Cheat Sheet CU and QU

Our Algebras. Let $sl_{2+}^{\epsilon} := L\langle y,b,a,x\rangle$ subject to $[a,x]=x$, $[b,y]=-\epsilon y$, $[a,b]=0$, $[a,y]=-y$, $[b,x]=\epsilon x$, and $[x,y]=\epsilon a+b$. So $t:=\epsilon a-b$ is central and if $\exists\epsilon^{-1}$, $sl_{2+}^{\epsilon}/\langle t\rangle\cong sl_2$. Indeed if ϵ is invertible, the map

$$\phi_\epsilon\colon sl_{2+}^{\epsilon}\to sl_{2+}^{1},\quad (y,b,a,x)\mapsto(\epsilon y,\epsilon b,a,x),$$

is an isomorphism of Lie algebras, and $sl_{2+}^{1}/\langle t\rangle\cong sl_{2+}^{1}/(a=b)\cong L\langle y,a,x\rangle/([a,x]=x,[a,y]=-y,[x,y]=2a)\cong sl_2$.
U is either $CU=\mathcal{U}(sl_{2+}^{\epsilon})[\![\hbar]\!]$ or $QU=\mathcal{U}_\hbar(sl_{2+}^{\epsilon})=A\langle y,b,a,x\rangle[\![\hbar]\!]$ with $[a,x]=x$, $[b,y]=-\epsilon y$, $[a,b]=0$, $[a,y]=-y$, $[b,x]=\epsilon x$, and $xy-qyx=(1-AB)/\hbar$, where $q=\mathbb{e}^{\hbar\epsilon}$, $A=\mathbb{e}^{-\hbar\epsilon a}$, and $B=\mathbb{e}^{-\hbar b}$. Set also $T=A^{-1}B=\mathbb{e}^{\hbar t}$.
The Quantum Leap. Also decree that in QU,

$$\Delta(y,b,a,x)=(y_1+B_1y_2,b_1+b_2,a_1+a_2,x_1+A_1x_2),$$

$$S(y,b,a,x)=(-B^{-1}y,-b,-a,-A^{-1}x),$$

and $R=\sum\hbar^{j+k}y^kb^j\otimes a^jx^k/j![k]_q!=1+\hbar r+O(\hbar^2)$, where $r=y\otimes x+b\otimes a$ satisfies CYBE, $[r_{12},r_{13}]+[r_{12},r_{23}]+[r_{13},r_{23}]=0$. ϕ_ϵ extends to QU with $\phi_\epsilon(\hbar)=\hbar/\epsilon$ and R is ϕ_ϵ-invariant.
The s,t Alternative. With $s=\epsilon a+b$ (and $t=\epsilon a-b$), we have that sl_{2+}^{ϵ} is

$$L\langle t,y,s,x\rangle/([t,\cdot]=0,\ [s,x]=2\epsilon x,\ [s,y]=-2\epsilon y,\ [x,y]=s)\ ,$$

with $r=y\otimes x+(s-t)\otimes(s+t)/4\epsilon\sim y\otimes x+(s\otimes s+s\otimes t-t\otimes s)/4\epsilon$.
The d,t Alternative. With $d=s/\epsilon$, this becomes

$$L\langle t,y,d,x\rangle/([t,\cdot]=0,\ [d,x]=2x,\ [d,y]=-2y,\ [x,y]=\epsilon d)\ ,$$

with $r\sim y\otimes x+(\epsilon d\otimes d+d\otimes t-t\otimes d)/4$.