

(Correction)

VW-6

As $b_0, b_1, c_0, c_1 = 0$ (due to B.C. at $x=0$)

$$\Rightarrow u_N(x) = \sum_{j=2}^N b_j \Phi_j(x); \quad w_N(x) = \sum_{j=2}^N c_j \Phi_j(x)$$

\uparrow (N-1) terms \uparrow (N-1) terms

RENAME AS: $d_{2j-1} = b_{j+1}; \quad d_{2j} = c_{j+1}, \quad j=1, 2, \dots, (N-1)$

Thus $\delta d_{2j-1} = \delta b_{j+1}; \quad \delta d_{2j} = \delta c_{j+1}$

and

$$\bar{K}_{(2i-1), (2j-1)} = \int_0^L EI_{zz} \Phi_{j+1,xx} \Phi_{i+1,xx} dx$$

$$\bar{K}_{(2i-1), (2j)} = \int_0^L EI_{yz} \Phi_{j+1,xx} \Phi_{i+1,xx} dx$$

$$\bar{K}_{(2i), (2j-1)} = \bar{K}_{(2i-1), (2j)}$$

$$\bar{K}_{(2i), (2j)} = \int_0^L EI_{yy} \Phi_{j+1,xx} \Phi_{i+1,xx} dx$$

$$\bar{F}_{2i-1} = \int_0^L q_y \Phi_{i+1} dx; \quad \bar{F}_{2i} = \int_0^L q_z \Phi_{i+1} dx$$

and $\boxed{[\bar{K}]\{d\} = \{\bar{F}\}} \quad \text{--- (B2)}$

$$[\bar{K}] \rightarrow \tilde{N} \times \tilde{N}; \quad \{d\} \rightarrow \tilde{N} \times 1; \quad \{\bar{F}\} = \tilde{N} \times 1$$

$$\text{with } \tilde{N} = N-1$$