



MEMORANDUM

TO: District Engineers

DATE: April 13, 2009

FROM: David P. Hohmann, P.E.

SUBJECT: New Bridge Railing and Revised Rail Anchorage Standard Drawings

New bridge railing and revised rail anchorage standard drawings with an issue date of April 2009 are posted on the TxDOT web site and are available for immediate use.

New bridge rail types are:

- Type T1W. This 32-inch tall traffic rail is ideally suited for stream and river crossings and meets NCHRP Report 350 Test Level 3 criteria.
- Type T223. This 32-inch tall traffic rail replaces Type T203 and meets NCHRP Report 350 Test Level 4 criteria.
- Types T551 and T552. These 32-inch tall traffic rails replace Types T501 and T502, respectively. They have the F-shape of Concrete Safety Barriers and meet NCHRP Report 350 Test Level 4 criteria.
- Type T66. This 32-inch tall traffic rail is ideally suited for stream and river crossings and meets NCHRP Report 350 Test Level 3 criteria. Its nominal face of rail is 1.5-feet from bridge edge.
- Type T80HT. This 50-inch tall traffic rail replaces Type HT and has the F-shape of Concrete Safety Barriers. It meets NCHRP Report 350 Test Level 5 criteria. Use of this rail requires a 10-in minimum slab overhang thickness
- Type T80SS. This 42-inch tall single slope traffic rail meets NCHRP Report 350 Test Level 5 criteria. Use of this rail requires a 10-inch minimum slab overhang thickness.
- Type C1W. This 42-inch tall combination rail version of Type T1W rail meets NCHRP Report 350 Test Level 2 criteria.
- Type C223. This 42-inch tall combination rail version of Type T223 rail replaces Type C203. It meets NCHRP Report 350 Test Level 2 criteria.

Class C (HPC) Concrete use is now accommodated with most rail types. All rail reinforcing steel is now required to be epoxy coated when bridge slab reinforcing steel is epoxy coated.

Type T6 rail is now limited to 1,000-foot and greater radii in curved applications due to difficulties in fabricating curved tubular W-beam rail sections.

Types T401, T402 and C402 now provide a rectangular 8-inch x 4-inch rectangular steel tube rail as an option to the 8-inch x 4.875-inch elliptical steel tube rail. Use of the rectangular tube option requires the Engineer's approval.

Minor changes have been made to the remaining rail standard drawings—Types T1F, T101, T221, T411, T77, SSTR, C221, C411, PR1, PR2 and PR3.

Rails not carried over from the previously issued standard drawings include Types T503, T504, C501, C502, T6R, B221, and B3. Bicycle-specific rails are no longer necessary with the recent reduction in minimum bicycle rail height from 54-inch to 42-inch.

All rail types not carried over from the previously issued standard drawings still meet NCHRP Report 350 crash test criteria and do not need upgrading.

New miscellaneous rail drawings are:

- C-RAIL-R. This working drawing replaces T501R and provides example retrofit details for most concrete rails.
- PR3-HD. This standard drawing provides ADA-compliant handrail details for the Type PR3 pedestrian rail.
- CLF-RO. This standard drawing provides details for installing an 8-foot tall chain link fence to most concrete traffic rails on railroad overpasses when such fencing is required by railroad companies.

The T101RC working drawing is substantially changed from the previous version to enhance safety performance.

Rail anchorage standard drawings are revised to include new rail types with some exceptions. These revised standard drawings are RW(TRF), RAC, RAC-R, T6-CM, PSBRA, BBRAS, BBRAO, DSBRA, DTBRAS, DTBRAO, and CGRAD. Refer to each rail anchorage standard drawing for the rail types it accommodates.

Use of these new and revised rail anchorage standard drawings is required for future bridge projects. Use of these standard drawings is not required for bridges currently being designed or with their designs complete.

These and other bridge standard drawings are available on the Bridge Standards web pages in MicroStation® “dgn” and Adobe® Acrobat® “pdf” formats. See <http://www.dot.state.tx.us/business/standardplanfiles.htm> .

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 David P. Hohmann

cc: Federal Highway Administration
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