



To: n-30-1-87728- Des EII Bld MC SUPERSEDED BY EB 99-024 EFFECTIVE 3/16/99		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 97-022
TITLE: BRIDGE DESIGN DATA SHEETS: BDD 97-54A AND B, 97-M54A AND B, THRIE BEAM BRIDGE RAIL; BDD 97-55A THRU C, 97-M55A THRU C, DOUBLE BOX BRIDGE RAIL (CURBLESS)			
Distribution: <input type="checkbox"/> Manufacturers (18) <input type="checkbox"/> Surveyors (33) <input checked="" type="checkbox"/> Main Office (30) <input checked="" type="checkbox"/> Consultants (34) <input checked="" type="checkbox"/> Local Govt. (31) <input type="checkbox"/> Contractors (39) <input checked="" type="checkbox"/> Regions/Agencies (32) <input type="checkbox"/> _____ ()		Approved:  J. M. O'CONNELL Deputy Chief Engineer (Structures)	

PURPOSE: The purpose of this instruction is to issue Bridge Design Data (BDD) Sheets for alternative bridge railing details for applications on low volume, rural local roads.

TRANSMITTED MATERIALS: This instruction transmits the following:

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| BDD 97-54A and B | THRIE BEAM BRIDGE RAIL (U.S. Units) |
| BDD 97-M54A and B | THRIE BEAM BRIDGE RAIL (Metric Units) |
| BDD 97-55A, B and C | DOUBLE BOX BRIDGE RAIL (CURBLESS) (U.S. Units) |
| BDD 97-M55A, B and C | DOUBLE BOX BRIDGE RAIL (CURBLESS) (Metric Units) |

BACKGROUND: These BDD Sheets were developed as a result of investigations made by the Subcommittee on Local Bridge Standards that was formed at the initial DOT Statewide Conference on Local Bridges in 1994. The Structures Division, through the Standards Committee, was asked to consider adopting alternative steel bridge rail systems that would be appropriate for local road applications and would be more economical than the standard NYSDOT steel rail systems developed for all highway classifications. The BDD sheets being issued by this E.I. detail two alternative rail systems that consist of readily available components and simpler fabrication details than the present NYSDOT Steel Bridge Rail - Two Rail system (refer to BDD Sheets 97-51 and 97-M51 series.) The Thrie Beam rail was based on existing Thrie Beam rail details used by NYSDOT for certain rail retrofits as well as from crash tested systems used by other States. The Double Box Bridge Rail Curbless is based on modifying the present NYSDOT culvert rail, and employs standard highway box beam rail tubing.

These BDD Sheets are being issued primarily to provide details for economical alternative rail systems for use by local agencies on low volume rural local road bridges. They are not intended to replace the current NYSDOT curbless Two Rail Systems as the Department's preferred system for steel railing on state highway projects; however they may be considered for use on DOT projects on an individual basis.

POLICY: Both the Thrie Beam Bridge Rail and the Double Box Bridge Rail (Curbless) shown in these BDD Sheets may be used as alternates to the NYSDOT Steel Bridge Rail-Two Rail system on new or replacement bridges or on bridge rehabilitations, subject to the following guidelines and restrictions:

- These rail systems may only be considered for use on bridges that are not on the National Highway System.
- Use shall be limited to bridges carrying rural local or collector roads.
- These rail systems are intended to be used on curbless bridges only.
- The Thrie Beam Bridge Rail shall be limited to short, low level bridges, with low ADT (ADT < 500 vpd suggested) and small numbers of heavy vehicles are expected, and where speeds are either posted or reduced. The Thrie Beam Bridge Rail is not recommended for use on bridges exceeding 15 m (50 ft.) in length between abutments
- The Double Box Bridge Rail (Curbless) shall be limited to smaller bridges carrying local or collector rural highways with low to moderate ADT (ADT < 1500 vpd suggested) and small numbers of heavy vehicles are expected. This rail system is not recommended for use on bridges exceeding 30 m (100 ft.) in length between abutments.

CONTACT: Questions and comments can be directed to George Christian (518) 457-4453 of the Structures Design and Construction Division, Bridge Design Section or to Arthur Yannotti (518) 485-1148 of the Division's Bridge Standards Unit.