

# Institution of Railway Signal Engineers

2010 Examination, Module 2, Layout 1.

Train lengths:	Passenger (4 cars of 92m in multiple)	184 metres
	Freight	400 metres
Acceleration & braking rate:	All trains	0.5 m/sec/sec
Maximum permitted speed:	Passenger trains - Main Line	140 km/h
	Freight trains - Main Line	100 km/h
	Freight trains - Branch Line	40 km/h
	All running line turnouts	40 km/h

Headways on Main Line at uniform minimum signal spacing at speed of 120km/h:

Between A & G	Fast passenger train following stopping passenger train	3.5 minutes
	Station dwell time	30 seconds
Between G & H	Fast passenger train following fast passenger train	10 minutes

Train running requirements in each direction:

Passenger between A and H (fast)	2 per hour
Passenger between A and G (stopping - 0500 to 0100)	6 per hour
Freight between A and D (0100 to 0500)	4 per night

Operating requirements:

At station G, stopping passenger trains terminate at any platform & start back from platforms 1, 2 or 3.

Signalling for all possible shunting movements required between depot exit and all platforms.

Portions of trains attach and detach in platforms 1 and 2.

Up trains from H are required to enter platform 3 with a conflicting route set to or from platform 1 or 2.

At depot E, the headshunt is in constant use for access to the carriage washing plant. The depot services 18 trains each night.

The peak road traffic at level crossing F is 300 vehicles per hour.

Important notes for candidates:

Signals located outside the scale area of the plan must be dimensioned.  
The method of block working on all running lines must be shown.

Note that the quoted speed on which to base the headway calculations is not the same as the maximum permissible speed.

Original Scale:	1:2000	Check Scale	Actual	0	1cm	2cm	3cm	4cm	5cm
Gradients:	Level	Represents	0	20m	40m	60m	80m	100m	

Please read the above information carefully clw v2. 14/06/2010

