

$$w_1 = [+1] \quad w_{2N} = \begin{bmatrix} w_N & \overline{w_N} \\ w_N & \overline{w_N} \end{bmatrix}$$

$$2 \text{ station} = w_2 = \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$$

$$\therefore C_1 = 1 \ 1, \ C_2 = 1 \ -1 \quad \text{A}$$

$$\begin{aligned} 4 \text{ station} = w_4 = w_{2(2)} &= \begin{bmatrix} w_2 & \overline{w_2} \\ w_2 & \overline{w_2} \end{bmatrix} \\ &= \begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & -1 & 1 & -1 \\ 1 & 1 & -1 & -1 \\ 1 & -1 & -1 & 1 \end{bmatrix} \end{aligned}$$

$$\therefore C_1 = 1 \ 1 \ 1 \ 1, \ C_2 = 1 \ -1 \ 1 \ -1, \ C_3 = 1 \ 1 \ -1 \ -1, \ C_4 = 1 \ -1 \ -1 \ 1 \quad \text{A}$$