

7 The diagram shows an arrangement to stop trains that are travelling too fast.



Trains coming from the left travel at a speed of  $50 \text{ m s}^{-1}$ . At marker 1, the driver must apply the brakes so that the train decelerates uniformly in order to pass marker 2 at no more than  $10 \text{ m s}^{-1}$ .

The train carries a detector that notes the times when the train passes each marker and will apply an emergency brake if the time between passing marker 1 and marker 2 is less than 20 s.

How far from marker 2 should marker 1 be placed?

- A** 200 m      **B** 400 m      **C** 500 m      **D** 600 m

**Space for working**