

3. If you have to redraw any of the vehicle trajectories, how does this relate to the four interrelated steps in the traffic control process diagram that is first described in Chapter 1?

INFORMATION

traffic control process diagrams are presented for eight different cases. For each of these cases you are given the trajectories of one or more vehicles approaching and traveling through the intersection as well as the values for three timing parameters: the minimum green time, the passage time, and the maximum green time. For four of the cases, the detection zone for the active phase is six feet; for the other four cases, the length of the zone is 40 feet. One of the most important concepts in completing a traffic control process diagram is to note (as we first did in Chapter 1) the interrelationships of each of the components:

- The user is detected
- The detector sends this information to the controller
- The controller (through timing processes and control logic) determines the appropriate display
- The user responds to the display

TASKS

Notes:

- (1) You may have to redraw the vehicle trajectories in response to changes in the display status.
- (2) The status of the detector for a conflicting phase is given: there is an active call on a conflicting phase when the area is hatched; there is no active call when the area is blank.

TASK 1

Complete the detector responses, timer responses, and signal display responses for each of the eight cases that follow. The conditions for each case are shown in the lower right of each figure. Assume that the green time begins at $t = 3$ and that yellow time = 3 seconds and red clearance time = 1 second.

TASK 2

Record the unused green time and the percentage of vehicles that are served for each of the eight cases.

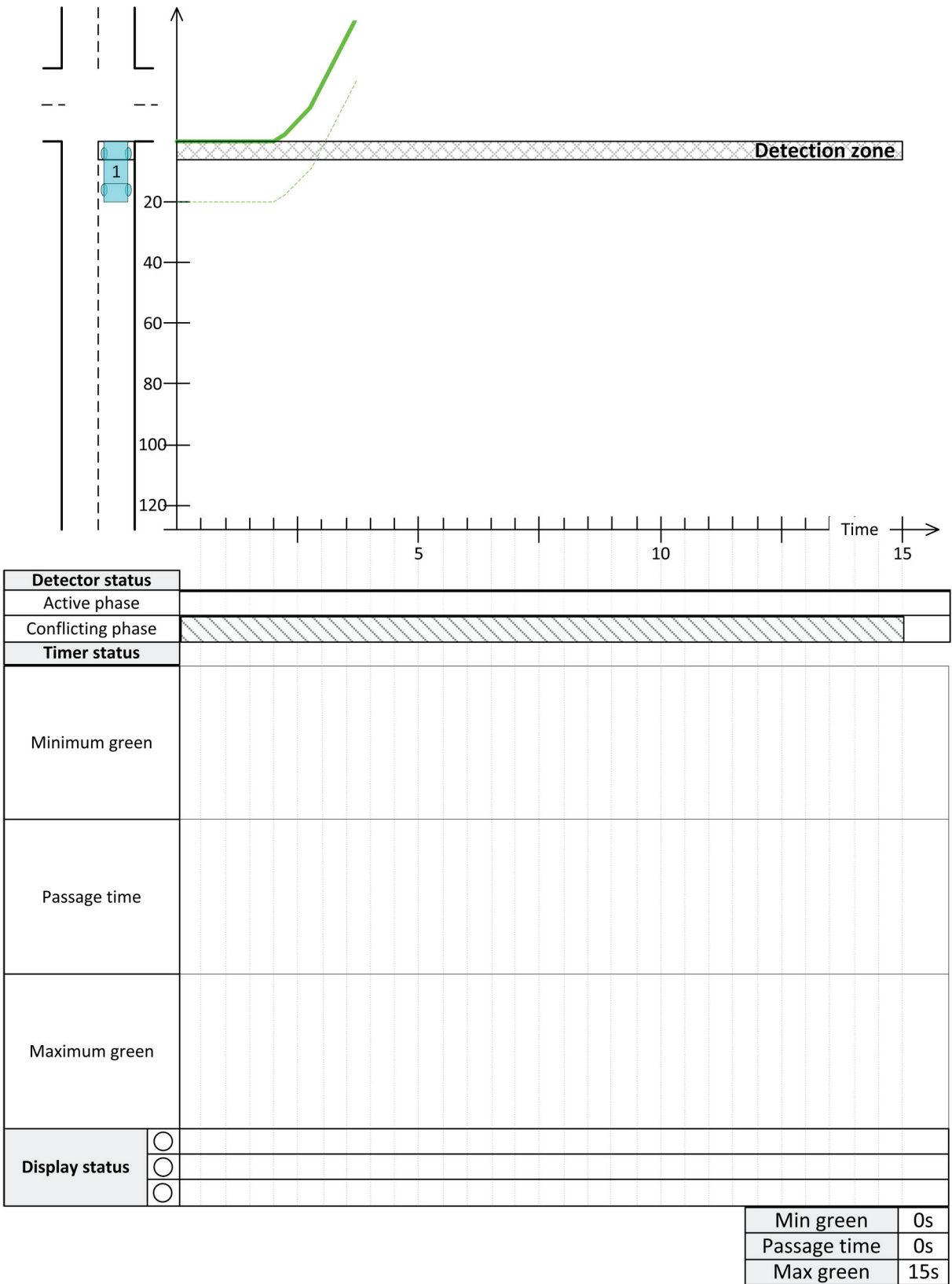


Figure 87. Traffic control process diagram - Case 1

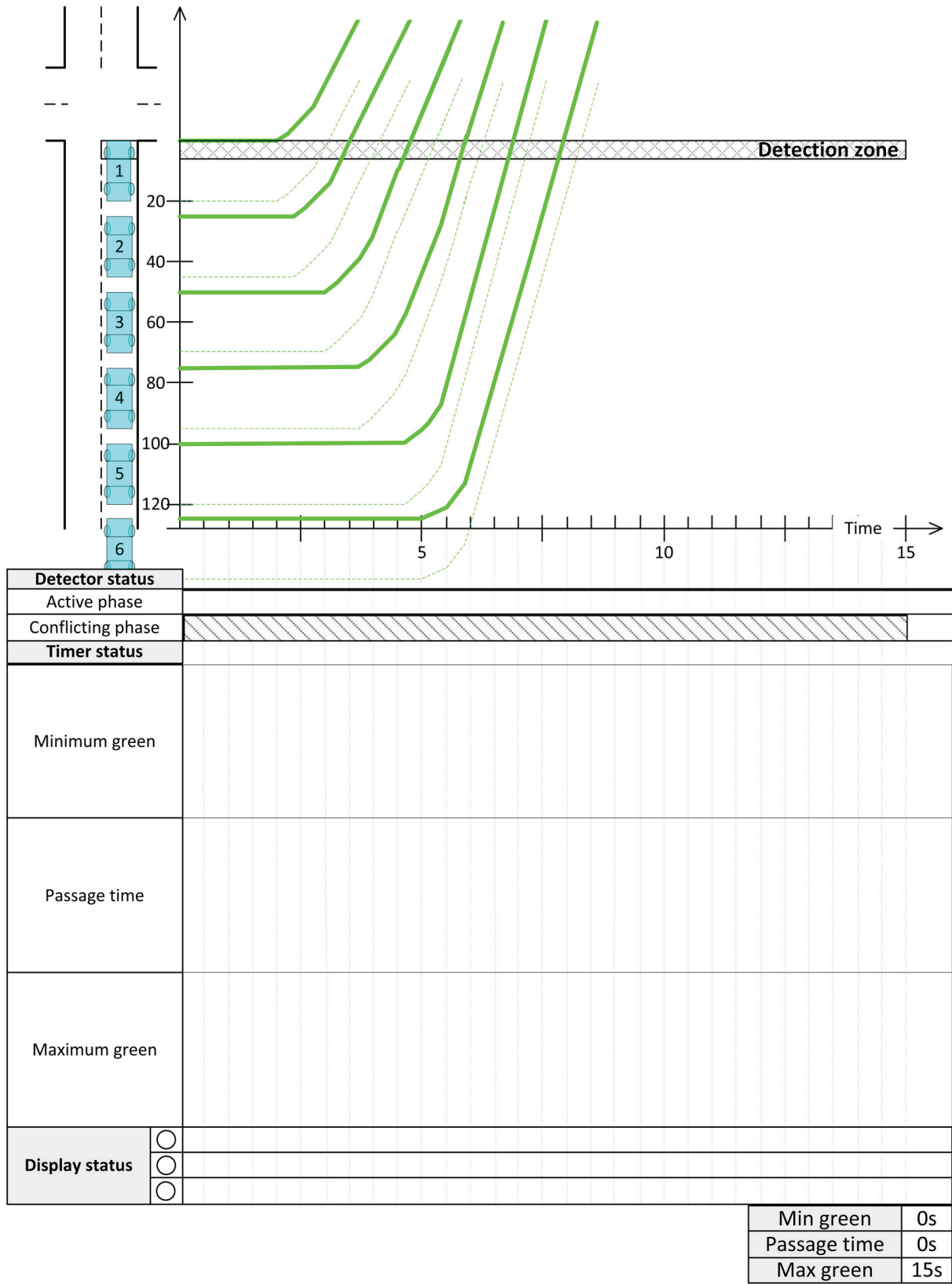


Figure 88. Traffic control process diagram - Case 2

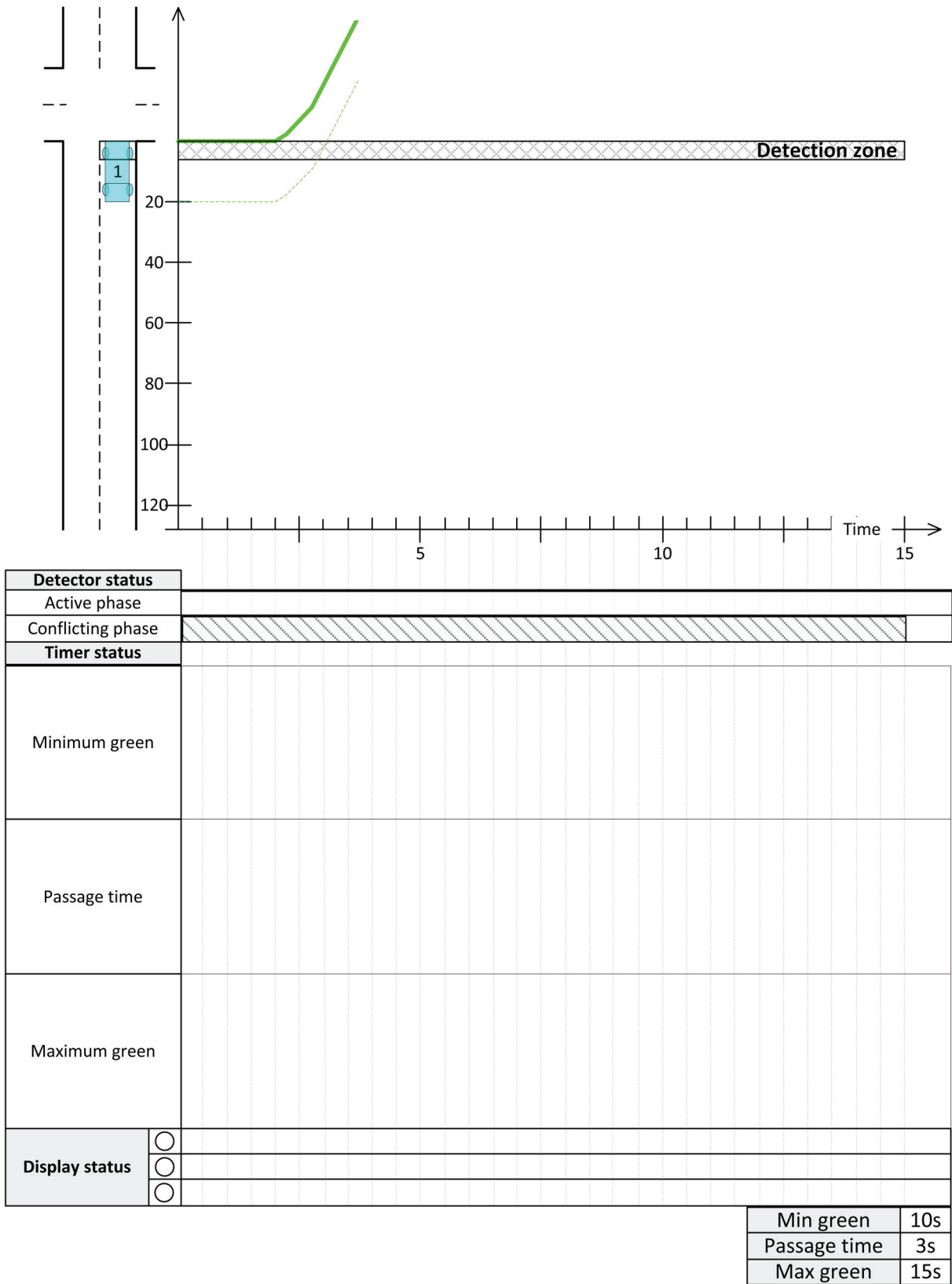


Figure 89. Traffic control process diagram - Case 3

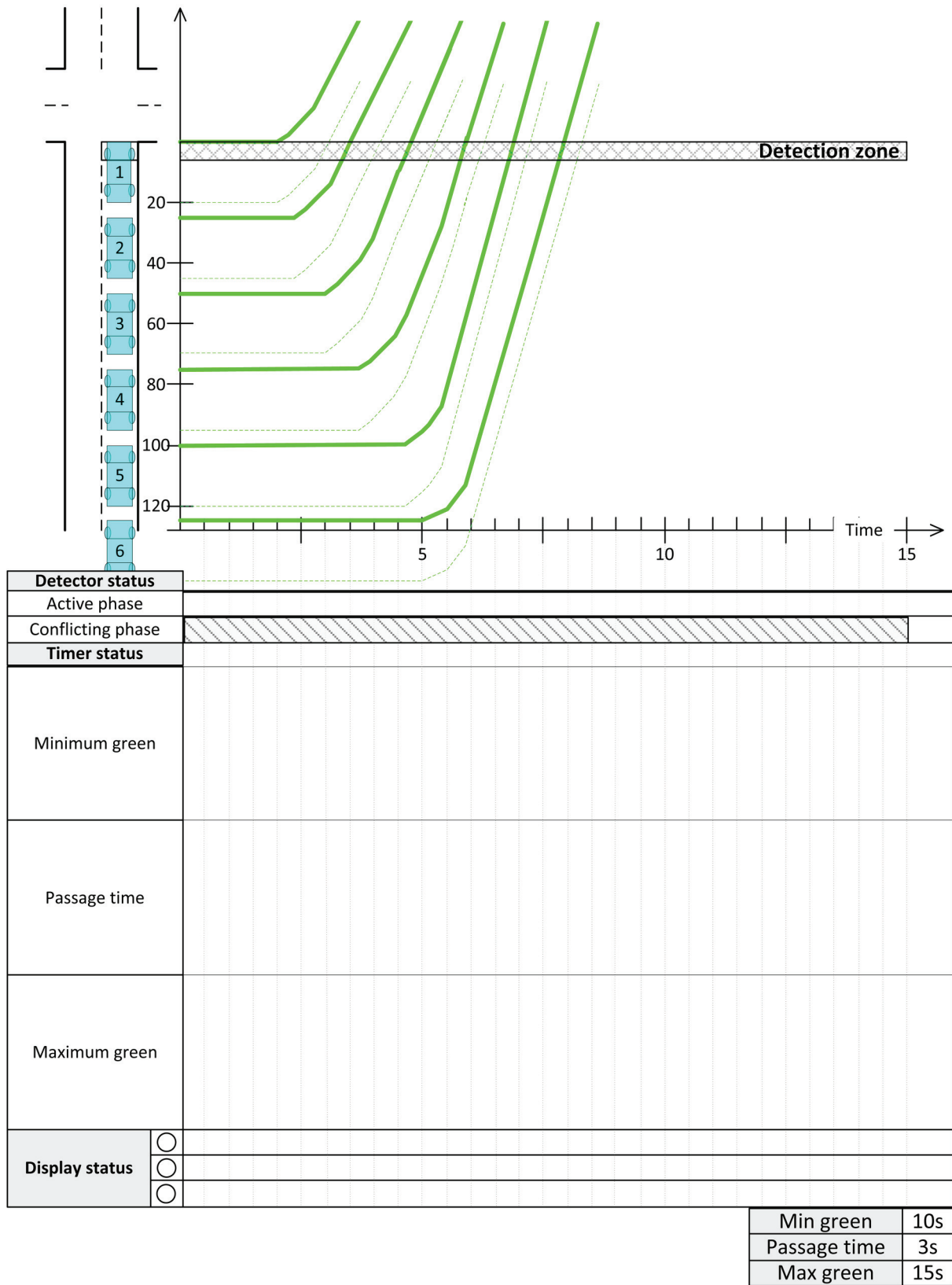


Figure 90. Traffic control process diagram - Case 4

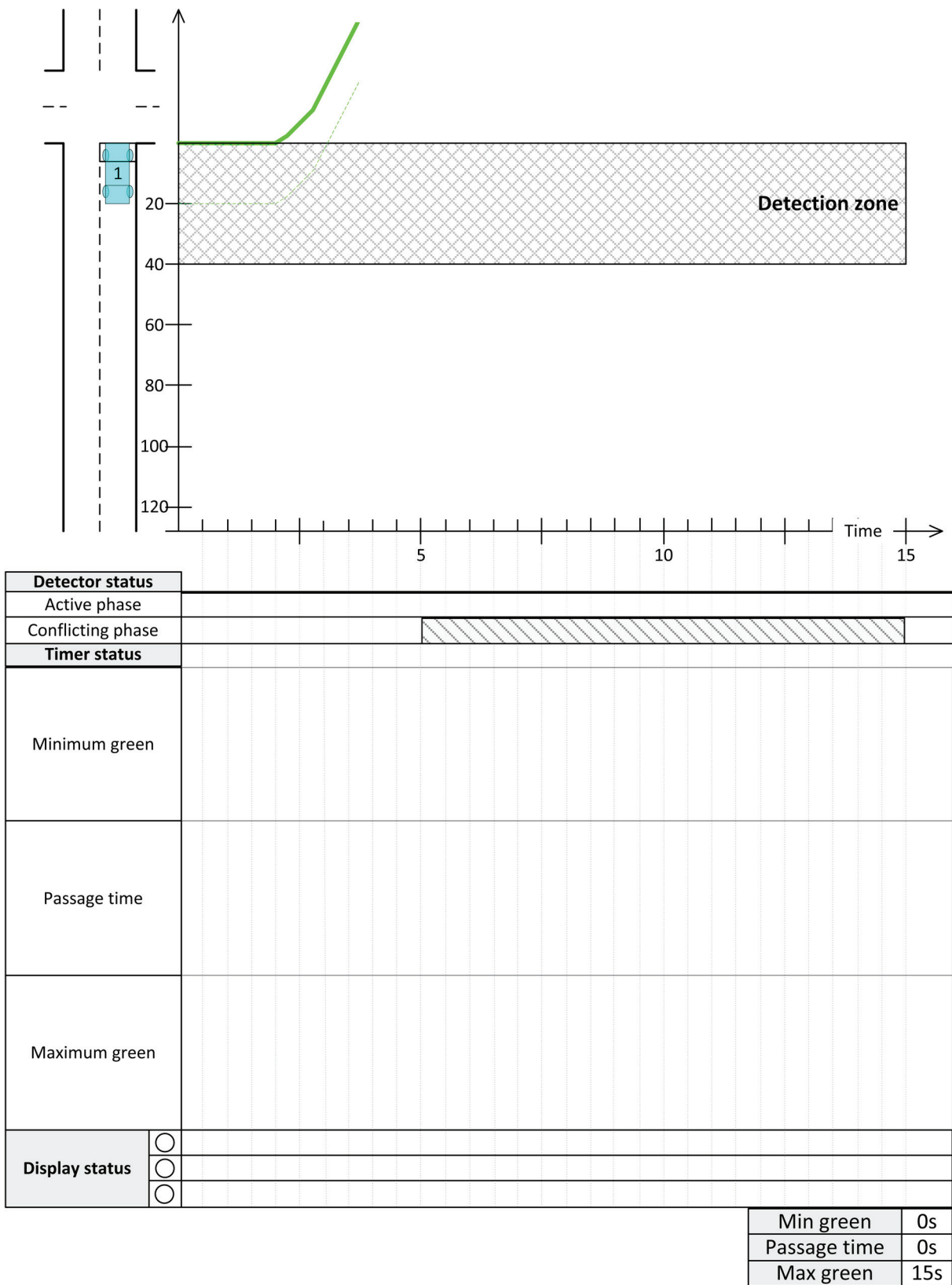


Figure 91. Traffic control process diagram - Case 5

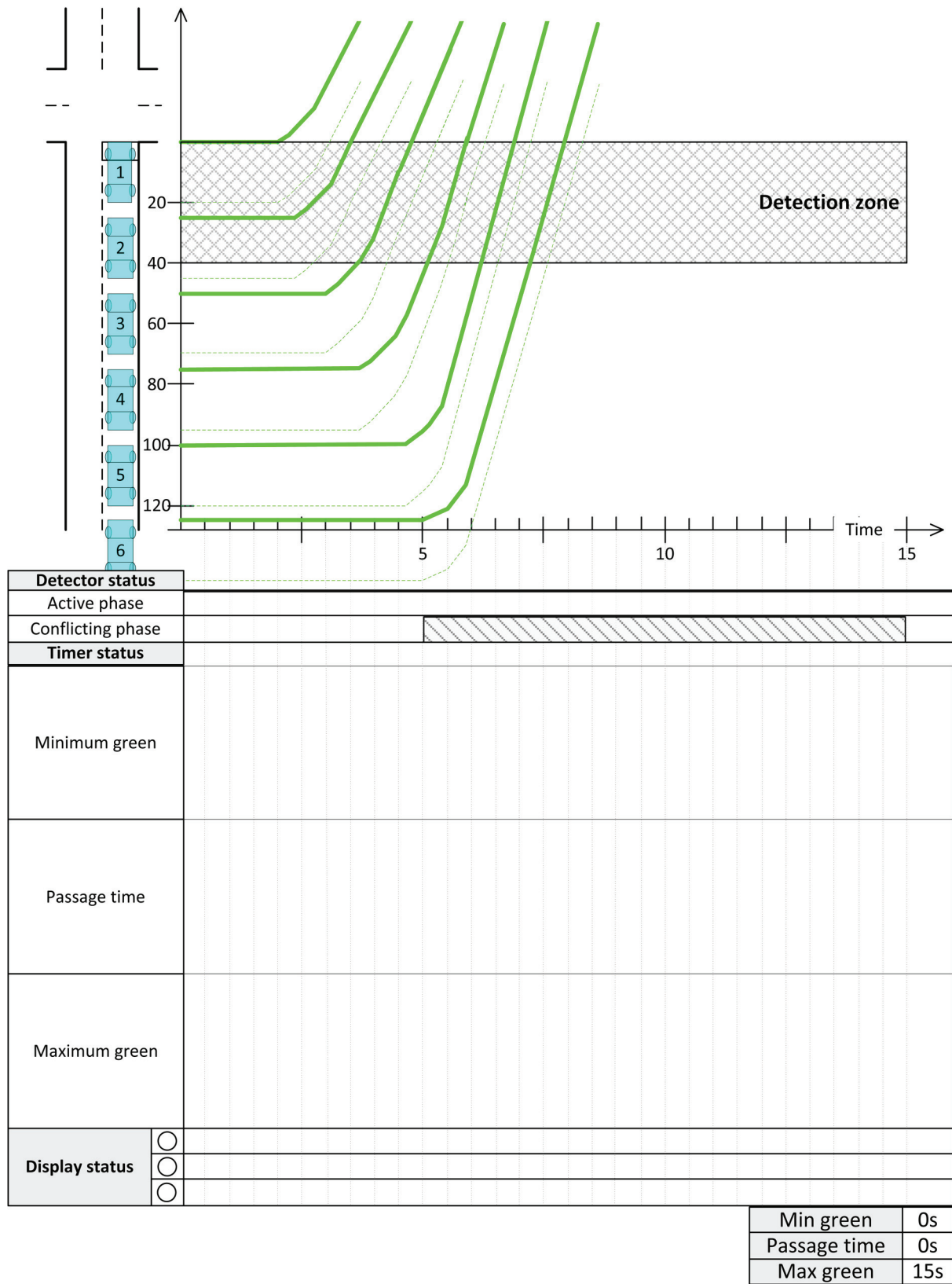


Figure 92. Traffic control process diagram - Case 6

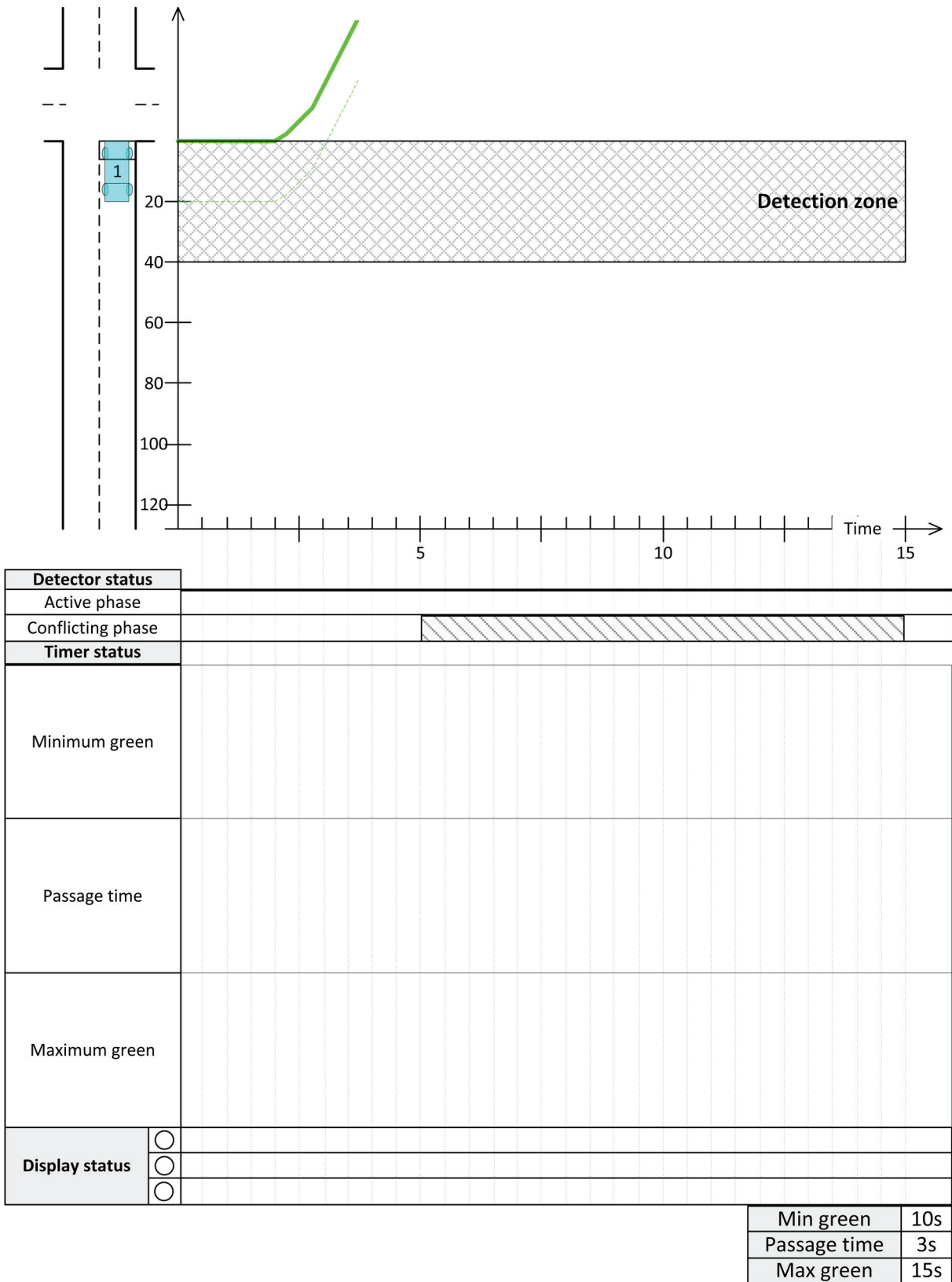


Figure 93. Traffic control process diagram - Case 7

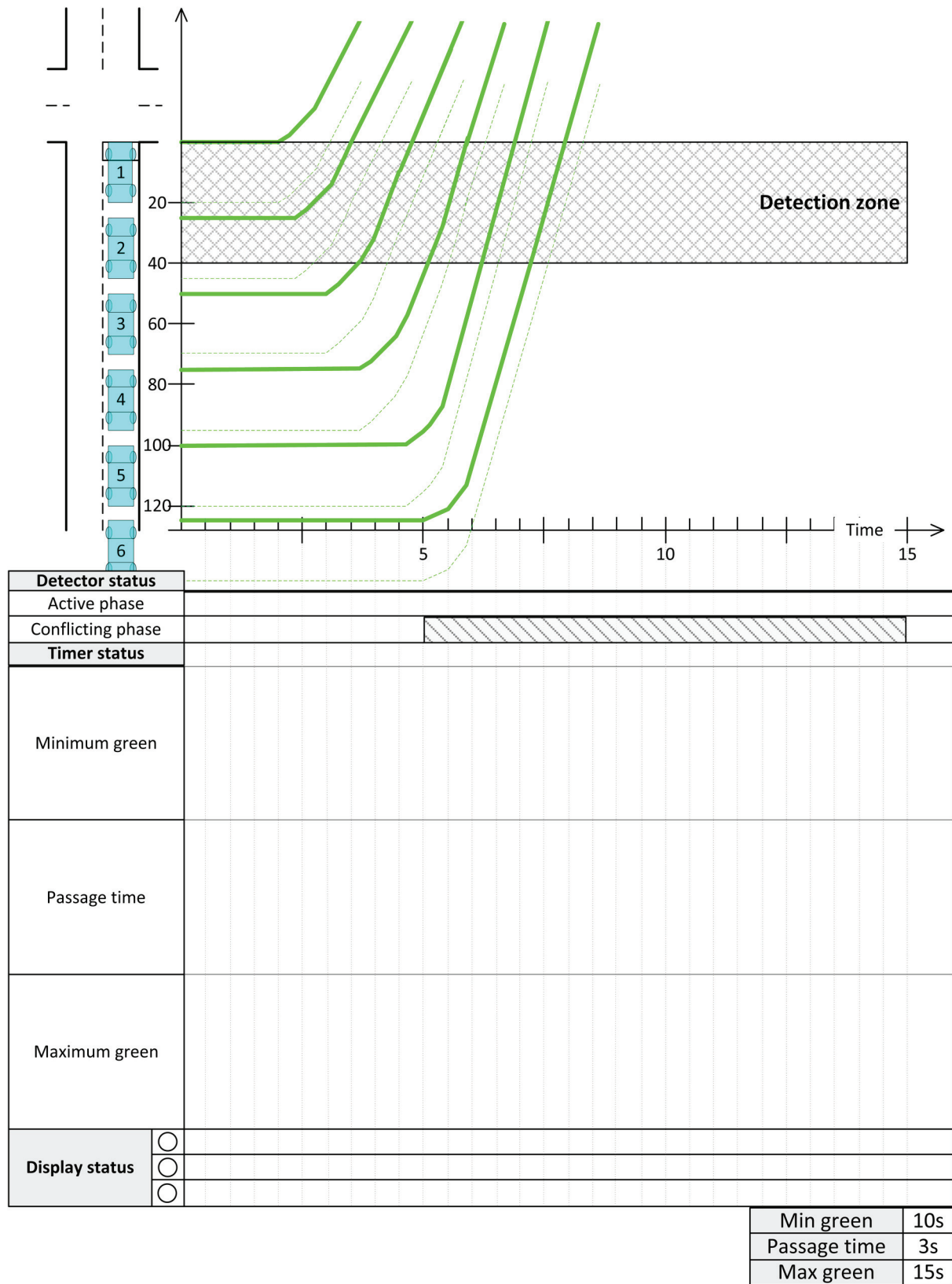


Figure 94. Traffic control process diagram - Case 8