

$$\begin{array}{ccccccc}
 \dots & \longrightarrow & R(X^k) \oplus R(X^{k-1}) & \xrightarrow{\begin{pmatrix} 0 & 1 \\ 0 & 0 \end{pmatrix}} & R(X^{k+1}) \oplus R(X^k) & \longrightarrow & \dots \\
 & & \downarrow p_{X^k} \circ (1_{R(X^k)}, R(d^{k-1})) & & \downarrow p_{X^{k+1}} \circ (1_{R(X^{k+1})}, R(d^k)) & & \\
 \dots & \longrightarrow & X^k & \xrightarrow{d^k} & X^{k+1} & \longrightarrow & \dots
 \end{array}$$