**عنوان مقاله:**

Optimum location of the square web opening in box plate girders

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**خلاصه مقاله:**

One of the most applicable sections in bridge construction is box plate girder. In order to cross the mechanical instruments and periodic maintenance it is essential to embed openings along the girder. The openings have negative effects on the capacity of the girders. This paper explores the optimum position of the web opening which results less negative effects on the plate girder ultimate resistance. So, non- linear static analysis in ABAQUS is performed on box plate girders subjected to the uniform distributed load on the top flange. To implement a comprehensive study the web slenderness, the ratio of span length to the height of the section considered as variable. Numerical results have been compared to those of the AASHTO for validity. Results exhibit that embedding the opening in the quarter of the girder span provides the least negative effect on the capacity of the girder

**کلمات کلیدی:**

box plate girder، square web opening، non- linear static analysis، finite element

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