$$\begin{array}{c|cccc}
\mathbf{C}_1 & \xrightarrow{f_1} & \mathbf{D}_1 \\
F \downarrow \mathbf{Cat} & \mathbf{Cat} \uparrow G & \mathbf{C}_1 & \xrightarrow{f_1} & \mathbf{D}_1 \\
\mathbf{C}_2 & \xrightarrow{\mathbf{Cat}} & \mathbf{D}_2 & F ; H \downarrow \mathbf{Cat} & \mathbf{Cat} \uparrow I ; G \\
H \downarrow \mathbf{Cat} & \mathbf{Cat} \uparrow I & \mathbf{C}_3 & \xrightarrow{\mathbf{Cat}} & \mathbf{D}_3 \\
\mathbf{C}_3 & \xrightarrow{f_2} & \mathbf{D}_3
\end{array}$$