MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

Department of Mechanical and Manufacturing Engineering

ENGINEERING GRAPHICS - II

CLASS 2: SECTION OF SOLIDS

(SHEET 1)

QUESTION BANK: SECTION OF SOLIDS- PROBLEM 2

A hexagonal prism of 25mm side of base and 65mm height rests on its base on HP with one of its smaller edges parallel to VP. It is cut by an AIP inclined at an angle of 60° to HP. The AIP intersects the axis of the prism at a height of 35mm above the base. Draw the sectional top view and true shape of the section.

Data

- Hexagonal prism.
- 25mm side & 65mm height.
- Resting with base on HP with one of its smaller edges parallel to VP.
- Section plane is AIP at 60°.
- Bisects axis at 35mm above base.

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Steps Involved

- Draw the XY line
- Draw the top and front views
- Dimensioning
- Naming

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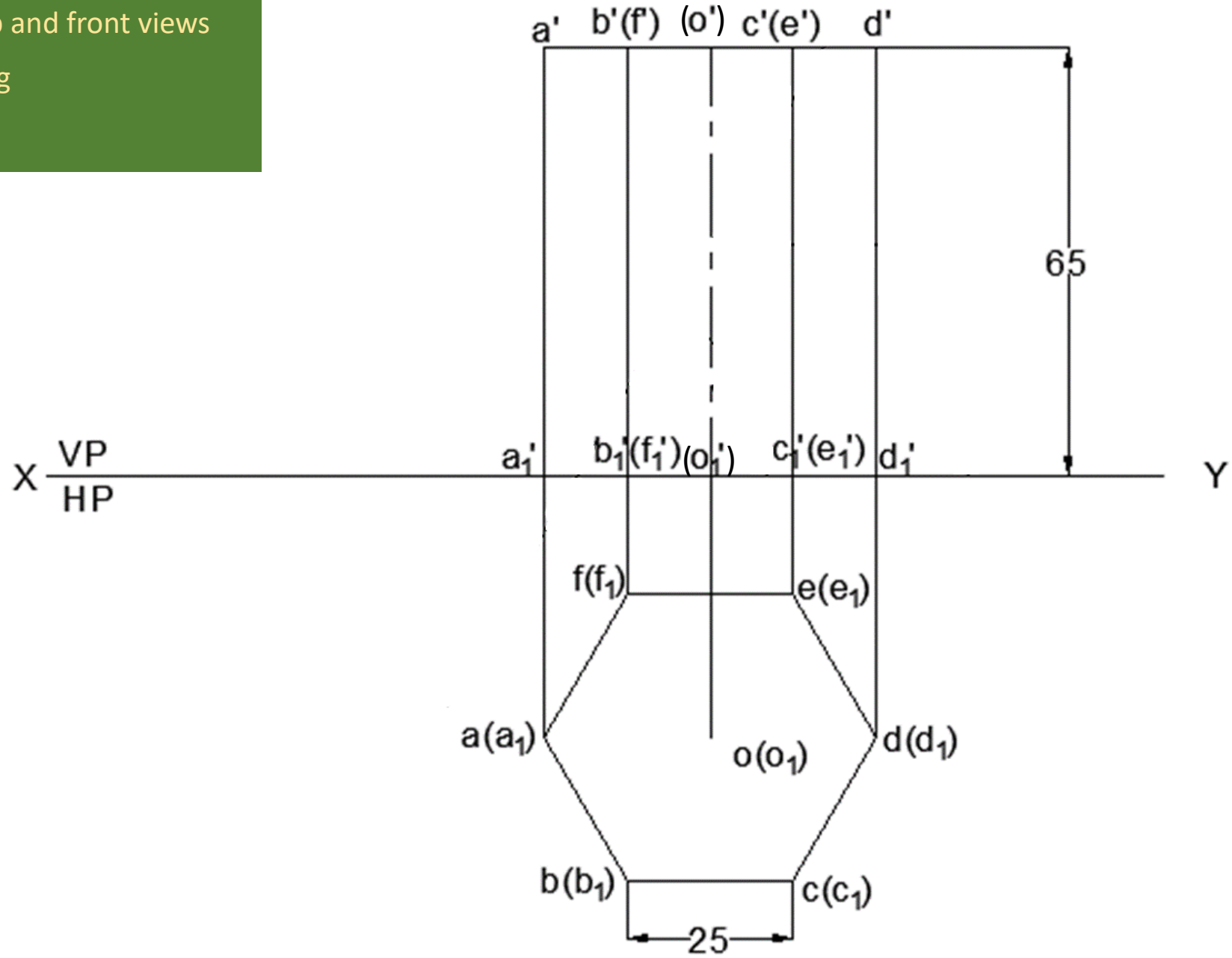

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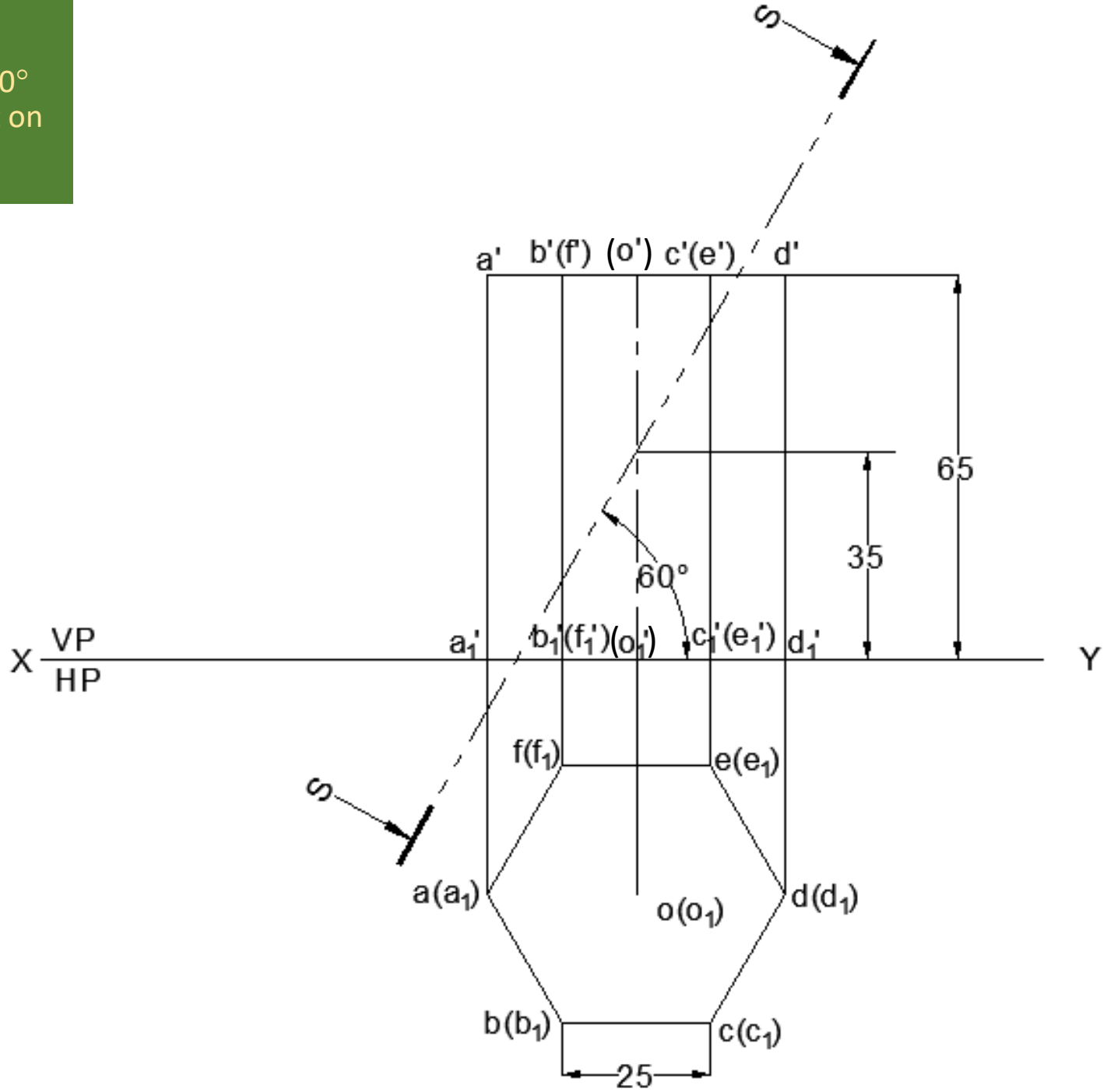
Steps Involved

- Draw the section line at 60° passing through the point on axis, 35mm above base.



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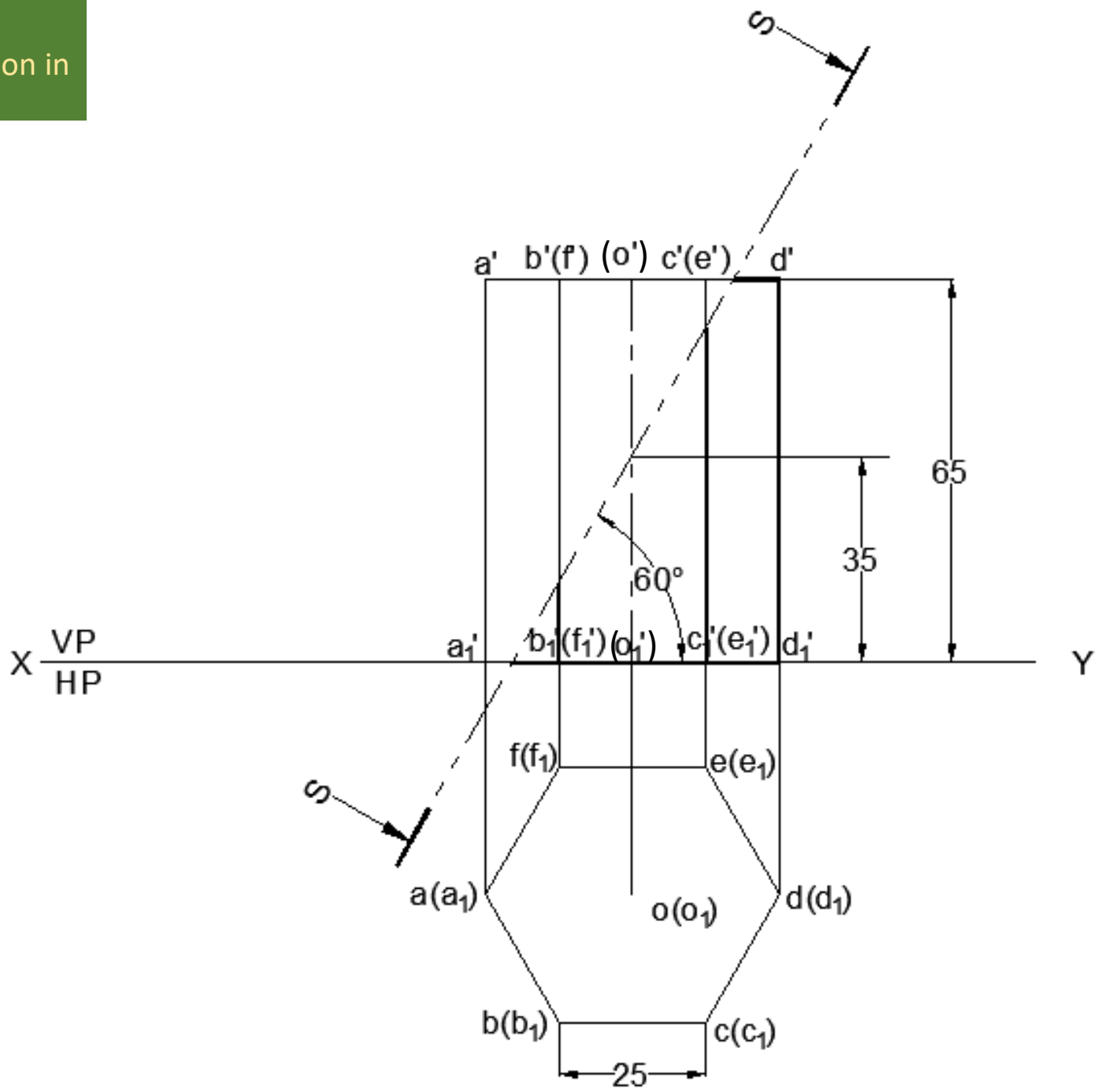
Steps Involved

- Darken the retained portion in the front view



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Steps Involved

- Project through the cutting points to identify where it cuts the top view

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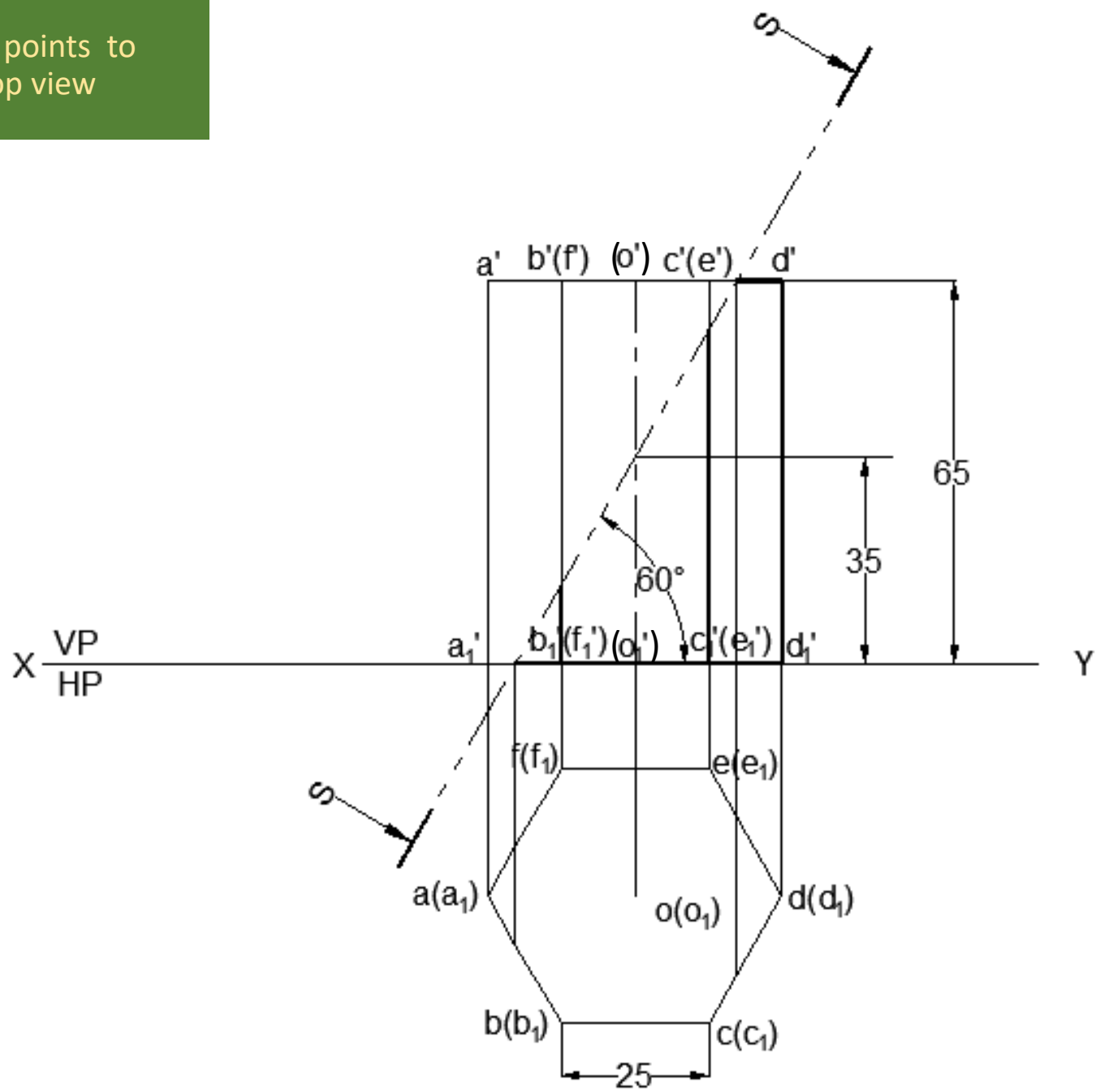

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Steps Involved

- Identify & number the cutting points
- Darken the retained portion in the top view

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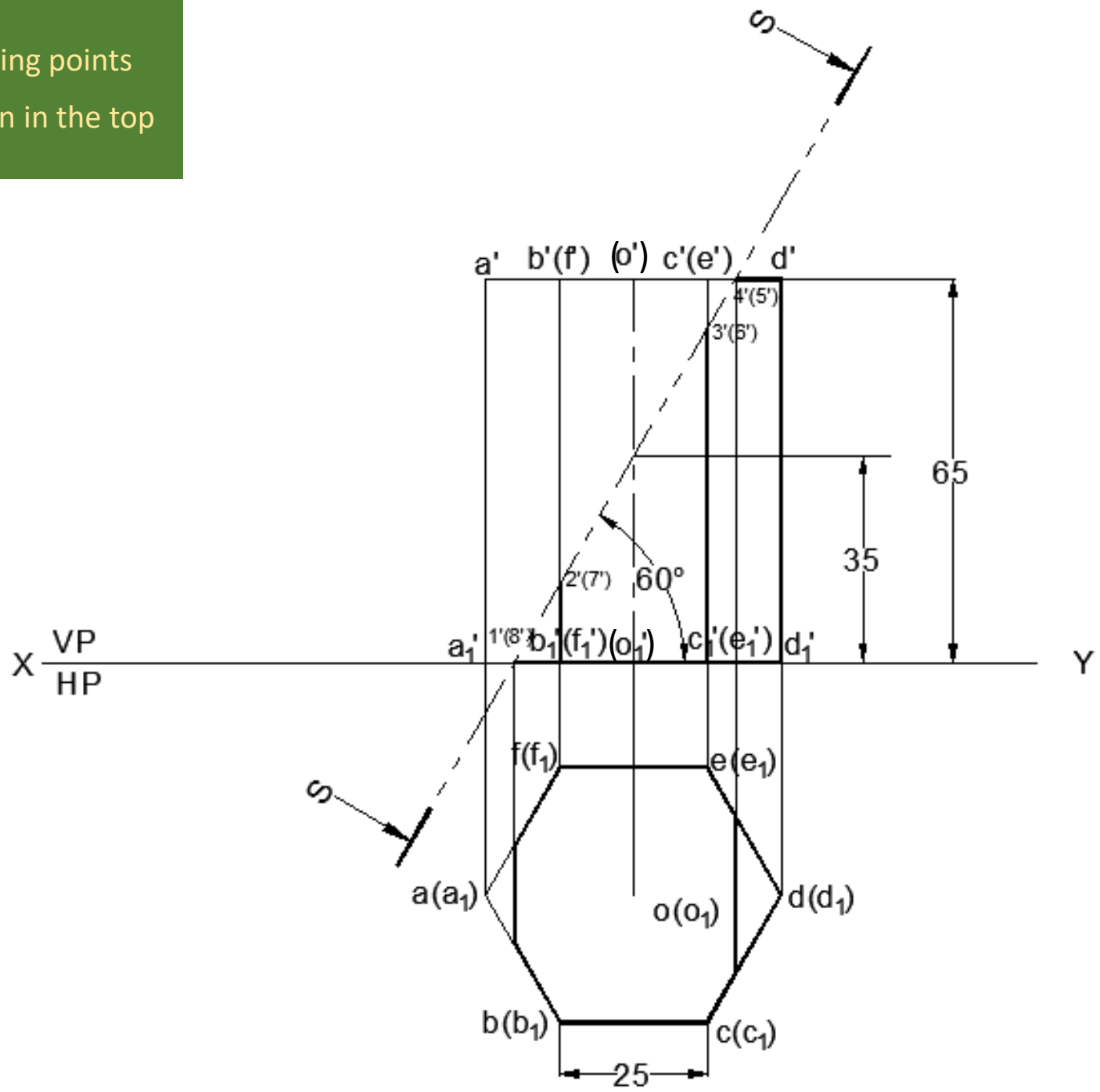

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Steps Involved

- Mark the cutting points in the Top view

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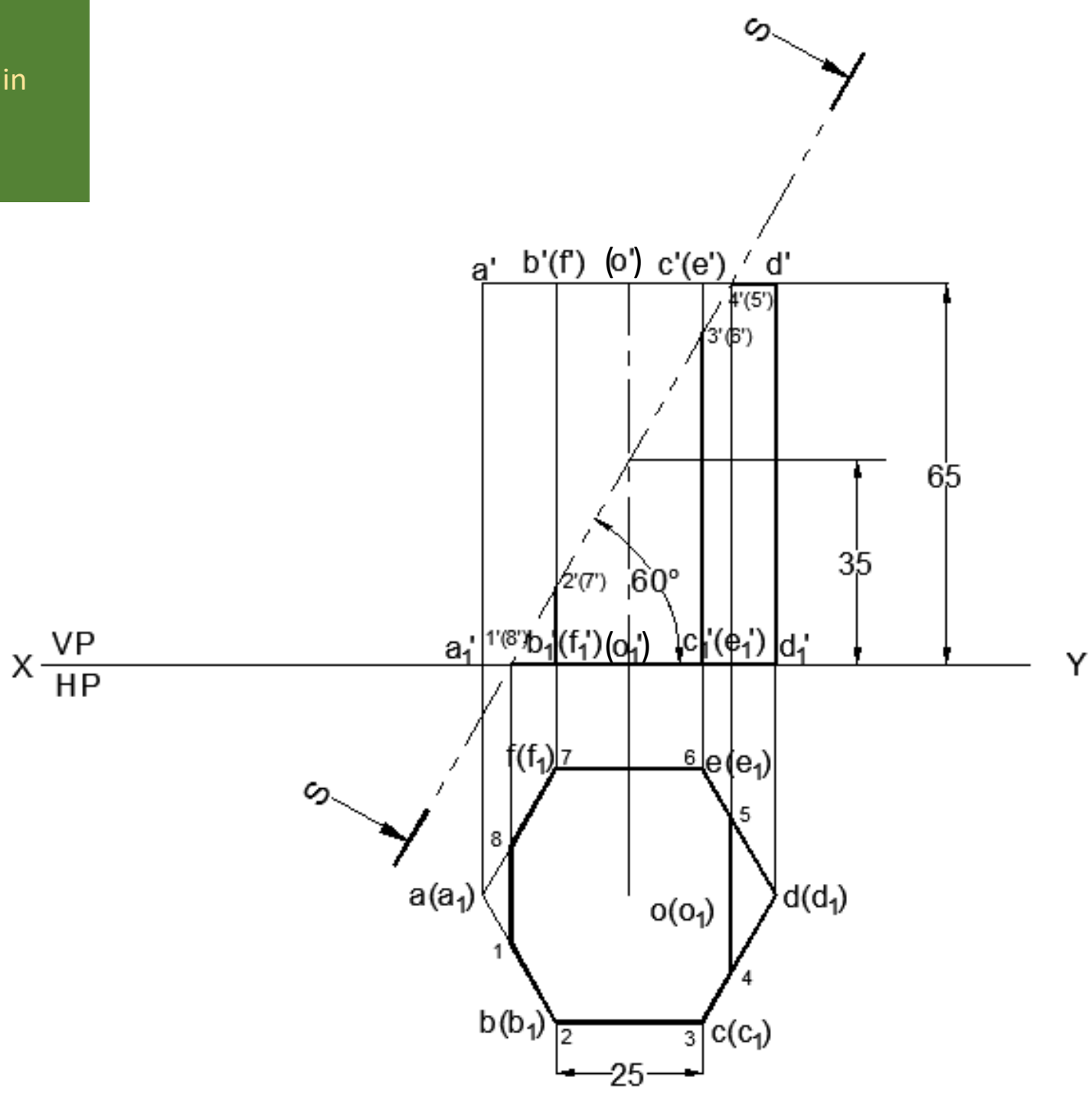

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Steps Involved

- Hatch the cut portion in the top view (at 45° to XY line)

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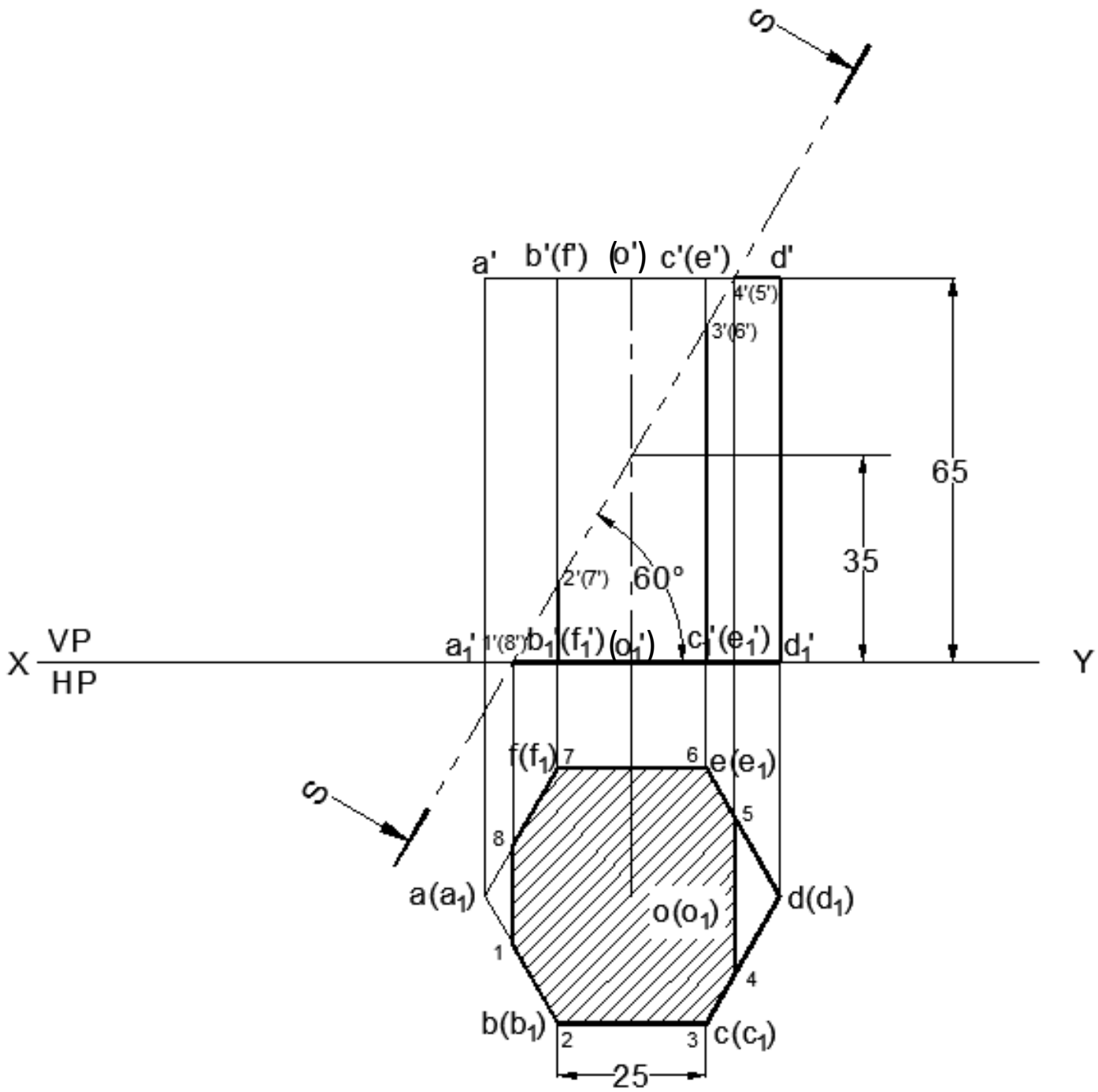

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Steps Involved

- Project perpendiculars from the cutting points
- Mark X_1Y_1 at suitable distance from section line

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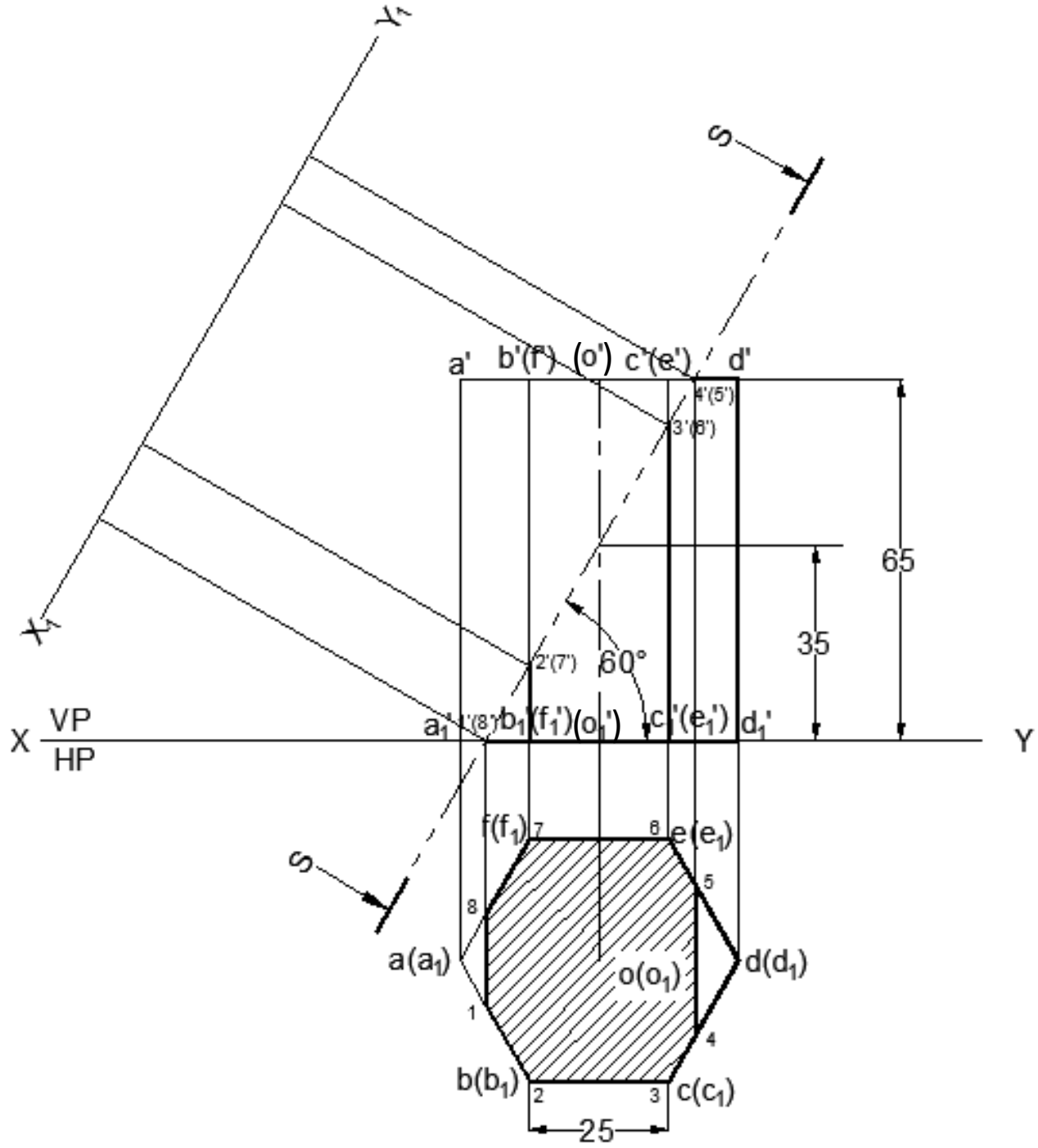

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Steps Involved

- Mark the distances (from XY line in the top view) and transfer on the extended perpendiculars (from X_1Y_1)
- Mark all the points

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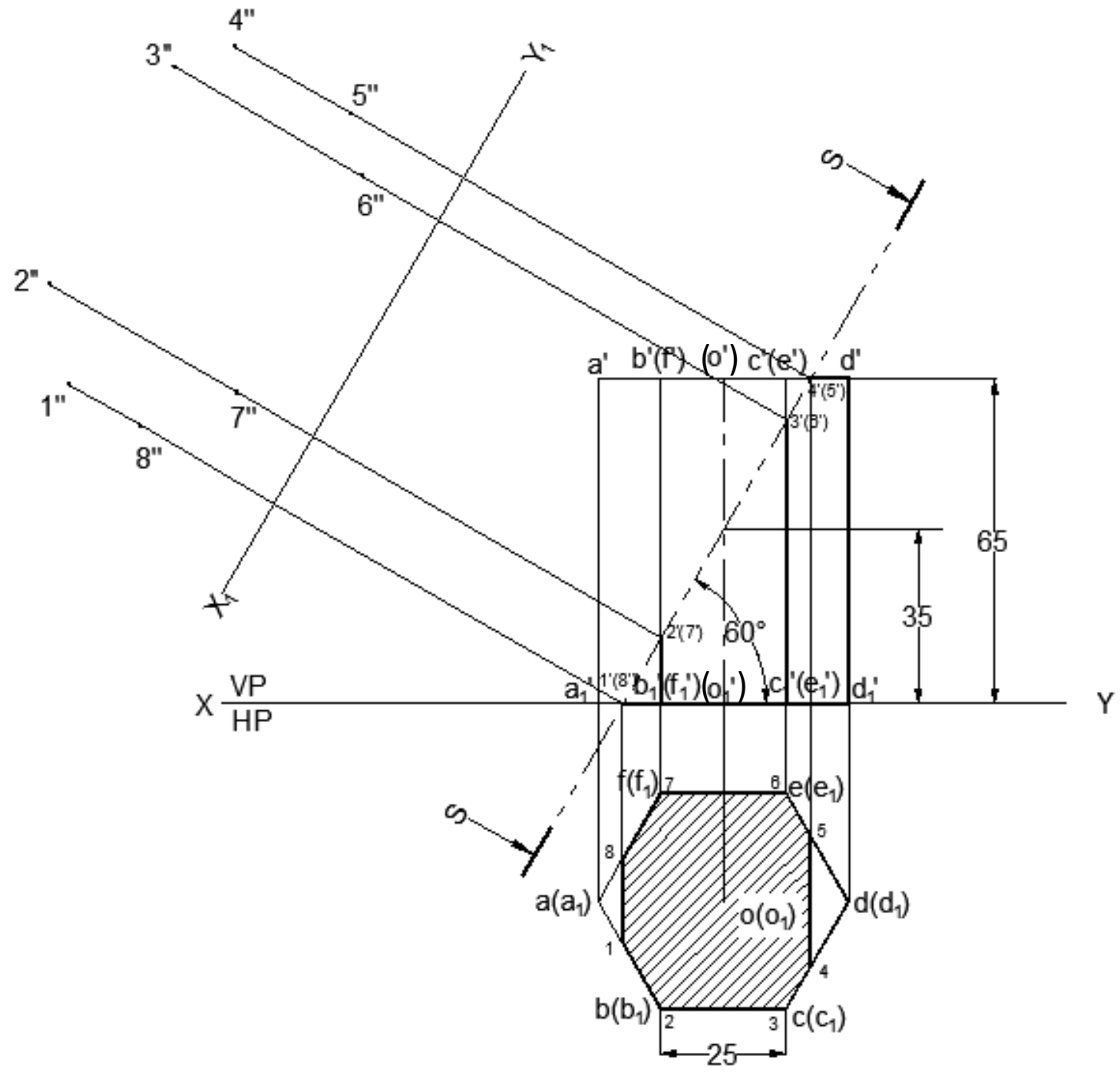

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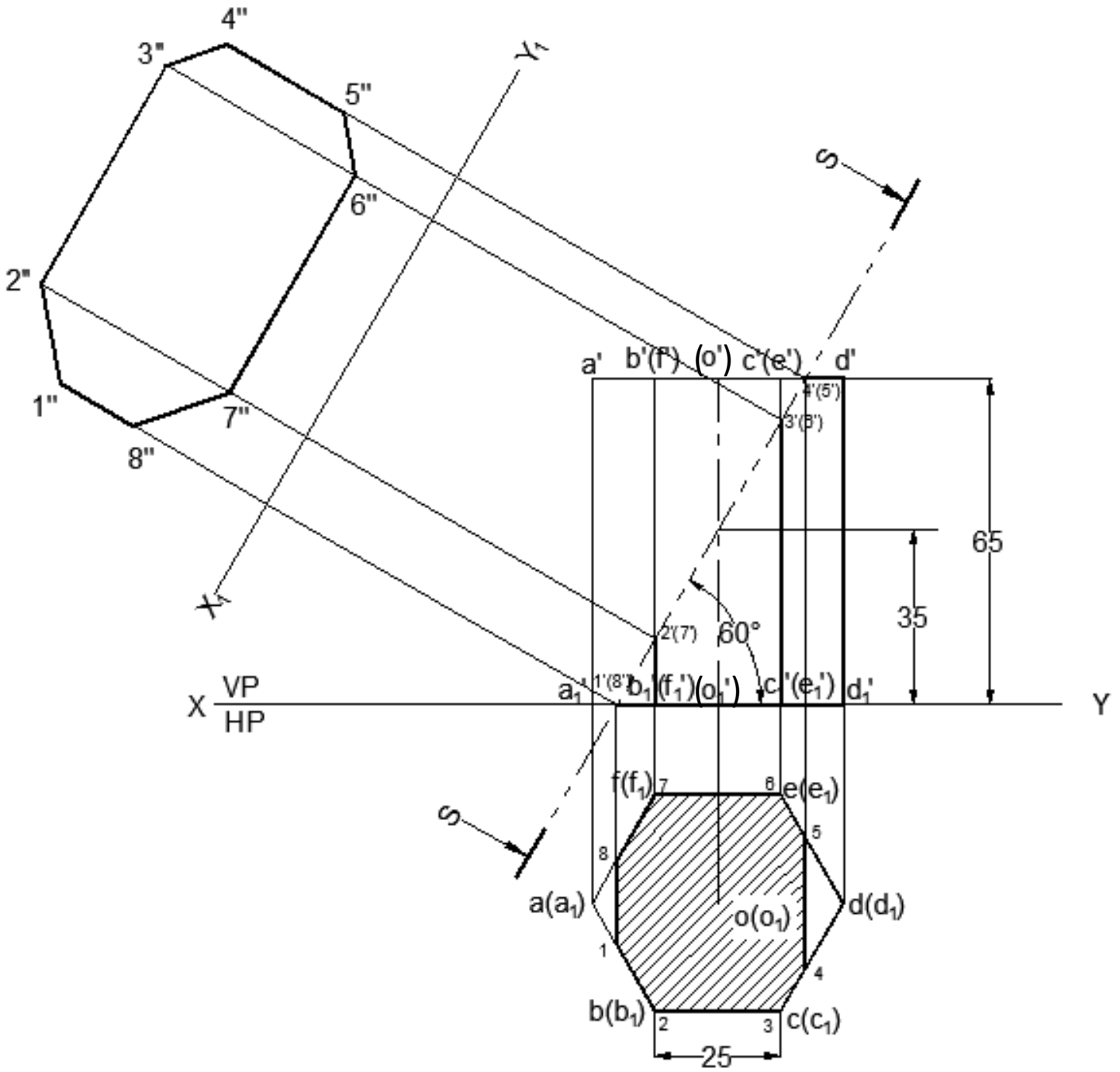
Steps Involved

- Join all points with straight lines suitably



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Steps Involved

- Hatch the true shape of section at 45° to X_1Y_1 line
- Write "TRUE SHAPE OF THE SECTION"