where $\mathbb{A}$, $\mathbb{B}$ and $\mathbb{C}$ are

$$\begin{aligned}
\mathbb{A} = & \, ig^{N-2}\left(-\frac{\kappa}{2}\right)^2 \frac{\langle 1i\rangle^4}{\langle 12\rangle\langle 23\rangle...\langle N1\rangle} \\
& \times \sum_{l\in\{g^+\}} s_{N+1,N+2}s_{l,N+1}\frac{\langle 1l\rangle}{\langle 1,N+1\rangle\langle N+1,l\rangle}\frac{\langle li\rangle}{\langle l,N+1\rangle\langle N+1,i\rangle} \\
& \times \frac{\langle 1,N+1\rangle}{\langle 1,N+2\rangle\langle N+2,N+1\rangle}\frac{\langle N+1,i\rangle}{\langle N+1,N+2\rangle\langle N+2,i\rangle},
\end{aligned} \tag{23}$$

$$\begin{aligned}
\mathbb{B} = & \, ig^{N-2}\left(-\frac{\kappa}{2}\right)^2 \frac{\langle 1i\rangle^4}{\langle 12\rangle\langle 23\rangle...\langle N1\rangle} \\
& \times \sum_{l\in\{g^+\}} s_{N+2,N+1}s_{l,N+2}\frac{\langle 1l\rangle}{\langle 1,N+2\rangle\langle N+2,l\rangle}\frac{\langle li\rangle}{\langle l,N+2\rangle\langle N+2,i\rangle} \\
& \times \frac{\langle 1,N+2\rangle}{\langle 1,N+1\rangle\langle N+1,N+2\rangle}\frac{\langle N+2,i\rangle}{\langle N+2,N+1\rangle\langle N+1,i\rangle},
\end{aligned} \tag{24}$$

$$\begin{aligned}
\mathbb{C} = & \, ig^{N-2}\left(-\frac{\kappa}{2}\right)^2 \frac{\langle 1i\rangle^4}{\langle 12\rangle\langle 23\rangle...\langle N1\rangle} \\
& \times \sum_{l\in\{g^+\}} s_{l,N+2}\frac{\langle l1\rangle}{\langle N+2,1\rangle\langle l,N+2\rangle}\frac{\langle li\rangle}{\langle l,N+2\rangle\langle N+2,i\rangle} \\
& \times \sum_{k\in\{g^+\}} s_{k,N+1}\frac{\langle k1\rangle}{\langle N+1,1\rangle\langle l,N+1\rangle}\frac{\langle ki\rangle}{\langle k,N+1\rangle\langle N+1,i\rangle}.
\end{aligned} \tag{25}$$

We first look at $\mathbb{A}$ part. $\frac{\langle 1l\rangle}{\langle 1,N+1\rangle\langle N+1,l\rangle}$ and $\frac{\langle li\rangle}{\langle l,N+1\rangle\langle N+1,i\rangle}$ can split into sums of terms as in (18) and (19). For a given l, as in $M=1$ case, they insert the two gluons corresponding to the graviton $(N+1)_h$ into positions between 1, l and l, i respectively. After this insertion, we consider the insertion of gluons corresponding to $(N+2)_h$. With the eikonal identity(A9), for $1<l<i$, $\frac{\langle 1,N+1\rangle}{\langle 1,N+2\rangle\langle N+2,N+1\rangle}$ and $\frac{\langle N+1,i\rangle}{\langle N+1,N+2\rangle\langle N+2,i\rangle}$ in (23) can be given as

$$\begin{aligned}
\frac{\langle 1,N+1\rangle}{\langle 1,N+2\rangle\langle N+2,N+1\rangle} &= \left(\frac{\langle 1,r\rangle}{\langle 1,N+2\rangle\langle N+2,r\rangle}+\frac{\langle r,N+1\rangle}{\langle r,N+2\rangle\langle N+2,N+1\rangle}\right), \\
\frac{\langle N+1,i\rangle}{\langle N+1,N+2\rangle\langle N+2,i\rangle} &= \left(\frac{\langle t+1,i\rangle}{\langle t+1,N+2\rangle\langle N+2,i\rangle}+\frac{\langle N+1,t+1\rangle}{\langle N+1,N+2\rangle\langle N+2,t+1\rangle}\right),
\end{aligned} \tag{26}$$