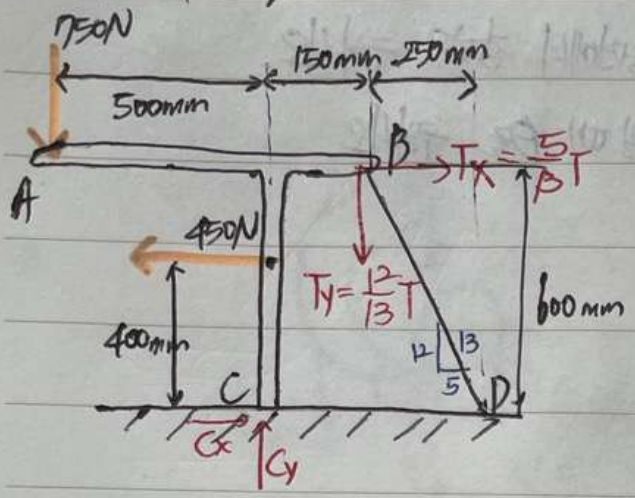
<예제 4.47>



C에 작용하는 힘이 100N·m를 초과하지 않는 선에서 케이블 BD에 작용하는 장력의 크기를 구하시오.

$$+\circlearrowleft \sum M_C = 0 : (750N)(0.15m) + (450N)(0.4m) - \left(\frac{5}{13}T\right)(0.6m) - \left(\frac{12}{13}T\right)(0.15m) + M_C = 0$$

$$375N\cdot m + 180N\cdot m - \left(\frac{4.8}{13}m\right)T + M_C = 0$$

$$T = \frac{13}{4.8}(555 + M_C)$$

$M_C = -100N\cdot m$: $T = \frac{13}{4.8}(555 - 100) = 1232N$

$M_C = +100N\cdot m$: $T = \frac{13}{4.8}(555 + 100) = 1774N$

$\therefore |M_C| \le 100N\cdot m$: $1.232kN \le T \le 1.774kN$