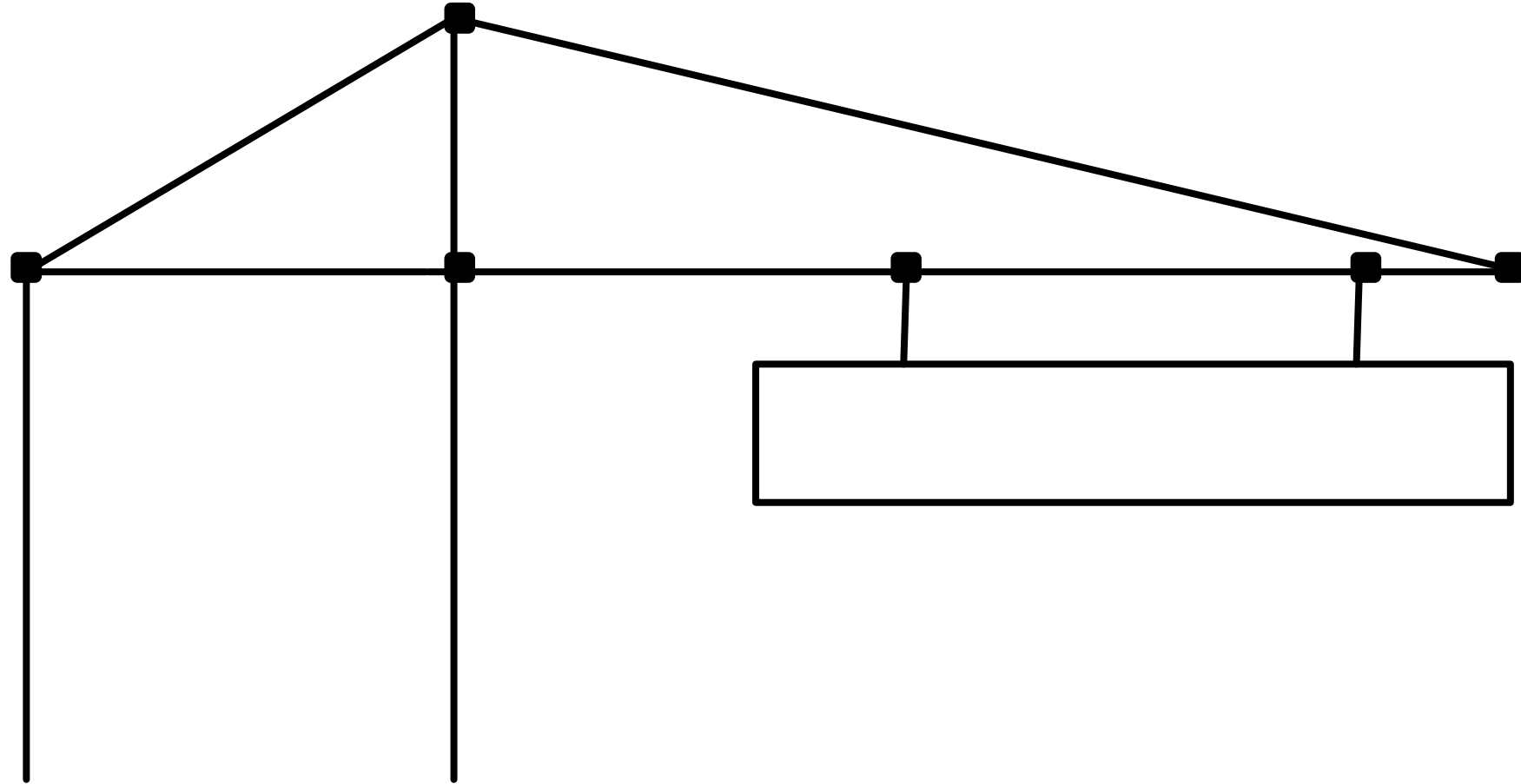


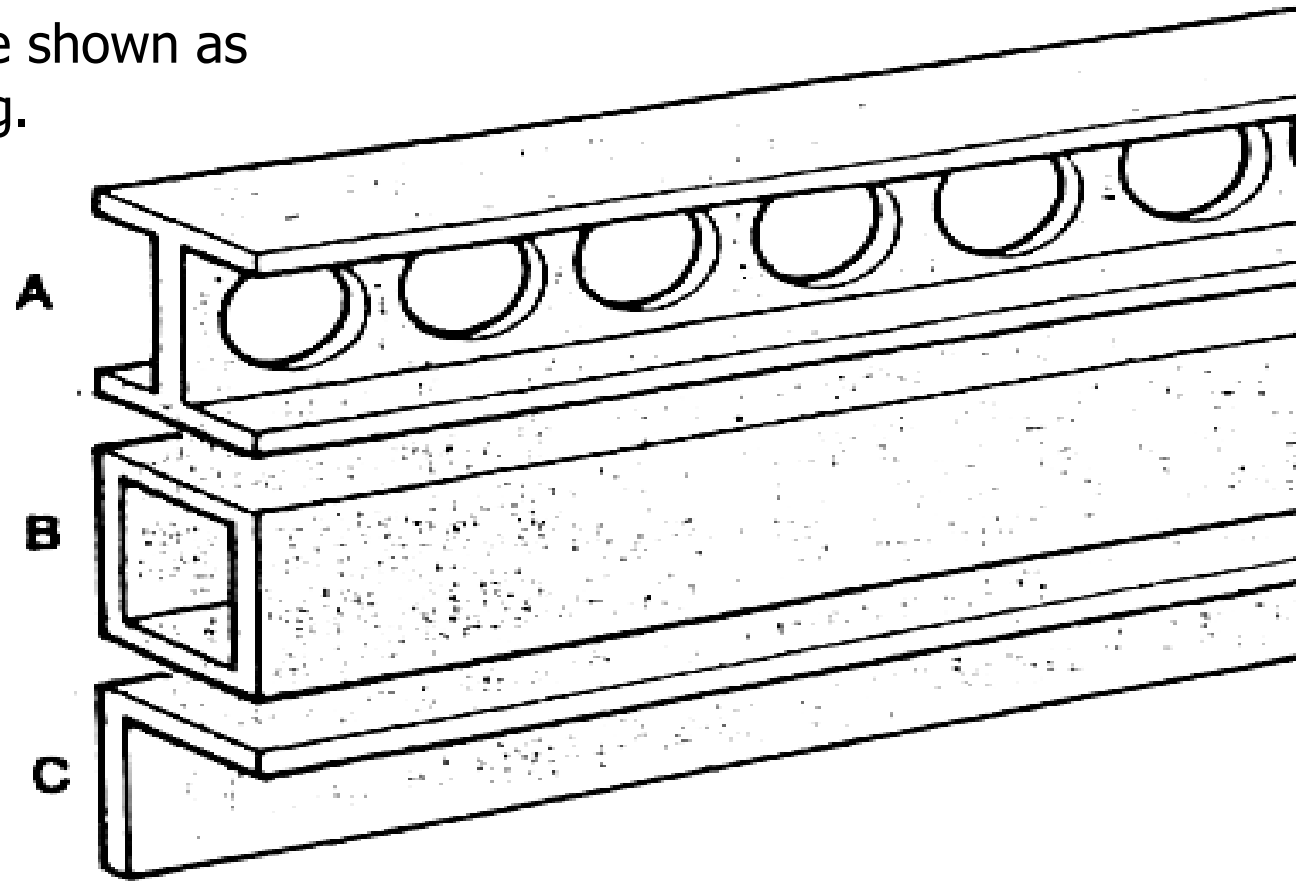
The diagram shows a plan for a **road sign gantry** to be used on all major roads in South Africa. The design has to be strong and as cheap as possible to manufacture.



Scale: 1 : 1

Label the gantry with the possible forces exerted on it.

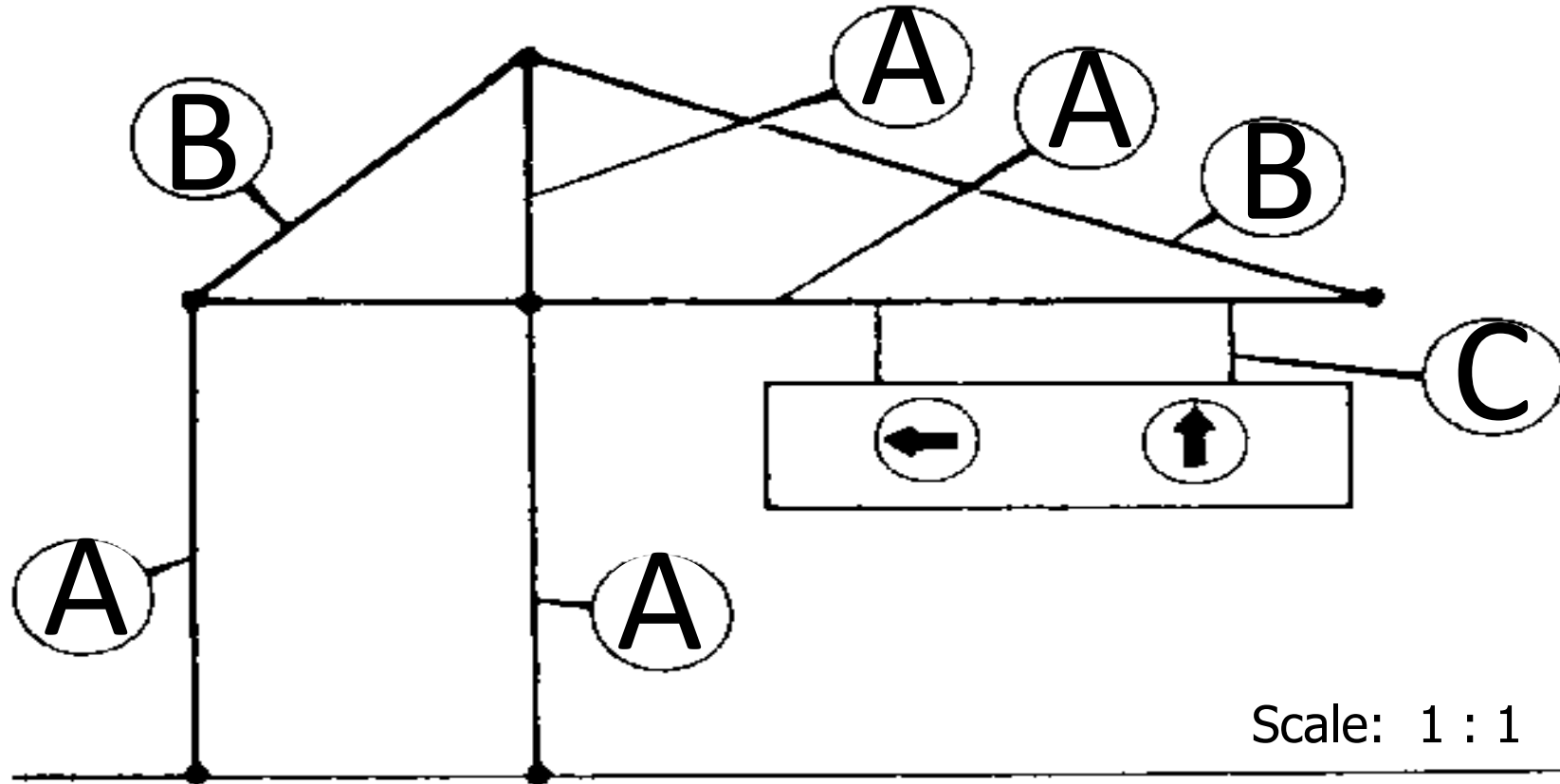
The possible materials are shown as A, B, and C in the drawing.



Angle beams (C) are the most expensive to use.
I-beams (A) are the strongest.

Choose the most suitable material for each member to make this structure rigid, stable, and cost-effective.

Indicate in each circle the material you would use by writing A, B, or C.



Use the following information to calculate the final cost of each gantry:

Square Beams = R 130-00 / m

I-Beams = R 150-00 / m

Angle Beams = R 175-00 / m

Use the following information to calculate the final cost of each gantry:

Square Beams = R 150-00 / m

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Cost Annalysis: **Gantry**

3m @ R150.00/m = R 450

3m @ R150.00/m = R 450

8m @ R150.00/m = R 1200

1.7m @ R150.00/m = R 255

Total Cost : **I-Beam** **R 2355**

3m @ R130.00/m = R 390

6.4m @ R130.00/m = R 832

Total Cost : **Square Beam** **R 1222**

1m @ R175.00/m = R 175

Total Cost : **Angle Beam** **R 175**

Final Cost : R 3752

Draw an Orthographic Projection of the final design on page 2 in your Drawing Portfolio.

Orthographic Projection : Gantry

Scale: 1 : 1

