprap is not required. The following clause has been added to the current special provision for this item:

If the contractor elects the precast SET option, riprap aprons will not be required unless the plans specifically require riprap aprons for precast SET units. The plans will show limits of the riprap to be included with the precast SET for payment.

Riprap between multiple precast SET units will be required as shown on the plans and shall be included in the price bid for SET.

This addition requires districts that desire riprap aprons with precast SETs to clearly state their intent on the plans. A new standard sheet, PSET-RR, has been developed to provide limits and quantities of riprap included with the precast SETs for payment. Any riprap placed beyond the limits on this standard must be paid for under Item 432, "Riprap."

- TxDOT field personnel have sometimes directed contractors to place riprap around the end of a pipe, exceeding requirements for a SET with the intent of getting additional riprap placed for slope protection. To address the concerns expressed by the Associated General Contractors on this issue, the Bridge Division has modified the statewide SET standards to clearly define the limits of the riprap to be included with the SET for payment. Districts currently using their own standards are encouraged to review their drawings and make similar revisions as necessary. In addition, the following clause has been added to the special provision:

The limits of riprap to be included in the price bid for each SET will be shown on the plans. Any riprap placed beyond the limits shown will be paid in accordance with Item 432, "Riprap".

- While the specification and statewide standards indicate that riprap aprons are always required when using prefabricated metal end sections, the following clause was added to the special provision for this item for further clarification:

Riprap will be required on all prefabricated metal end sections.

We hope these revisions will clearly communicate to our contractors our intentions regarding the placement of riprap used in conjunction with safety end treatments.

The new standards are available from the Bridge Standards (English) web pages in MicroStation® "dgn" and Adobe® Acrobat® "pdf" formats; therefore, copies of the sheets were not included with this memorandum. Effective immediately, these new and revised standards replace the old English sheets that were issued September 2000. Please distribute this information to the appropriate district staff and area offices as well as those consulting engineers working on TxDOT projects.

If you have questions or comments concerning these new standards, please contact David W. McDonnold, P.E., at (512) 416-2229, Gregg A. Freeby, P.E. at (512) 416-2192, or Jon T. Ries at (512) 416-2191.

Note: Original signed by Mary Lou Ralls

cc: Administration
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All Bridge Division Employees
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