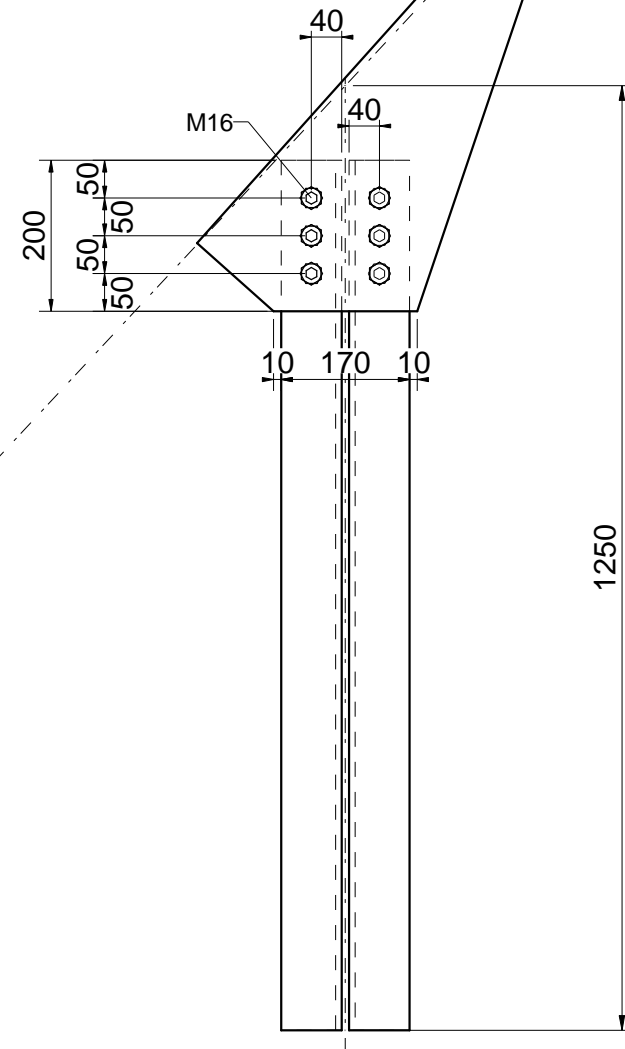
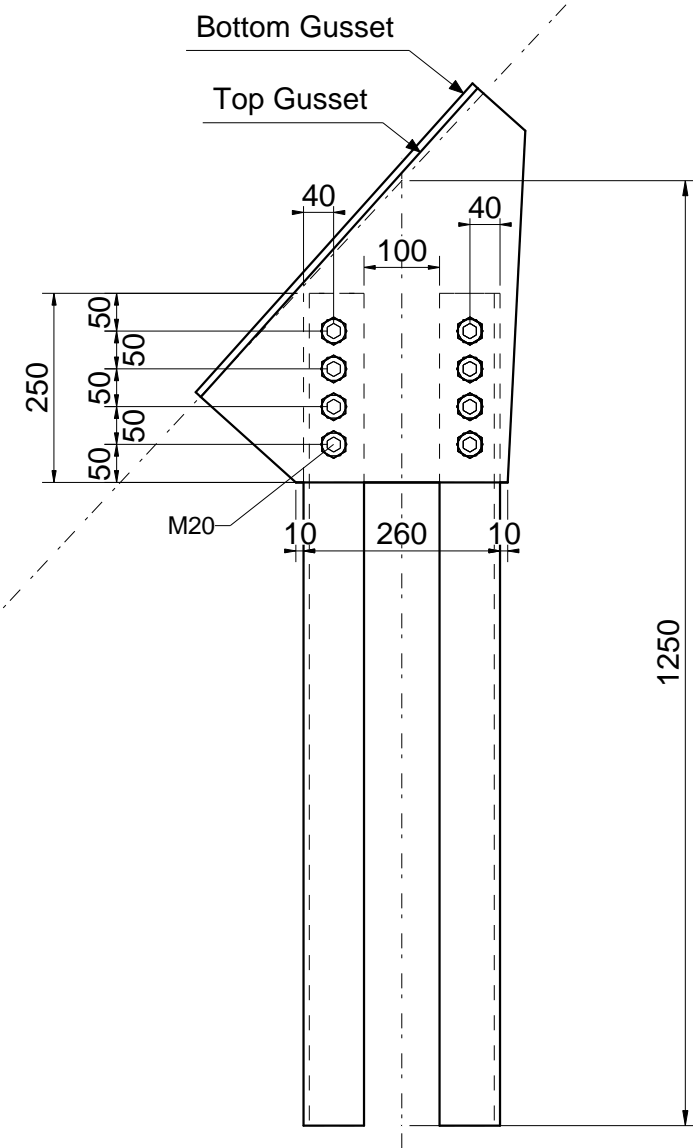
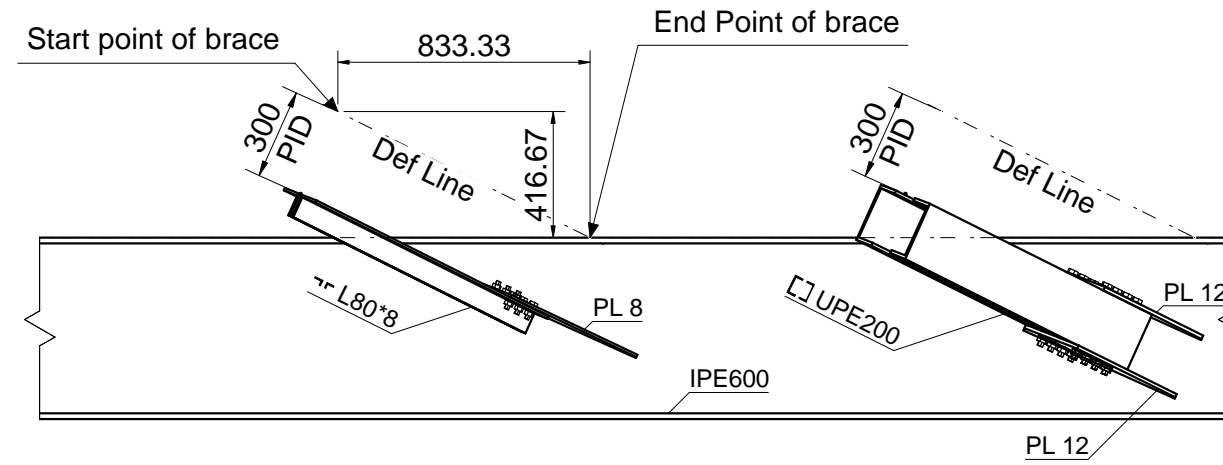


Main Beam not shown for clarity

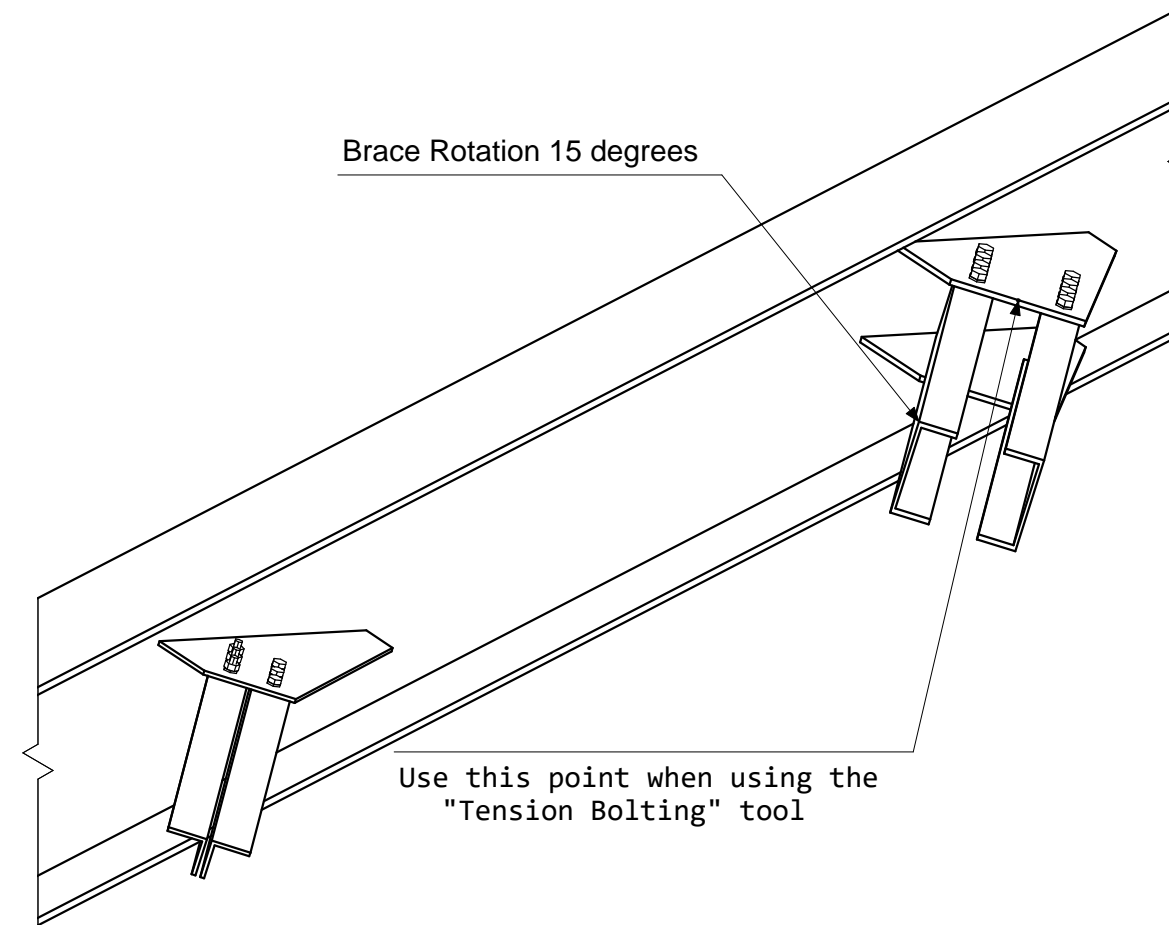


Top of braces

Length of braces  
1250 mm



Side View



3D View

Model the Gusset plates and bolts as shown.

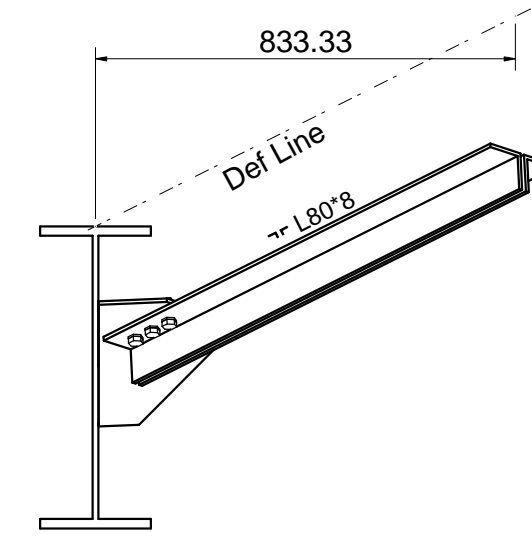
- The dimensions not shown are not important.
- After entering the braces at the given points (833.33 horizontal and 416.67 vertical) give them a rotation of 15 degrees. Planar approach angle of braces is 45 degrees. Now give a position in depth (PID) of 300 mm. Note that the Gusset plate macros will not work with this orientation of the braces. The purpose of this exercise is to teach you what to do in such cases.
- Use the Generic "Gusset Plate" tool under the "Detailing" Menu to create the Gusset Plates. The Generic "Gusset Plate" tool asks for a line (2 points) and N braces. The line represents the face of the web which the Gusset Plate will hit. This Line needs to be in the plane of the braces. Create these Line points by using the "Plane Plane intersection" command under the "points" menu. Select the top plane of the brace and the web plane of the main beam.

- Set the parameters of this generic "Gusset Plate" tool. It allows the user to set bolting / welding length parameters, thickness of gusset plate, and other things as well. Note that this tool can create Gusset Plates for multiple secondary braces in the same way.

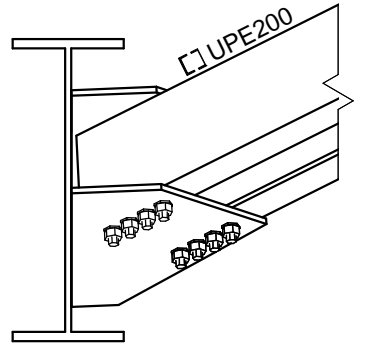
However since these braces are not in the same plane as the main beam the gusset plate edge touching the web will need to be shifted manually

- Use the generic "Tension Bolting" tool to create the bolts. The generic "Tension Bolting" tool asks for a Brace, A gusset plate and one point. The point should be the center of the edge which is perpendicular to the brace.

- You can watch the Tutorial [here](#).

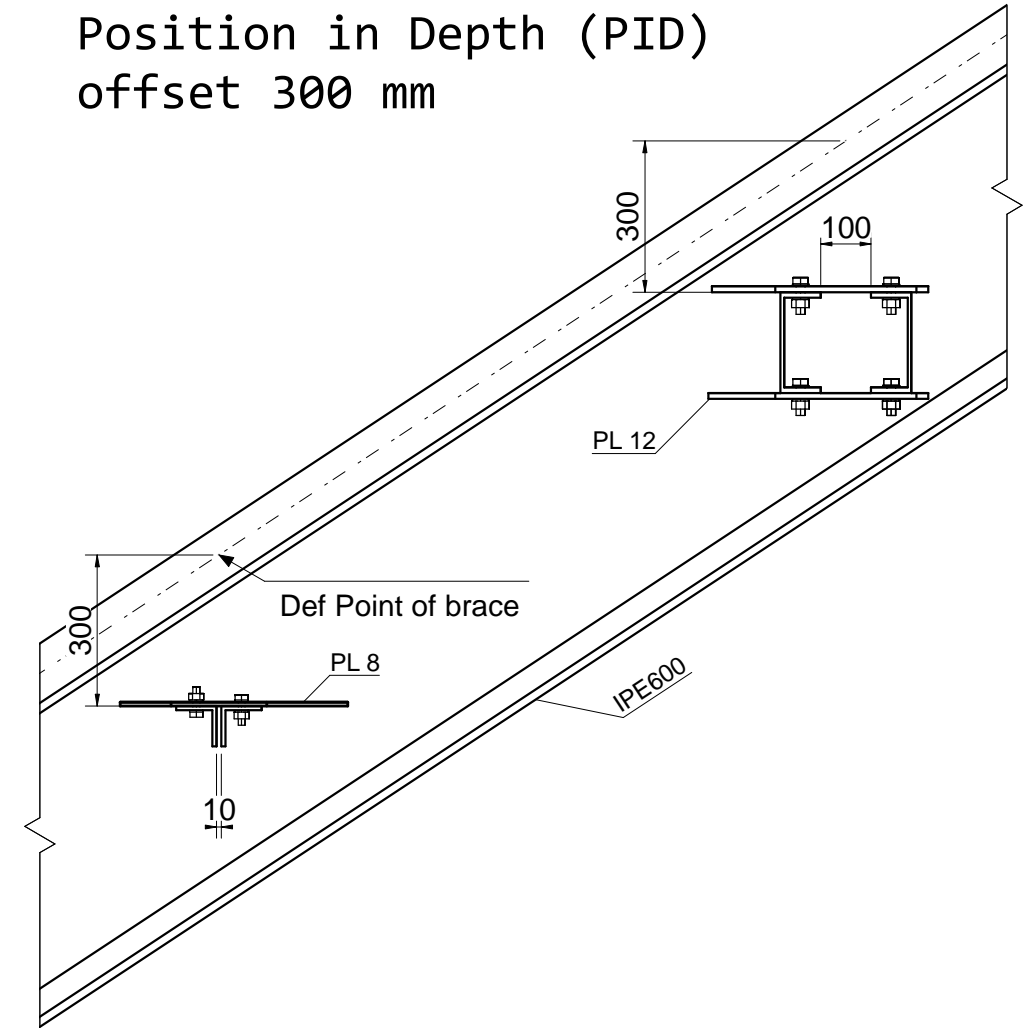


Beam Section



Beam Section

Position in Depth (PID)  
offset 300 mm



Sectional view of Braces

The Purpose of this exercise is to show the user that they can still create gusset plates and bolts even in cases where the main gusset macros don't work because of mis-alignment of the main and secondary members. Having mastery over these two generic tools (Generic Gusset Plate and Generic Tension Bolting) will be very useful in real life modeling.