Inputs: north_approach        - alarm start
        south_approach        - 10s then barrier down
        north_depart          - alarm continue & barrier down
        south_depart            while train present
        timer_elapsed         - no train then barrier up
                              - after 10s alarm off



north_approach ∨ south_approach / start_alarm

Idle

north_ap ∨ south_ap    Wait for alarm_elapsed

timer_elapsed / barrier_down

Wait elapsed 2 train

timer_elapsed / barrier_s

north_app ∨ south_app
①

Wait 2 train pass

Wait for train pass

north_dep ∨ south_dep

north_ap ∨ south_ap / barrier_up    — down

Wait 10 sec

north_dep ∨ south_dep / barrier_up

timer ≥ 10 / alarm_off

timer += 1
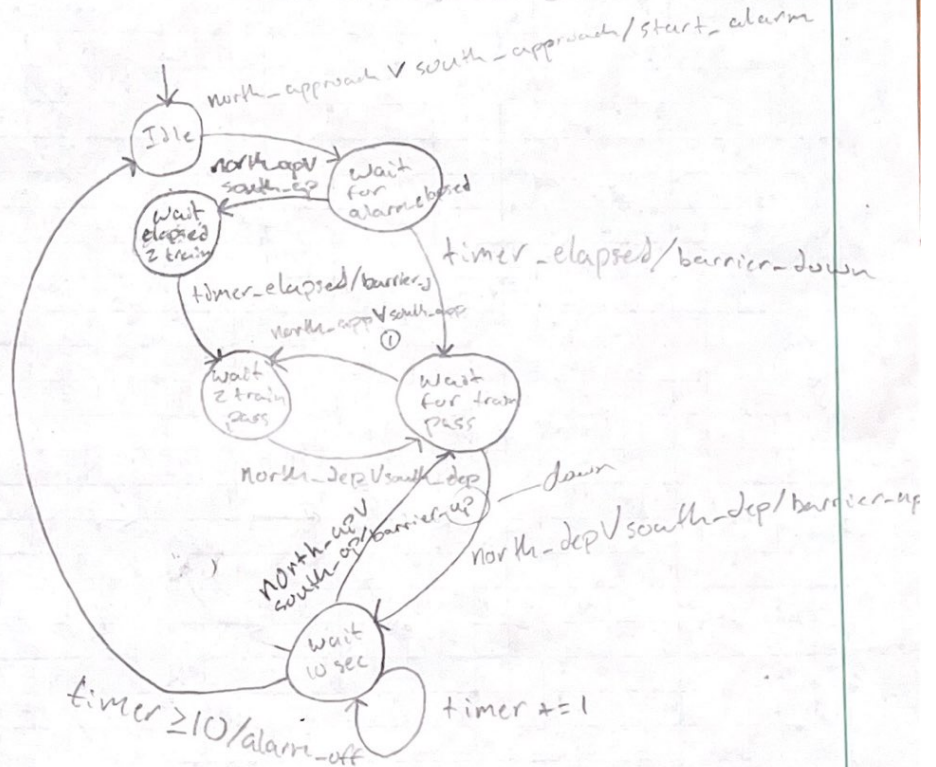
## Counter example

① if NBA ∨ SBA 2 times the system will fault (barriers need 'stay in barrier down)

② if a train pass approach never in the [wait 10 sec (states)] needs to go to
   [wait for alarm_elapsed [state)]

• power (assumption)