To: New York State Department of Transportation

ENGINEERING BULLETIN

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Title: REVISED DETAILS FOR MODULAR JOINT SYSTEM – BD SHEETS

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Approved:
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Date 12/3/04

ADMINISTRATIVE INFORMATION:

- This Engineering Bulletin (EB) is effective beginning with projects submitted for the letting of 05/05/05.
- Bridge Design (BD) Sheets BD-JM1 through BD-JM9 and BD-JM10 R1 are superseded.
- This issuance does not supersede any EIs or EBs.

PURPOSE: This EB announces the availability of revised details for the modular joint system.

TECHNICAL INFORMATION:

- BD Sheets JM1 R1 through JM9 R1 replace BD Sheets JM1 through JM9 and BD-JM10 R2 replaces BD-JM10 R1. New BD-JM11 and BD-JM12 are issued.
- The formulas used to calculate expansion and contraction of the one-cell joint have been changed to accommodate a greater setting width.
- Sliding steel cover plates for multicell joints on brush curbs and concrete barrier have been reduced in thickness and the plates shortened for ease of fabrication and installation.
- Joint and cover plate details are provided for F-shape concrete barrier and for single slope concrete barrier. A cover plate detail is also provided for single slope concrete median barrier.
- Cover plates for one-cell joints on bridges with greater than 30° skew are now required.
- Assumed dimensions for edge and separation beams for the multicell joint system are provided.
- A 10 mm steel plate between the edge beam and the anchorage system is called out for all joints.
- Weld symbols and sizes have been made consistent.
- Minor editorial changes and improvements have been made to the details and notes.
- The multicell joint sheets have been reorganized so that similar details are grouped together.

TRANSMITTED MATERIALS: No materials are attached to the issuance. Bridge Detail (BD) Sheets are available at the Department’s web site (www.dot.state.ny.us/caddinfo/structures/bd.html) and on the IntraDOT system.

BACKGROUND: A major change on the revised BD Sheets is the provision of a greater joint width for the one-cell modular joint. Field experience with this joint system showed that the initial setting width was inadequate and led to difficulty installing the seal, especially with staged construction and rehabilitations. The expansion and contraction formulas have been modified to provide a greater initial setting width to facilitate installation.

Fabrication and installation difficulties were experienced with the steel sliding cover plates for brush curbs and concrete barrier. The plate thickness has been reduced to 10 mm to make it easier for the fabricator...
to bend the plates into the required shapes. Also, the plate lengths have been shortened to make installation easier. New details have been added for cover plates for single slope concrete barrier, single slope concrete median barrier, and F-shaped concrete barrier. A threshold skew value of 30° has been established beyond which one-cell joints must have a cover plate on concrete barrier. This was done to limit the width of an exposed opening in the barrier and minimize impact risk to drivers.

The revised multicell drawings show assumed dimensions for edge and separation beams for the joint system. This addresses the situation where fabricators sometimes supplied beams of differing widths from those assumed by the designer, resulting in an improper setting width for the joint. Providing assumed dimensions is intended to ensure a standardized joint width for easier installation and better operation of the supplied system.

The existing drawings (one-cell and multicell) do not indicate a 10 mm steel plate on all the details. This has led to occasional confusion about whether a plate is required for all joint assemblies. The revised drawings clarify this requirement by calling out the plate on all drawings.

**CONTACT:** Direct questions regarding this EB to Laurel Bryden in the Structures Division Standards Unit at (518) 457-9869 or by e-mail at lbryden@dot.state.ny.us.