Suppose $\alpha = \begin{pmatrix} m & \overline{a} \\ 0 & \overline{n} \end{pmatrix}$ is not a left 0-divisor. Then m must be odd, for otherwise $\begin{pmatrix} m & \overline{a} \\ 0 & \overline{n} \end{pmatrix}$ is right annihilated by $\begin{pmatrix} 0 & \overline{1} \\ 0 & 0 \end{pmatrix}$. In addition, we must have $\overline{n} = \overline{1}$, for otherwise $\overline{n} = 0$, and α would be right annihilated by $\begin{pmatrix} 0 & \overline{a} \\ 0 & \overline{1} \end{pmatrix}$ since $m\overline{a} + \overline{a} \in 2\mathbb{Z} \cdot \overline{a} = 0$. But then α is also not a right 0-divisor, for

$$0 = \begin{pmatrix} x & \overline{z} \\ 0 & \overline{y} \end{pmatrix} \begin{pmatrix} 2 & 0 \\ 0 & \overline{1} \end{pmatrix} = \begin{pmatrix} 2x & \overline{z} \\ 0 & \overline{y} \end{pmatrix} \Rightarrow x = 0,\ \overline{y} = \overline{z} = 0$$