18 What Do You Know About Controller Operations?

ASSESSMENT

PURPOSE

The purpose of this activity is to test your understanding of the basic timing processes for an actuated traffic controller.

LEARNING OBJECTIVE

- ○ Complete a traffic control process diagram describing the response of the detectors, the timing processes, and the displays to a pattern of vehicle demand

DELIVERABLE

- ○ Prepare a document with copies of the completed charts as required from Tasks 1 and 2

TASK 1

The traffic control process diagram (Figure 80, following page) shows the vehicle trajectories in a time space diagram format as well as the timing parameter values (bottom right of figure). Draw the detector status, the timer status, and the display status. Show the graphs for the values of the three timing processes in the spaces provided, noting the maximum and minimum values of the processes on the y-axis. The resulting signal display may change some of the vehicle trajectory plots. Note on the figures where you think that these changes will occur. Assume a yellow time of 3 seconds. Assume that the green time starts at $t = 0$. Also assume that the conflicting call begins at $t = 0$ and continues throughout the green duration.

TASK 2

Figure 81 and Figure 82 (see following pages) show traffic control process diagrams without the vehicle trajectories, but with the detector status data for both the active and the conflicting phases. The values of the timing parameters are given in the lower right of the two figures. Show the resulting timing processes in the form of a chart showing the value of the timing parameter as long as the green is active for that phase. Show the resulting signal display status, noting only when the display changes. State how the phase terminates in each case. Assume a yellow time of 3 seconds. Assume that the green time starts at $t = 0$.
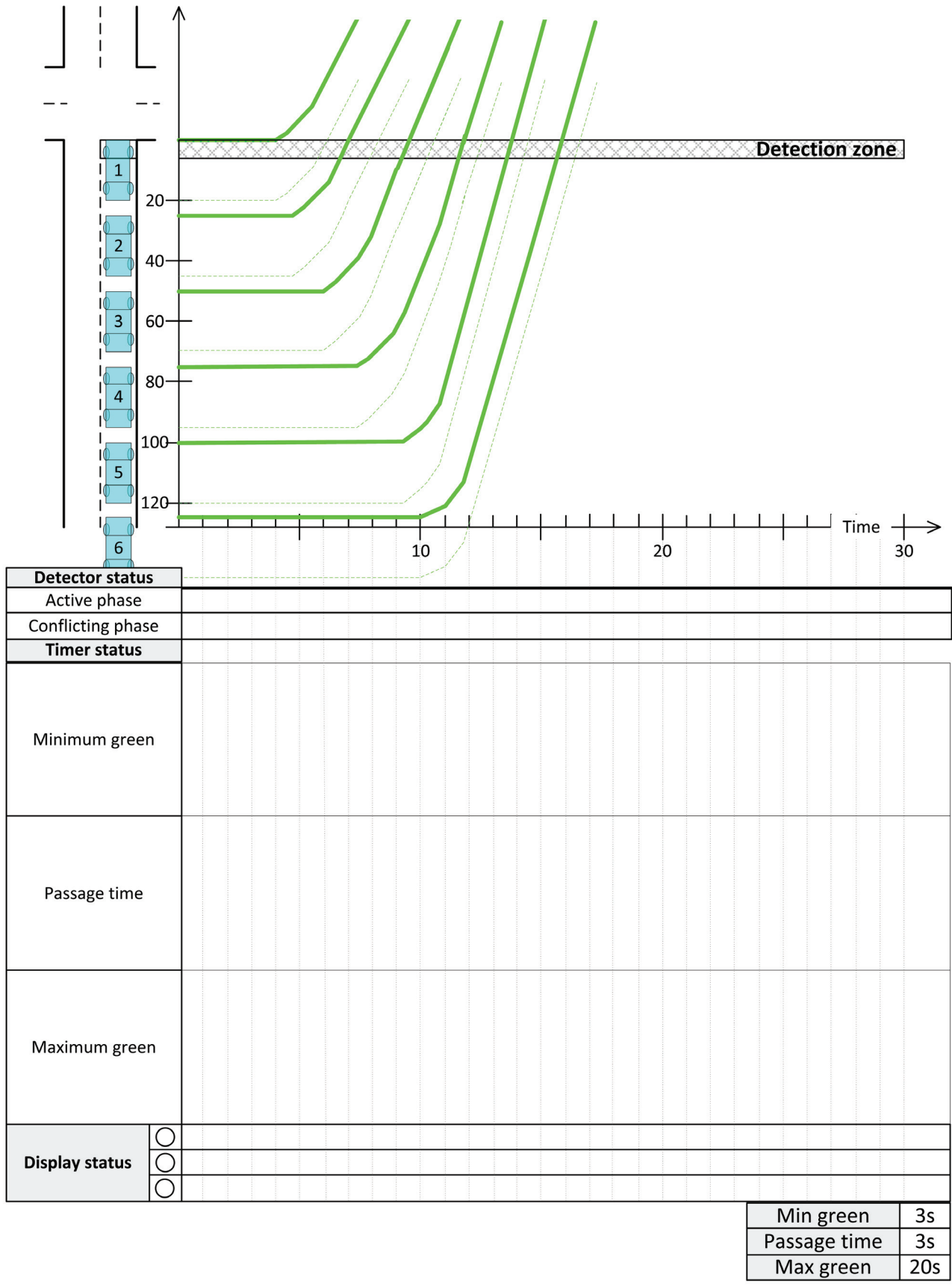
Figure 80. Traffic control process diagram with vehicle trajectories
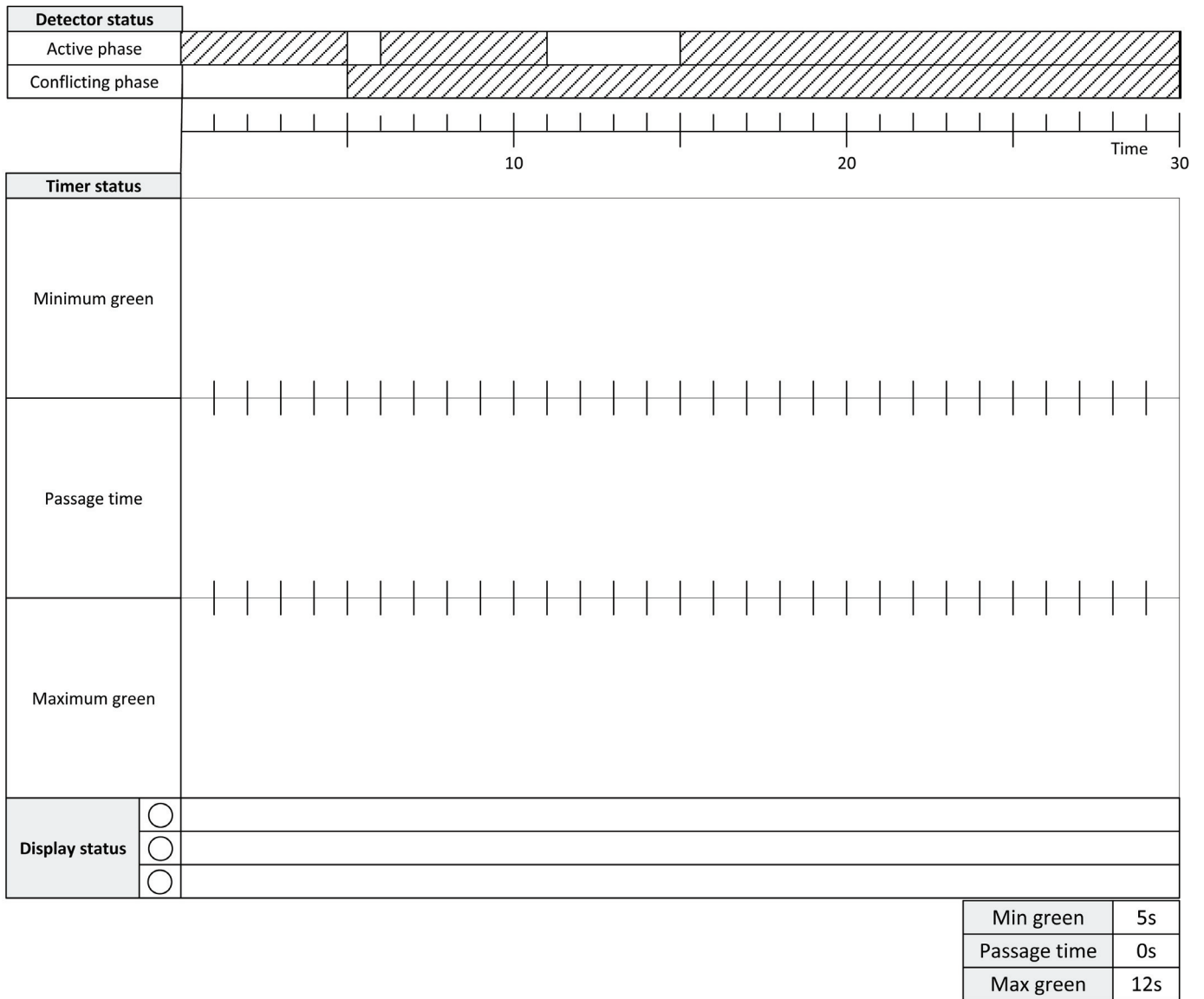
Figure 81. Traffic control process diagram

Detector status	
Active phase	
Conflicting phase	

Time
10   20   30

Timer status	
Minimum green	
Passage time	
Maximum green	
Display status	○
	○
	○

Min green	5s
Passage time	0s
Max green	12s

Figure 82. Traffic dontrol process diagram