we discuss it in detail. We compute

$$
\begin{aligned}
&T_{\mathfrak{Z}_B,\mathfrak{Z}_C,\mathfrak{Z}_D}(w,u,v)\times_w C^{(1,0;AB^{-1})}_{\mathfrak{Z}_B}(w)\\
&=(q;q)(p;p)\oint\frac{\mathrm{d}w}{4\pi i w}\frac{\prod_{j=1}^{8}\Gamma_e\big((qp)^{\frac12}\frac1t a_j^{-1}w^{\pm1}\big)}{\Gamma\big(w^{\pm2}\big)}C^{(1,0;AB^{-1})}_{\mathfrak{Z}_B}(w)T_{\mathfrak{Z}_B,\mathfrak{Z}_C,\mathfrak{Z}_D}(w,u,v)\\
&\sim\oint\frac{\mathrm{d}w}{4\pi i w}\frac{\prod_{j=1}^{8}\Gamma_e\big((qp)^{\frac12}\frac1t a_j^{-1}w^{\pm1}\big)}{\Gamma\big(w^{\pm2}\big)}\prod_{j=1}^{8}\Gamma_e\big((pq)^{\frac12}ta_jw^{\pm1}\big)\Gamma_e\left(\frac{(pq)^{\frac12}qw^{\pm1}}{tAB^{-1}}\right)\\
&\times\Gamma_e\left(\frac{AB^{-1}w^{\pm1}}{(pq)^{\frac12}qt^3}\right)\Gamma_e\big((qp)^{\frac12}t\big(B^{-1}A\big)^{\pm1}w^{\pm1}\big)\Gamma_e\left(\frac{qp}{t^2}\right)\oint\frac{\mathrm{d}y}{4\pi i y}\frac{\Gamma_e\big(\frac{(pq)^{\frac12}}{t^2}\big(AB^{-1}\big)^{\pm1}y^{\pm1}\big)}{\Gamma_e\big(y^{\pm2}\big)}\\
&\times\Gamma_e\big(ty^{\pm1}w^{\pm1}\big)\oint\frac{\mathrm{d}w_1}{4\pi i w_1}\oint\frac{\mathrm{d}w_2}{4\pi i w_2}\frac{\Gamma_e\big(\frac{(pq)^{\frac12}}{t^2}w_1^{\pm1}w_2^{\pm1}\big)}{\Gamma_e\big(w_2^{\pm2}\big)\Gamma_e\big(w_1^{\pm2}\big)}\Gamma_e\big((qp)^{\frac14}tA^{\frac12}B^{-\frac12}y^{\frac12}w_1^{\pm1}u^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((qp)^{\frac14}A^{\frac12}B^{\frac12}y^{-\frac12}w_1^{\pm1}D^{\pm1}\big)\Gamma_e\big((qp)^{\frac14}tA^{-\frac12}B^{\frac12}y^{-\frac12}w_2^{\pm1}u^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((qp)^{\frac14}A^{-\frac12}B^{-\frac12}y^{\frac12}D^{\pm1}w_2^{\pm1}\big)\Gamma_e\big((qp)^{\frac14}tA^{-\frac12}B^{\frac12}y^{\frac12}w_1^{\pm1}v^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((qp)^{\frac14}A^{-\frac12}B^{-\frac12}y^{-\frac12}C^{\pm1}w_1^{\pm1}\big)\Gamma_e\big((qp)^{\frac14}tA^{\frac12}B^{-\frac12}y^{-\frac12}w_2^{\pm1}v^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((qp)^{\frac14}A^{\frac12}B^{\frac12}y^{\frac12}w_2^{\pm1}C^{\pm1}\big),
\end{aligned}
$$

where $\sim$ means equality up to overall factors independent of w, u, v. Using the identity $\Gamma_e\big(\frac{pq}{z}\big)\Gamma_e(z)=1$ and the elliptic beta integral formula we evaluate the integral over w and up to overall factors we get

$$
\begin{aligned}
&\Gamma_e\big(pq^2\big)\oint\frac{\mathrm{d}y}{4\pi i y}\frac{\Gamma_e\big((pq)^{\frac12}qA^{-1}By^{\pm1}\big)\Gamma_e\big((pq)^{-\frac12}q^{-1}t^{-2}AB^{-1}y^{\pm1}\big)}{\Gamma_e\big(y^{\pm2}\big)}\oint\frac{\mathrm{d}w_1}{4\pi i w_1}\oint\frac{\mathrm{d}w_2}{4\pi i w_2}\\
&\times\frac{\Gamma_e\big(\frac{(pq)^{\frac12}}{t^2}w_1^{\pm1}w_2^{\pm1}\big)}{\Gamma_e\big(w_2^{\pm2}\big)\Gamma_e\big(w_1^{\pm2}\big)}\Gamma_e\big((qp)^{\frac14}tA^{\frac12}B^{-\frac12}y^{\frac12}w_1^{\pm1}u^{\pm1}\big)\Gamma_e\big((qp)^{\frac14}A^{\frac12}B^{\frac12}y^{-\frac12}w_1^{\pm1}D^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((qp)^{\frac14}tA^{-\frac12}B^{\frac12}y^{-\frac12}w_2^{\pm1}u^{\pm1}\big)\Gamma_e\big((qp)^{\frac14}A^{-\frac12}B^{-\frac12}y^{\frac12}D^{\pm1}w_2^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((qp)^{\frac14}tA^{-\frac12}B^{\frac12}y^{\frac12}w_1^{\pm1}v^{\pm1}\big)\Gamma_e\big((qp)^{\frac14}A^{-\frac12}B^{-\frac12}y^{-\frac12}C^{\pm1}w_1^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((qp)^{\frac14}tA^{\frac12}B^{-\frac12}y^{-\frac12}w_2^{\pm1}v^{\pm1}\big)\Gamma_e\big((qp)^{\frac14}A^{\frac12}B^{\frac12}y^{\frac12}w_2^{\pm1}C^{\pm1}\big).
\end{aligned}
\tag{1}
$$

We got a zero multiplying the integral, but we will see next that some of the integrals are pinched giving finite result. We start by evaluating the integral over y using the residue theorem and we get that the integral over w_1 is pinched due to $\Gamma_e\big((qp)^{\frac14}tA^{-\frac12}B^{\frac12}y^{\frac12}w_1^{\pm1}v^{\pm1}\big)$ term for the poles