CE388 - FUNDAMENTALS OF STEEL DESIGN

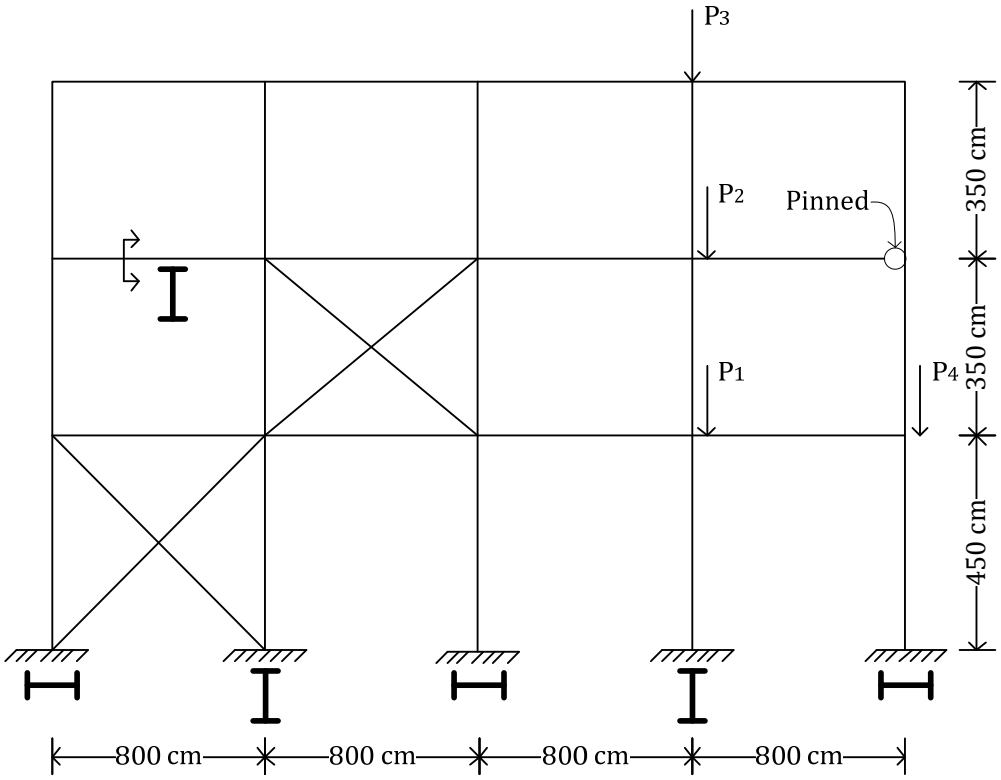
2011-2012 Spring Term

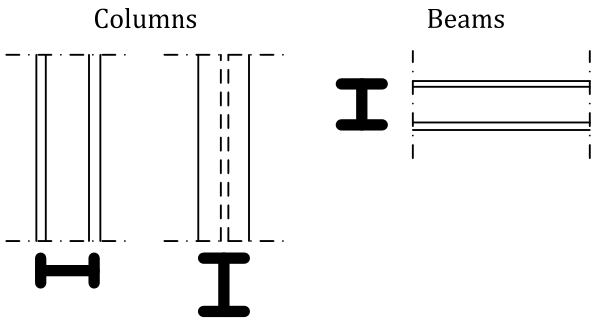
Homework III

Due date: 12 April 2012

Submit your homework at class time or alternatively to Özkan Kale before 11:59am. Fifty percent penalty applies to homeworks submitted on 12 April 2012 between 11:59am and 17:00pm. Homeworks submitted thereafter will receive no credit.

1. All columns HEB 650 and all beams HEA 500 (strong axis bending). Out of plane all columns are supported at story levels. Use K=1 out of plane. All members are St 37 Steel. Determine allowable axial loads P_1, P_2, P_3 and P_4 according to TS 648 provisions. All beam to column connections are rigid except for one.





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2. A built-up compression member is constructed by connecting 4 equal leg angles as shown below. The spacing between battens in both principal directions are 150 cm. The pin ended member has a length of 600 cm. Determine the lightest equal leg angle section for this built-up column such that the allowable load according to TS 648 provisions is 275^{tons}. St 37 Steel and EY Loading.