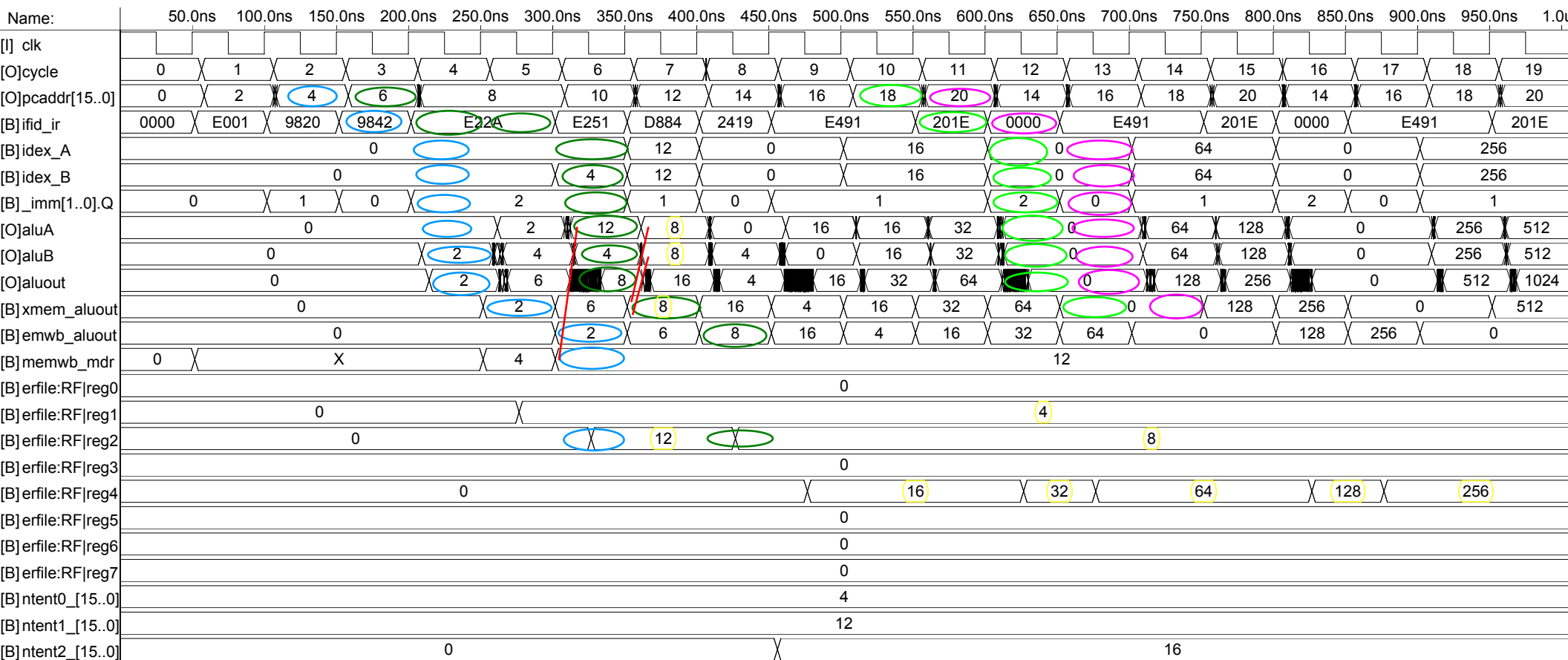




Stages (IF ID EX MEM WB) of four instructions highlighted

2. LW \$2, 0(\$0) # \$2 = 12

3. SUB \$2, \$2, \$1 # \$2 = 8

9. BEQ \$0, \$0, -3 (taken)

10. SUB \$4, \$4, \$4 (flushed)

Notes:

This impl. is with early branch decision at ID stage

The red line shows some forwardings

The first SUB is stalled for one cycle

The second SUB is fetched then flushed

You may want to show more variables when debugging