page 47, lines -9 to -8

Proof that $\beta_q - 1_q - \sum_j (-1)^j \partial_{j\#} L_q$ is a cycle.

Details: By the formula at the top of p. 47 we have $d\beta_q = \sum' (-1)^k \partial_{k\#} \beta_{q-1}$, so

$$d(\beta_q - 1_q) = \sum_k' (-1)^k \partial_{k\#} (\beta_{q-1} - 1_{q-1})$$

and by the induction hypothesis this equals

$$\sum_k' (-1)^k \partial_{k\#} \left(L_q + \sum' (-1)^j \partial_{j\#} L_{q-1} \right) =$$

$$\sum_k' (-1)^k \partial_{k\#} L_q + \sum_{k,j}' (-1)^{j+k} \partial_{k\#} \partial_{j\#} L_{q-1}$$

$\uparrow$

This is zero by the usual identity $\sum' (-1)^{j+k} \partial_{k\#} \partial_{j\#} = 0$

Therefore d_q sends (Left Hand Side) $-$ (Right Hand Side) to zero, which is what we wanted to prove.