It was guessed that the General restricted horse numbers (strong ordering on variables $x1,x2,x3\dots xk$) is the form $B'(k) = s(k,k)H(n) + s(k,k-1)H(n - 1) + s(k, k-1)H(n - 2)\dots s(k,1)H(n - k + 1)$ where $s(a,b)$ are the signed Stirling numbers.

This may be proven by assuming the following:

The translation operator $\exp(d/dn)$, $\exp(d/dn)H(n) = H(n + 1)$

Then build the problem as a counting problem, first remove the k variables that are strongly ordered

$e^{(-(k-1)d/dn)}H(n)$

Then add them back one at a time, which is just increasing the number of variables, but also, need to subtract out any choice where the added variable is equal to one of the k variables, which if m variables are already added back, is just an additive constant -m multiplied on the possible number of configurations without that variable,

$(e^{d/dn} - 1)\, e^{(-(k-1)d/dn)}H(n)$ [k = 2]
$(e^{d/dn} - 2)(e^{d/dn} - 1)\, e^{(-(k-1)d/dn)}H(n)$ [k = 3]
$(e^{d/dn} - 3)(e^{d/dn} - 2)(e^{d/dn} - 1)\, e^{(-(k-1)d/dn)}H(n)$ [k = 4]

The form of the polynomials $(x - 1)(x - 2)(x - 3)\dots(x - m)$ is the generating polynomial for the Stirling Numbers of the first kind, so letting $x^K \sim H(n + k)$ [via translation operator], the formula

$B'(k,n) = s(k,k)H(n) + s(k,k-1)H(n - 1) + s(k, k-1)H(n - 2)\dots s(k,1)H(n - k + 1)$

Is recovered, if one wants a specific ordering, say $x1 < x3 < x4\dots < xk$
Just divide by k! Or Bill number $k! * B(k, n) = B'(k,n)$. Note the primed B!