

TO: MODIFIED BY EI 82-035 Director, EFFECTIVE 5/17/82 Preliminary Review Bureau PRELIMINARY REVIEW BUREAU SUPERSEDED BY EI 82-054 EFFECTIVE 8/13/82		ENGINEERING INSTRUCTION NEW YORK STATE DEPARTMENT OF TRANSPORTATION	
Distribution:		SUBJECT: REPLACEMENT CLAMPS FOR STEEL BRIDGE RAILING Subject Code: 7.35-2	
<input checked="" type="checkbox"/> Main Office <input type="checkbox"/> Regions <input type="checkbox"/> Special		Code: <u>E.I. 82-13</u> Date: <u>FEBRUARY 19, 1982</u> Supersedes:	
APPROVED: <i>E. V. Hourigan</i> <u>E. V. Hourigan, Deputy Chief Engineer (Structures)</u>			

Several years ago, it was determined that the railing clamps used on two and four rail steel bridge railing installed between the mid 1960's and mid 1970's were a serious maintenance liability. (See attached Detail #1). Therefore, a new clamp was designed and made part of the standard details.

The new design cannot be used with the older railing systems mentioned above. Therefore, a modified version was developed (see attached Detail #2) for retrofitting existing systems with the inadequate clamp. A very similar clamp has been used by the Maintenance Division for several years. In addition, the details for the modified version (Detail #2) were informally distributed to Designers, on a job-by-job basis, in both the Main Office and Regions for use on various rehabilitation contracts.

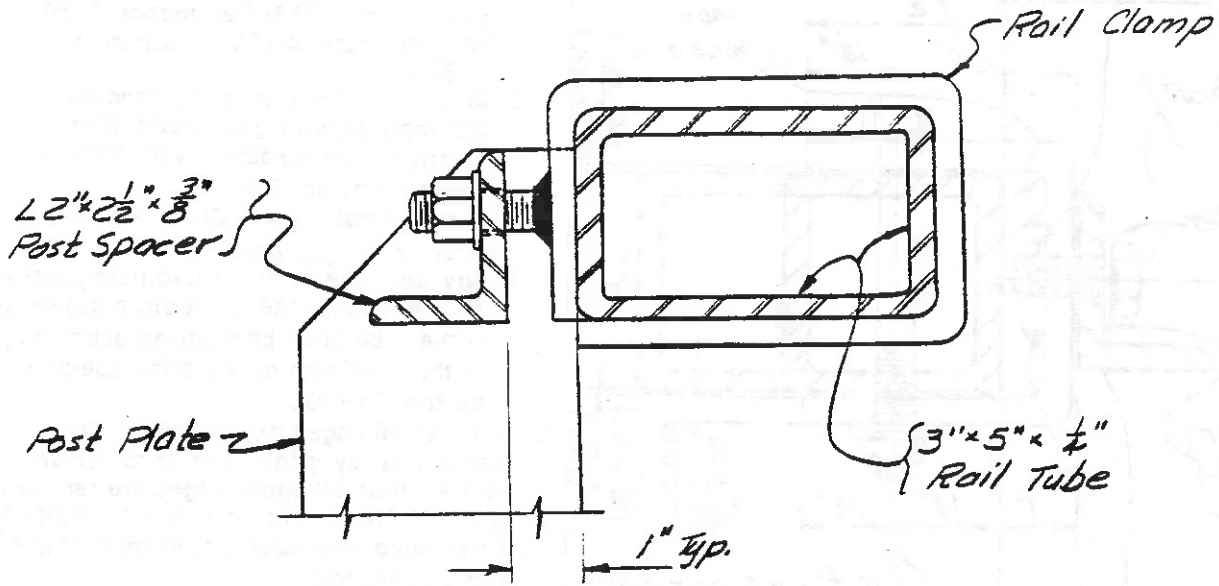
Effective immediately, rail clamps of the type depicted in Detail #1 shall be replaced by clamps built according to Detail #2 on all bridge rehabilitation contracts where they are encountered.

Designers should assure themselves that the replacement clamps will fit the railing systems on which they are to be used. A railing system was recently encountered which was not built according to the Contract Plans. This fact was not noticed until the Contractor was ready to install the clamps. New modified clamps had to be ordered at the State's expense.

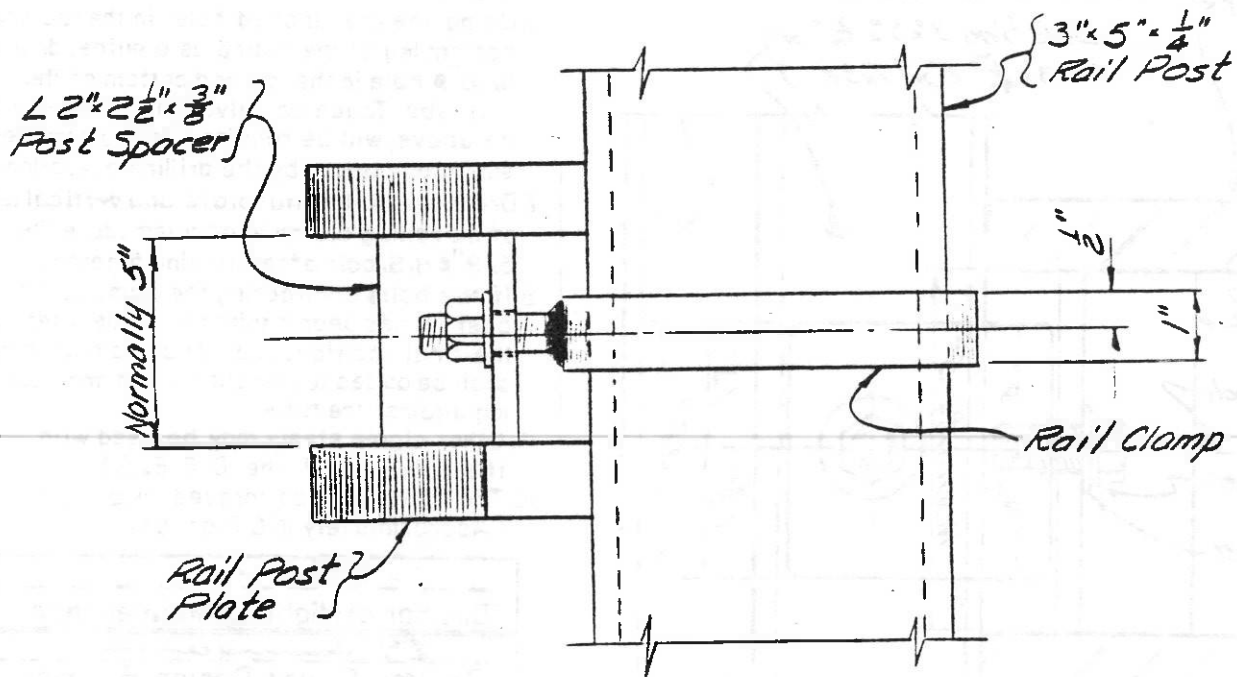
If you have any questions, contact the Special Design Unit at 518-457-2459.

Attachments

PREL.	FINAL
DESIGN	LANDSCAPE
RECEIVED FACILITIES DESIGN DIVISION FEB 03 1982	
FILE	FILE



PARTIAL ELEV.

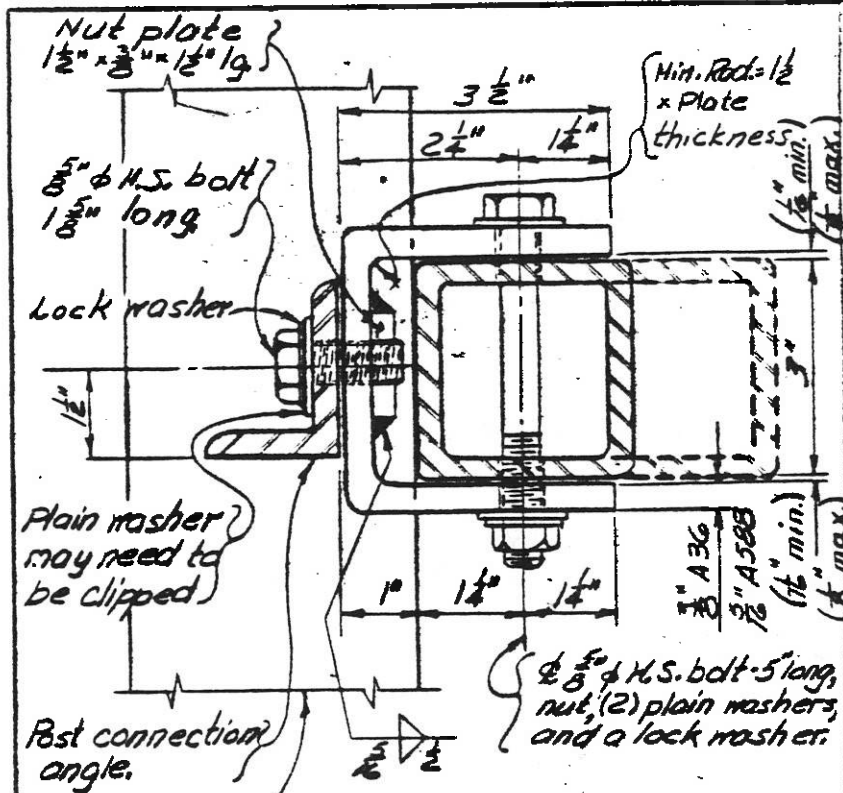


PARTIAL PLAN VIEW

DATE 10/31
 DETAIL L.S.C.

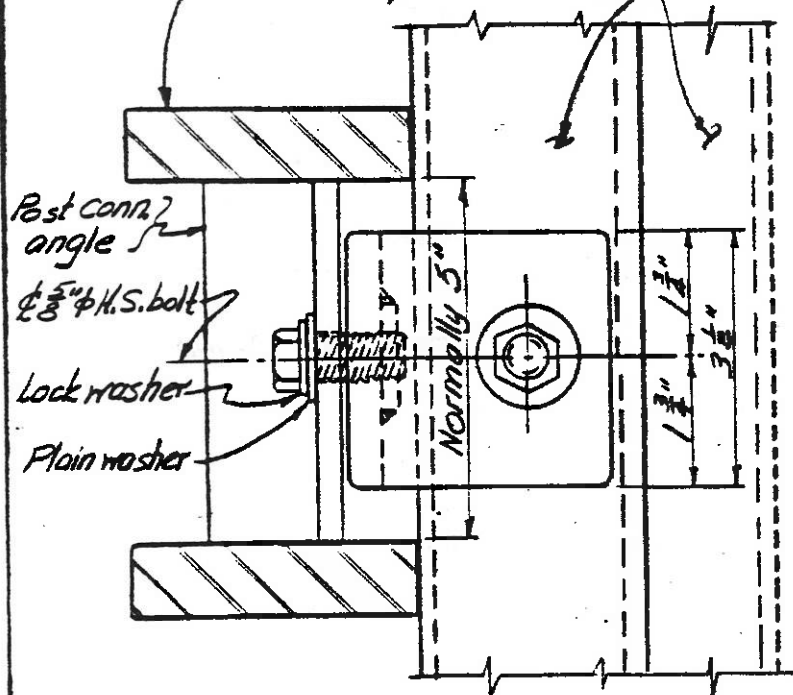
SCALE: $\frac{3}{8}'' = 1''$

DETAIL #1



PARTIAL ELEV.

Existing $3 \times 3 \times \frac{7}{16}$ " or $5 \times 3 \times \frac{1}{4}$ " Rail Tube



PARTIAL PLAN VIEW

DATE: 09/81
 DETAIL: L.S.C.

1. Materials used in the manufacture of this clamp shall conform to the requirements and/or specifications listed below:
 - A. Rail Clamp - ASTM Designation A-36.
 - B. Bolts and nuts - ASTM Designation A-325.
 - C. All parts of the clamp and connection assembly shall be galvanized after fabrication in accordance with Material Specification 719-01.
 - D. All bolts shall have a Class 2A thread fit prior to galvanizing.
 - E. Any damage to the galvanizing, either on the clamp, the connection assembly, or the tube, shall be repaired according to the provision of Material Specification 719-01.
2. Chamfer all edges and corners of the clamp 1/16" by grinding prior to galvanizing so that all sharp edges are removed.
3. All dimensions related to the fabrication of the clamp shall have a tolerance of 1/8" after galvanizing.
4. All welding shall conform to the requirements of the New York Dept. of Trans. "Steel Construction Manual".
5. Locate and punch two (2) 3/4" ϕ holes in the top and bottom legs of the rail clamp as shown on this sheet.
6. Using the prepunched holes in the top and bottom leg of the clamp as a guide, drill a 11/16" ϕ hole in the top and bottom of the rail tube. Touch up galvanizing, as described above, will be required on any damaged surfaces caused by the drilling operation.
7. Drill and tap the nut plate and vertical leg of the railing clamp to accommodate the 5/8" ϕ H.S. bolt after welding together.
8. If the bolts connecting the clamp to the post angles bear against the tube when in the final position, additional plain washers shall be added to prevent the bolt from bearing against the tube.
9. Other clamp steels may be used with the approval of the D.C.E.(S).
10. The bolts shall be torqued snug tight (Approximately 100 foot lbs).

Director of Highway Maintenance
 Director Struct. Design & Const.
 STATE OF NEW YORK
 DEPT. OF TRANS.
 DIV. OF MAINTENANCE
 ST. BR. RAILING
 REPLACEMENT CLAMP
 DETAILS
 SCALE: 3/8" = 1" DWG. NO. SR-4