

TO: MAIN OFFICE ALL REGIONAL OFFICES SUPERSEDED BY EB 97-020 EFFECTIVE 4/4/1997	<h1>ENGINEERING INSTRUCTION</h1> <p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION</p> <p>SUBJECT: FRACTURE CONTROL PLAN FOR FRACTURE CRITICAL BRIDGE MEMBERS</p> <p>Subject Code: 7.35</p>
Distribution: <input checked="" type="checkbox"/> Main Office <input checked="" type="checkbox"/> Regions <input type="checkbox"/> Special APPROVED: <i>E. J. Hanigan</i> DEPUTY CHIEF ENGINEER (structures)	Code: <u>EI 78-28</u> Date: <u>5/24/78</u> Supersedes:

A recent FHWA requirement has mandated the development and implementation of Fracture Control Plans for Fracture Critical Bridge Members.

Fracture Critical Members (FCMs) are those tension components of a bridge whose failure would be expected to result in collapse of the bridge.

Examples of FCMs are the tie girders of a tied-arch bridge, steel pier cap beams, the girders of a two-girder bridge, the tension web and chord members of trusses, suspended span hangers and other nonredundant parts supporting the superstructure.

When structures include FCMs, it is necessary to identify the FCMs on the plans, and include special provisions in the proposal which outline specific material requirements, and fabrication and testing procedures. These notes will vary from project to project, depending on the type and number of members which are fracture critical.

The following note shall appear on the plans when bridges contain Fracture Critical Members:

"This structure contains Fracture Critical Members. These members are identified on individual drawings. The Contractor shall comply with the provisions of Special Notes which appear in Section 715-01, Structural Steel, of the proposal."

Please contact the Metals Engineering Unit of this office if you are designing any structure which may contain fracture critical members so that the required special provisions for FCMs may be obtained from that unit and included in the plans and specifications.

Manual	Code	Date	Page
Subject: Fracture Control Plan for Fracture Critical Bridge Members			

Squads reviewing plans and specifications prepared by consultants or State agencies outside this office should submit them to the Metals Engineering Unit for review when they contain FCMs.

Squads updating old plans are particularly warned to look for FCMs.

Fracture-critical bridge designs should be considered only when other alternate redundant designs, which provide the greater safety of multiload-paths, are not structurally feasible or cannot be economically justified.