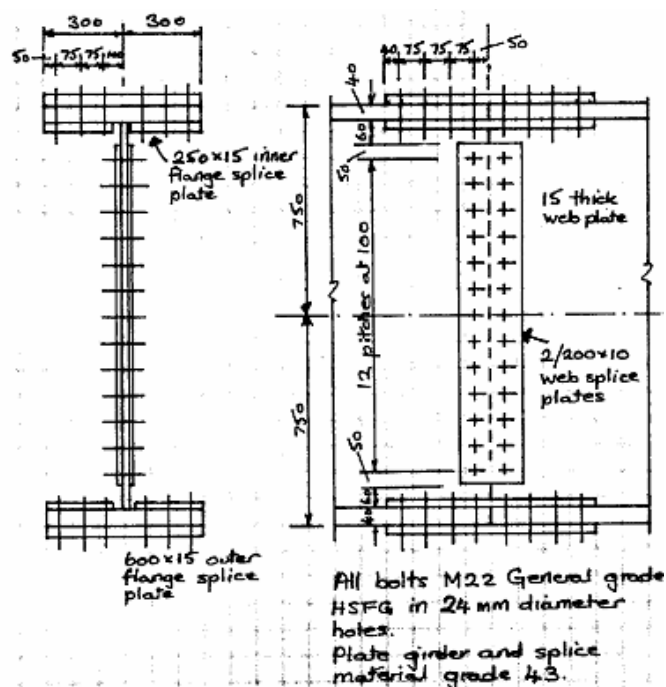


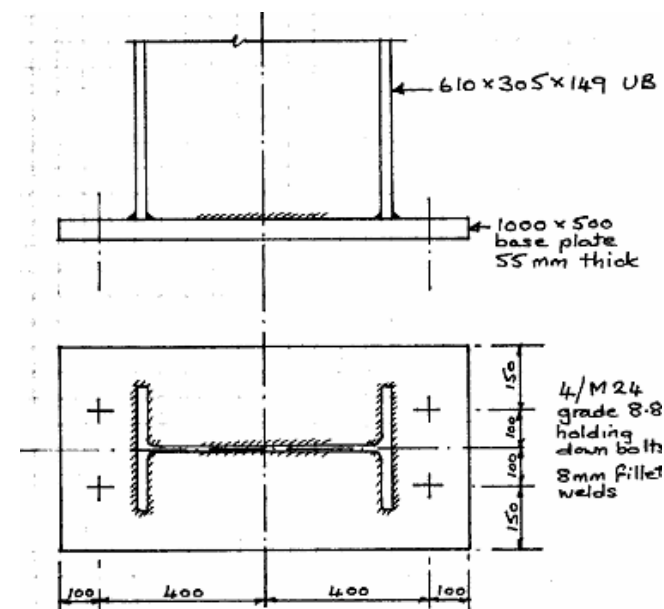
3ª Lista de Exercícios – Ligações Tradicionais - Owens Data de Entrega: 15 dias

Os exercícios abaixo encontram-se resolvidos no livro *Structural Steelwork Connections* (autores: Owens e Cheal). Pede-se para resolve-los pela norma européia – Eurocode 3 – parte 1.8.

- Bolted cover plate splice for Plate Girder**
Design a bolted cover plate splice for a 1500 mm x 600 mm plate girder, with 40 mm thick flanges and a 15 mm thick web in grade 43 steel.
The splice is to carry the following loading (due to factored loads):
Bending moment 4456 kNm
Shear 620 kN
Axial tensile load 106 kN
Properties of plate girder $I = 2.916 \times 10^6 \text{ cm}^4$
Area = 693 cm²

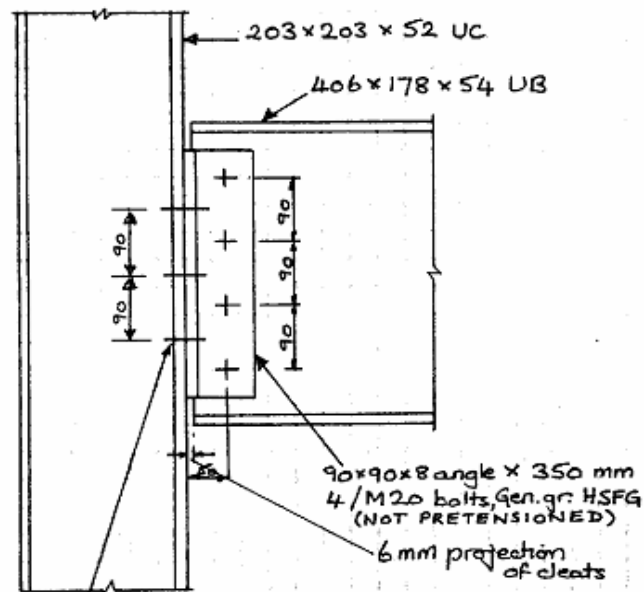


- Design a base plate for a 610x305x149 UB with an axial load of 1147 kN, a moment (about the XX axis) of 536 kNm and a horizontal shear of 179 kN. (All due to factored loads)



3. Beam to column connection - single bolted web cleat.

Design a bolted connection for a $406 \times 178 \times 54$ UB in Grade 43 steel, using a single web cleat, to carry a reaction of 145 kN (due to factored loads). The connection is to the flange of a $203 \times 203 \times 52$ UC in Grade 43 steel.



4. Bolted gusset plate connection for truss

Design a bolted gusset plate connection for the members and factored loads shown in the sketch.

