



CE 181103

**1st Semester
Civil & Chemical
Engg.**

M-2: Projection of Line

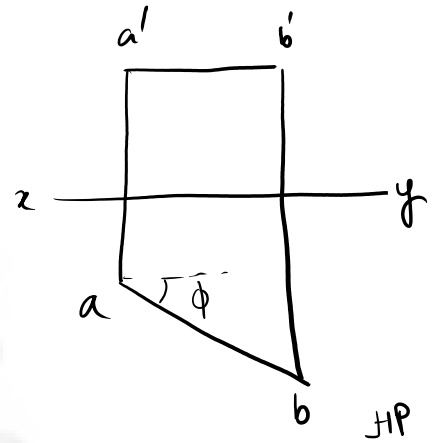
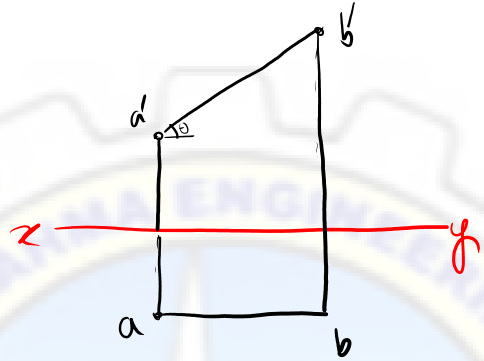
(iv) Inclined to both planes

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⊛ $\theta \rightarrow \phi$
 $\phi \rightarrow \theta$

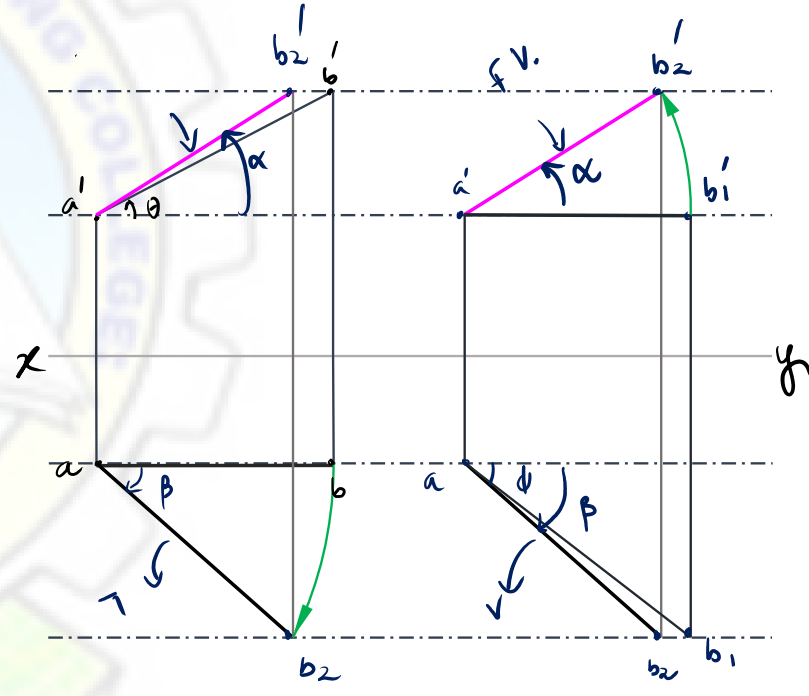
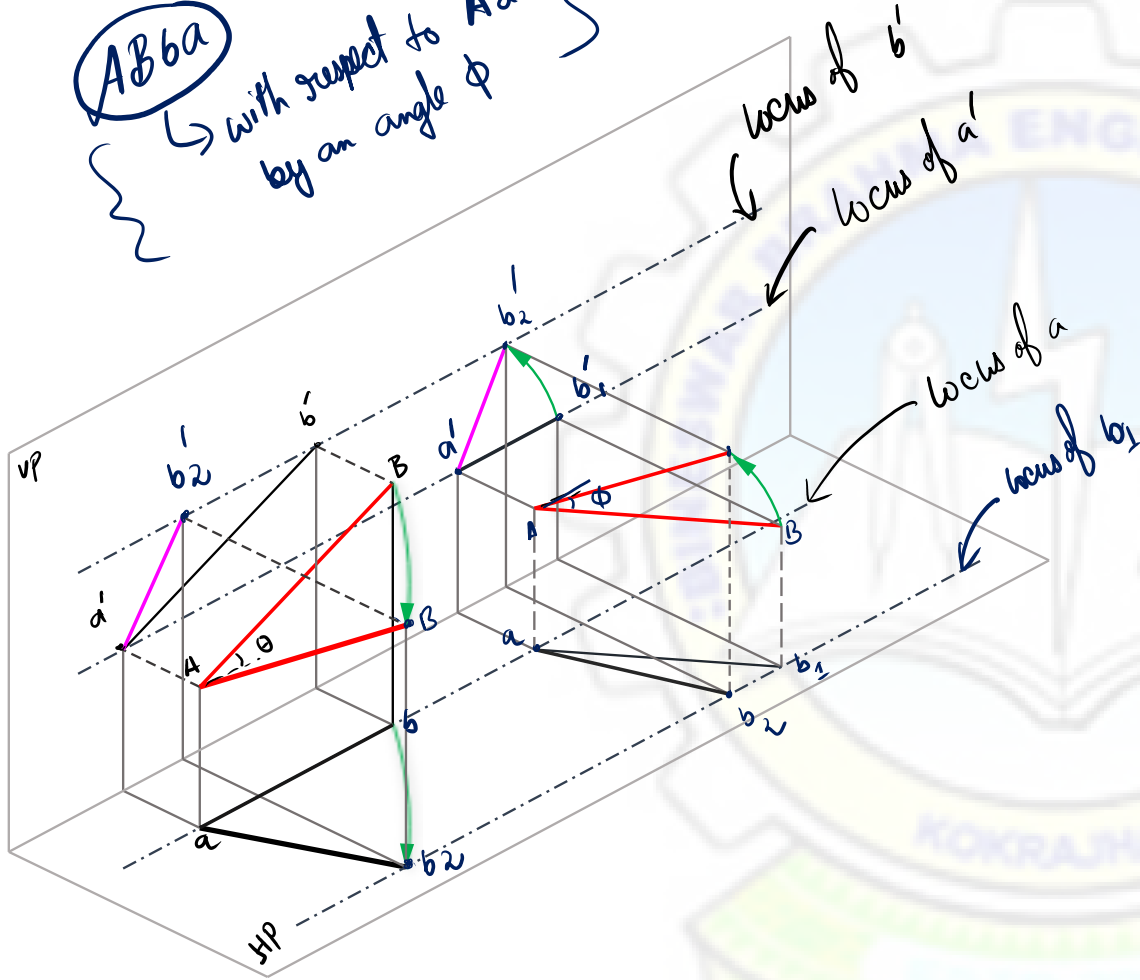
$\alpha \rightarrow$ Angle made by F.V.L. with HP

$\beta \rightarrow$ angle made by T.V.L with VP



ABba

with respect to 'Aa'
by an angle ϕ



VP

HP

$a'b'_2 \rightarrow$ Front view (length)

$a b_2 \rightarrow$ Top view (top view length)

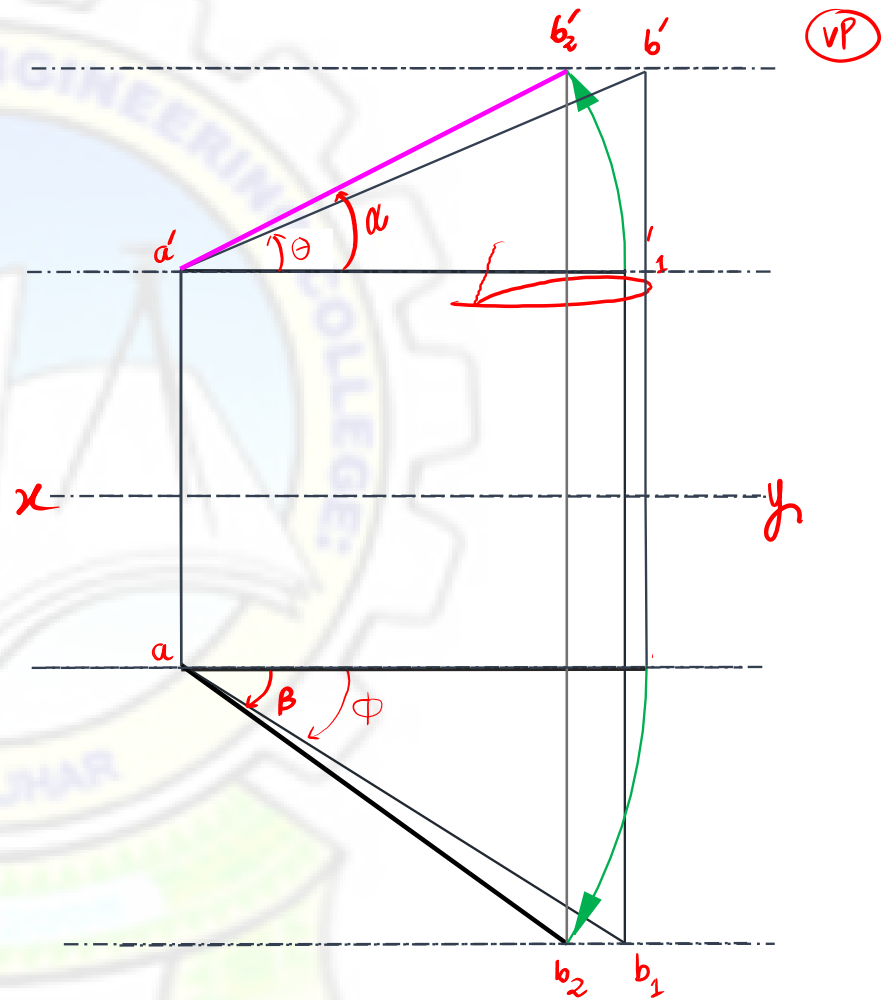
$a'b' \rightarrow$ (True length) $\rightarrow a b_1$

$\theta \rightarrow$ angle made by original line with HP

$\phi \rightarrow$ " " " " " with VP

$\alpha \rightarrow$ angle made byn F.V.L with HP

$\beta \rightarrow$ angle made by TVL with VP



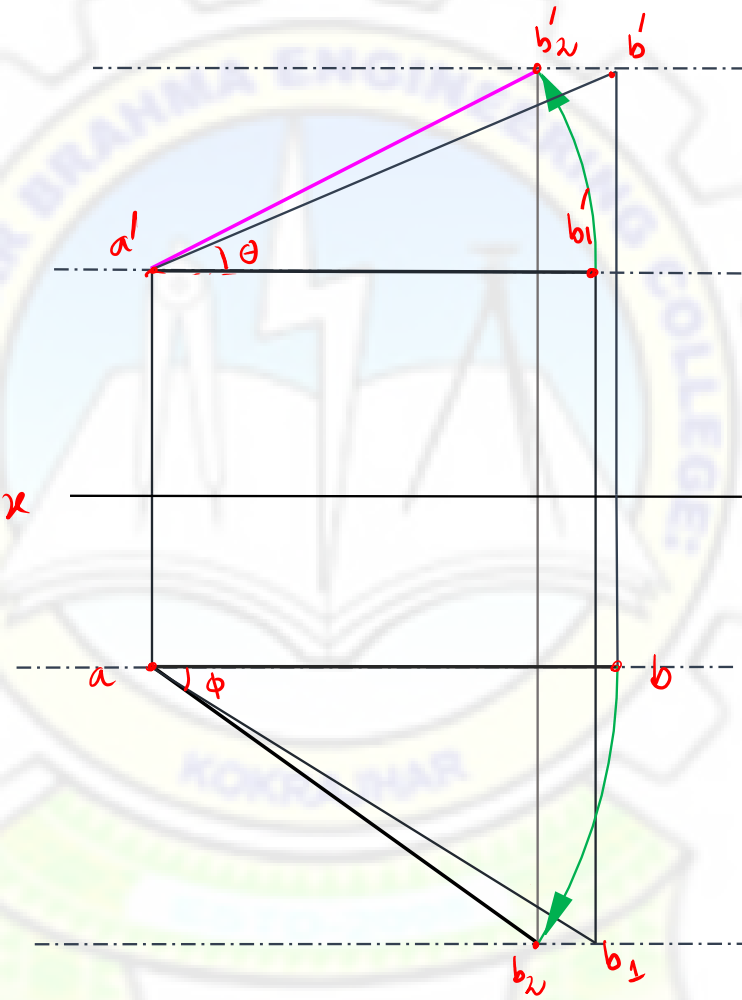
⊛ AB inclined to HP by an angle θ & VP by an angle ϕ .

↳ (1st angle projection)

$\left. \begin{matrix} a'b' \\ ab \end{matrix} \right\}$ true lengths

$a'b_2 \rightarrow$ final top view

$a'b'_2 \rightarrow$ final front view



VP

HP

Q.1) A line PQ, 70 mm long has its end P 20 mm above HP and 30 mm in front of the VP.

The line is inclined at 45° to HP and 30° to VP. Draw its projections.

$PQ \rightarrow 70 \text{ mm}$ (True length) $\left\{ = a'b' = a'b_1 \right\}$

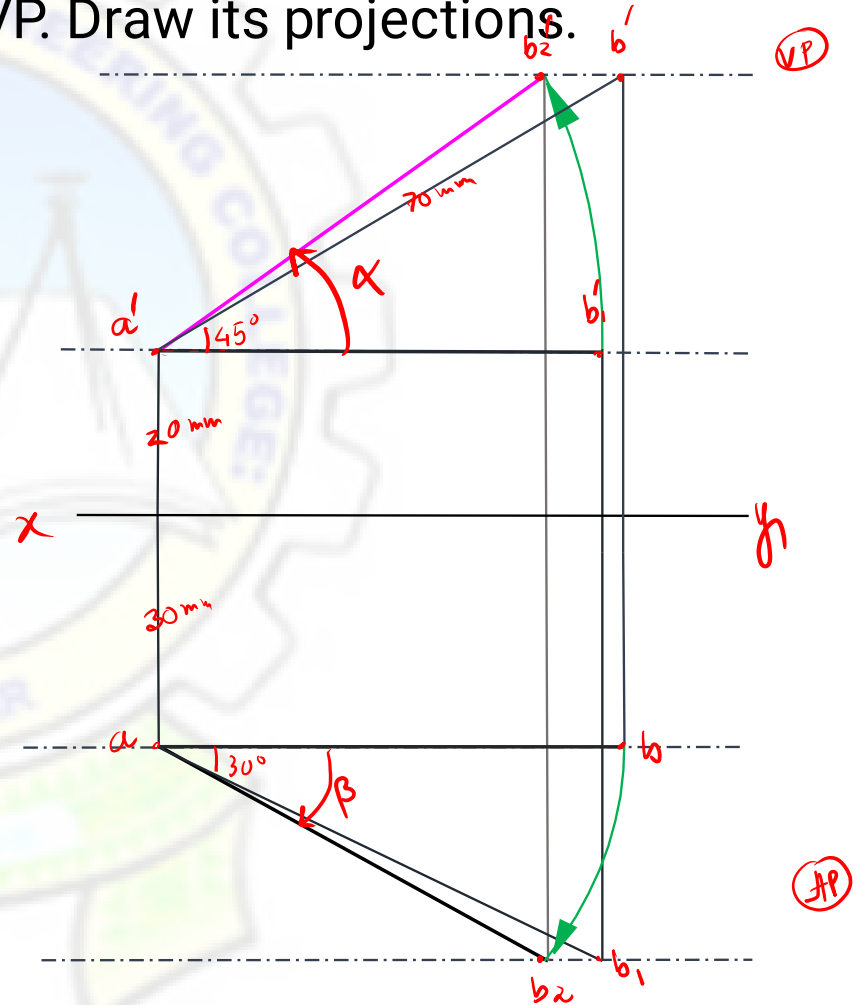
$h_p = 20 \text{ mm}$

$d_p = 30 \text{ mm}$

$\theta = 45^\circ$

$\phi = 30^\circ$

$a'b_2 \rightarrow$ final top view (Top view length)
 $a'b'_1 \rightarrow$ final front view (Front view length)





Thank You