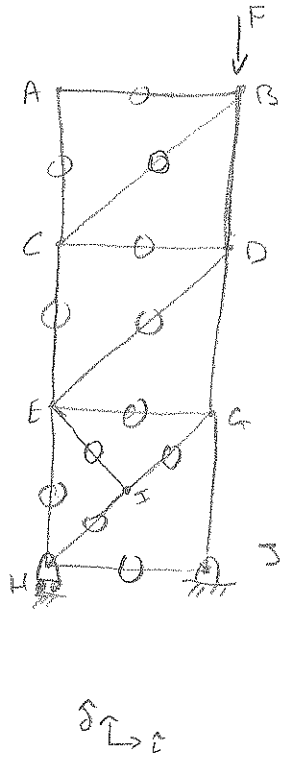


5.1.13

12 zero-force members



①  $\begin{matrix} A \\ | \\ I \end{matrix} \begin{matrix} \rightarrow T_{AB} \\ \downarrow T_{AC} \end{matrix} \quad \begin{cases} \{\Sigma \vec{F}\} \cdot \hat{e} = T_{AB} = 0 \\ \{\Sigma \vec{F}\} \cdot \hat{j} = T_{AC} = 0 \end{cases}$

②  $\begin{matrix} B \\ \swarrow T_{BC} \\ A \\ \searrow T_{BD} \end{matrix} \quad \begin{cases} \{\Sigma \vec{F}\} \cdot \hat{e} = -T_{BC} \cos \theta = 0 \\ \Rightarrow T_{BC} = 0 \end{cases}$

③  $\begin{matrix} C \\ | \\ I \end{matrix} \begin{matrix} \rightarrow T_{CD} \\ \downarrow T_{CE} \end{matrix} \quad \begin{cases} \{\Sigma \vec{F}\} \cdot \hat{e} = T_{CD} = 0 \\ \{\Sigma \vec{F}\} \cdot \hat{j} = T_{CE} = 0 \end{cases}$

④  $\begin{matrix} D \\ \uparrow T_{DE} \\ I \\ \downarrow T_{DI} \end{matrix} \quad \begin{cases} \{\Sigma \vec{F}\} \cdot \hat{e} = -T_{DE} \sin \theta = 0 \\ T_{DE} = 0 \end{cases}$

⑤  $\begin{matrix} H \\ \rightarrow T_{HI} \\ \uparrow R_H \end{matrix} \quad \{\Sigma \vec{F}\} \cdot \hat{e} = T_{HI} = 0$

⑥  $\begin{matrix} E \\ \swarrow T_{EI} \\ I \\ \searrow T_{IE} \end{matrix} \quad \begin{cases} \{\Sigma \vec{F}\} \cdot \hat{e}_2 = T_{EI} = 0 \\ \vec{e}_1, \vec{e}_2 \end{cases}$

⑦  $\begin{matrix} E \\ | \\ I \end{matrix} \begin{matrix} \rightarrow T_{EI} \\ \downarrow T_{EH} \end{matrix} \quad \begin{cases} \{\Sigma \vec{F}\} \cdot \hat{e} = T_{EI} = 0 \\ \{\Sigma \vec{F}\} \cdot \hat{j} = T_{EH} = 0 \end{cases}$

⑧  $\begin{matrix} G \\ \uparrow T_{GI} \\ I \\ \downarrow T_{IG} \end{matrix} \quad \begin{cases} \{\Sigma \vec{F}\} \cdot \hat{e} = -T_{GI} \cos \theta = 0 \\ \Rightarrow T_{GI} = 0 \end{cases}$

⑨  $\begin{matrix} I \\ \swarrow T_{HI} \\ H \end{matrix} \quad \begin{cases} \{\Sigma \vec{F}\} \cdot \hat{e}_1 = -T_{HI} = 0 \\ \Rightarrow T_{HI} = 0 \end{cases}$