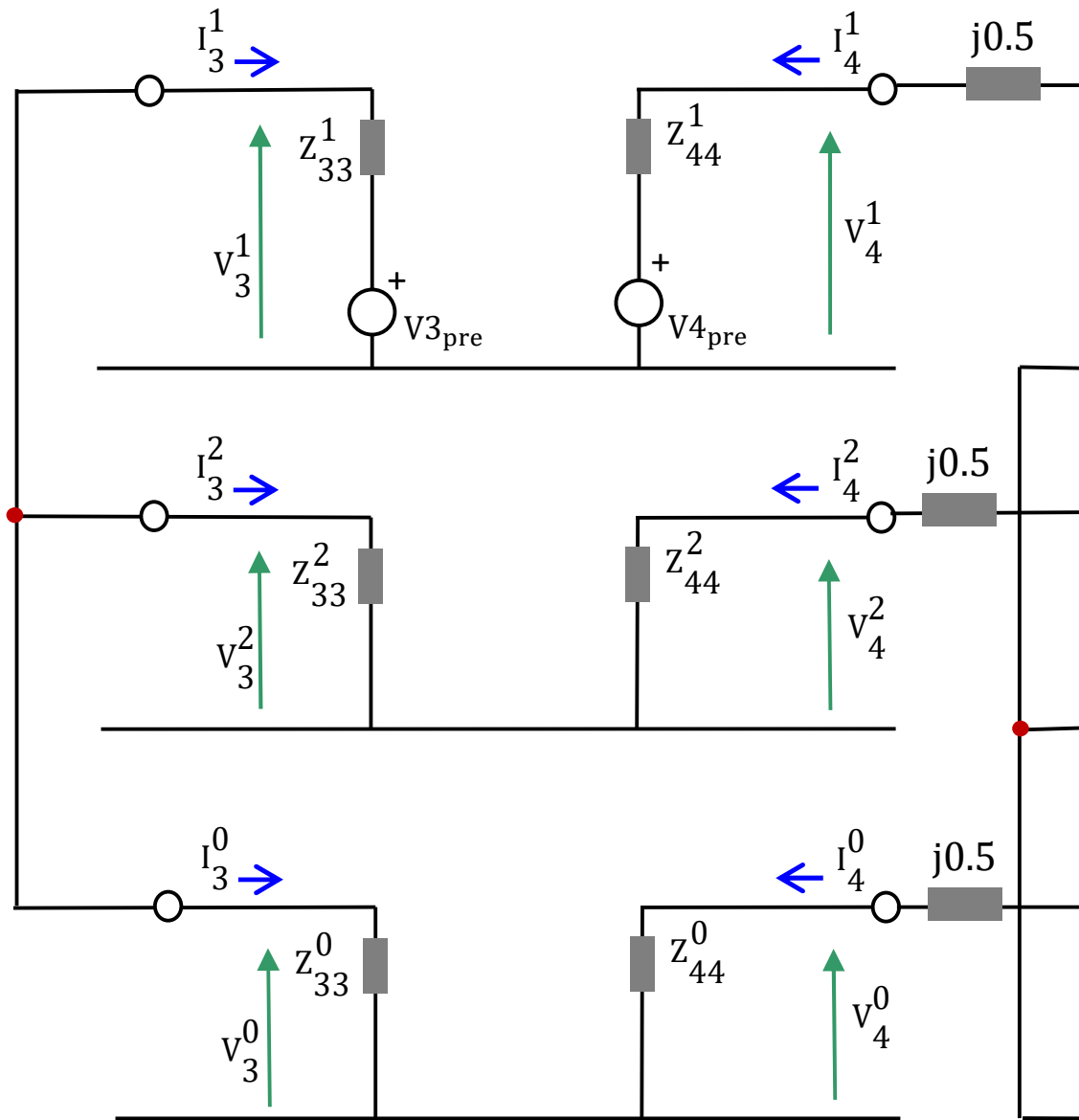The circuit with my chosen variable names.

Equations

$$-V3_{\text{pre}} - Z_{33}^1 I_3^1 + V_3^1 = 0 \qquad\qquad -V4_{\text{pre}} - Z_{44}^1 I_4^1 + V_4^1 = 0$$

$$-Z_{33}^2 I_3^2 + V_3^2 = 0 \qquad\qquad -Z_{44}^2 I_4^2 + V_4^2 = 0$$

$$-Z_{33}^0 I_3^0 + V_3^0 = 0 \qquad\qquad -Z_{44}^0 I_4^0 + V_4^0 = 0$$

$$-I_3^2 z_{33}^2 + I_3^0 z_{33}^0 - I_4^0 (z_{44}^0 + 0.5j) + I_4^2 (z_{44}^2 + 0.5j) = 0$$

$$V_3^1 - V_4^1 - I_4^1 (0.5\text{j}) = V_3^2 - V_4^2 - I_4^2 (0.5\text{j})$$

$$V_3^1 - V_4^1 - I_4^1 (0.5\text{j}) = V_3^0 - V_4^0 - I_4^0 (0.5\text{j})$$

$$I_4^1 + I_3^1 = 0$$

$$I_4^2 + I_3^2 = 0$$

$$I_4^0 + I_3^0 = 0$$

Here I have simplified it with actual values and I let the second voltage source be zero. With these values I get no solution and A is singular.