References for ESP Check List

Sr. No	Item	Reference	Follov	v Link
1	1 TITLES AND NUMBERING OF DRAWINGS (Title block size - 170mmX65mm with basic information) i Name of Railway ii Name of Division / Construction Organization iii Name of work iv Drawing Number v Alterations, if any, with full particulars in red on existing plan	IRWM Para 904(a)	<u>Summary</u>	<u>Details</u>
2	Spelling of station names, with kilometer and chainage centre line of station building with chainage as 000:00	IRWM Para 906(a) (iii)	<u>Summary</u>	Details
	Designations and serial numbers of all lines and sidings with direction of traffic (Up & Dn line) should be shown.	Engg Code Para 468	Summary	Details
3		SEM-I Para 8.6.2. (iii) & (Viii)	Summary	Details
4	The names of the nearest junctions or terminal stations on either side with length of block section including branch line / mid section sidings, if any, should be shown. Track centre between the lines and siding for running line should not be less than 6.3 mtr.	SEM-I Para 8.1.2	<u>Summary</u>	<u>Details</u>
		IRWM Para 906(a) (II)	Summary	Details
		IRWM Para 906(a) (xiv)	<u>Summary</u>	<u>Details</u>
		ACS 13 to IRSOD 2004	<u>Summary</u>	<u>Details</u>
6	Requirement of Dead ends / over run for isolation and simultaneous reception. All standard dead ends should carry the wording "Not fit for stabling" and length should not be less than 120 mtrs for MACLS.	SEM-I Para 8.6.2. (iv)	<u>Summary</u>	<u>Details</u>
7	Infringements of standard dimensions, if any, should be shown in tabular form.	IRWM Para 906(a) (xvi)	<u>Summary</u>	<u>Details</u>
8	CSR from FM to FM of all lines and sidings with chainages should be shown.	IRWM Para 906(a) (xiv)	<u>Summary</u>	<u>Details</u>
	Fouling mark should be placed at the first glued joint towards berthing portion of the line from SRJ of the	GR 4.56	<u>Summary</u>	Details
9	concerned point as shown below.	SEM-I Para 7.85.2(b)	<u>Summary</u>	<u>Details</u>
		SEM-II 17.11	<u>Summary</u>	<u>Details</u>
10	Type of Platform (i.e. Passenger or goods) with length and width and their heights above rail level should be shown.	IRWM Para 906(a) (xiv)	<u>Summary</u>	<u>Details</u>
11	Gradient posts with chainages up to 2.5 kms in rear of outer most points on either side.	SEM-I Para 8.6.2. (iv)	<u>Summary</u>	<u>Details</u>
12	There must be no change of grades within 30 meters of any points or crossings.	SOD 2004, Chapter II Para-2 d	<u>Summary</u>	<u>Details</u>
13	Railway land boundary with the distance from main line should be shown.	IRWM Para 906(a) (v)	<u>Summary</u>	<u>Details</u>
14	Complete description of bridges with chainages should be shown.	IRWM Para 906(C)	<u>Summary</u>	<u>Details</u>
15	LC Gate No. and class and its kilometreage/chainages, latest ATVU whether manned or unmanned up to 2.5 Kms in rear of outer most points on either side should be shown. Road width of LC Gate should also be maintained if gate is interlocked. If Road width is more than 08 mtrs, then road divider and double barrier should	IRWM Para 906(a) XV	<u>Summary</u>	<u>Details</u>
		SEM-I Para 8.6.2.(vi)	<u>Summary</u>	<u>Details</u>
	he shown	W.R.Poliy No 176/2013 dt 26.8.2013	<u>Summary</u>	<u>Details</u>
16	LC Gate to be clear of all running lines, Loop lines, dead ends and sidings. Gate lodge should be shown.	CRS letter MB/195 dt 29.06.04	<u>Summary</u>	<u>Details</u>
17	Description of work (to assess scope of S&T work ,Signalling requirement changes in standard of interlocking, PI or MACLS etc.) and scale of plan in meters should be mentioned.	SEM-I Para 8.6.2. (i)	<u>Summary</u>	<u>Details</u>
19	North directions should be shown.	SEM-I Para 8.1.5	<u>Summary</u>	<u>Details</u>
10		IRWM Para 906(a) (i)	<u>Summary</u>	<u>Details</u>
19	Chainages of points, traps, fouling mark (FM), gradient posts should be mentioned. In case of alteration in the yard chainages of old points, FM, LC Gate to be checked with respect to either previous Engg. Plan or Sig. Plan in force.	IRWM Para 906(a) (xiv)	<u>Summary</u>	<u>Details</u>
20	Means of Isolation (Snag dead end / trap point etc.) should be provided to achieve the mandatory isolation.	SEM-I Para 7.72.1	<u>Summary</u>	<u>Details</u>
21	Trap points with isolation as required , opening away from the important running lines.	Rly opening for publlic carriage passenger rule 2005 Para-36, 8(c)(ii)	<u>Summary</u>	<u>Details</u>
22	Length of overlaps / dead end to be of 120 mtrs for MACLS and 180mtrs for LQ for signal overlap.	GR 3.40(3)	Summary	Details
	Type of turnout i.e. whether 1 in 8/2, 1 in 12 or 1 in 16 crossover for passenger lines, goods lines, siding etc.	SEM-I Para 8.6.2. (xiii)	Summary	Details
23	should be mentioned. 1 in 8.5 with curved switches only permitted.	GR 4.11	Summary	Details
24	Preferably the gradient should not be continuously steeper than 1 in 260 between distant & home in single distant territory & between inner distant & home signal in double distant territory; otherwise Block overlap would be increased from 180.00 mtr to 300.00 mtr.	Rly Board Letter 2010/Safety (A&R)/19/23 dated 02.11.12	Summary	<u>Details</u>
25	Maximum gradient in station yard. (Gauge conversion, doubling & ii) For existing works (Gauge conversion, doubling & new crossing station etc.) -1 in 400 ii) For new works - 1 in 1200 For the purpose of the above rule, a station yard will be taken to extend: i) On single line to a distance of 50 meters beyond outermost points at either end of the station. ii) On double line where 2 aspect signalling is provided, from Home signal to distance of 50 meters beyond outermost points at the trailing end, or where there are no loops, to last stop signal of each line. iii) On double line where multiple aspect signaling is provided to distance of 50 meters beyond outermost points at either end of the stations or where there are no loops, from block section limit board to last stop signal of each line.	SOD 2004, Chapter II Para-2	Summary	Details
26	There should be sufficient gap between successive points, so that GJ and shunt signal can be provided.	Policy guidelines SG216/0 Vol 5.1.14 item no 4.4	Summary	<u>Details</u>

IRWM Para 904(a) Titles and Numbering of Drawings-

a) Title block should be of size 170 mm x 65 mm as shown in Annexure 9.1. Following basic information should be given in the title block.

- 1) NAME OF THE RAILWAY
- 2) NAME OF DIVN/CONSTN. ORGANIZATION
- 3) NAME OF WORK
- 4) REFERENCE TO SANCTION PARTICULARS

5) SCALE OF DRAWING AND REFERENCE TO STANDARD DRAWING, IF ANY

- 6) DRAWING NUMBER
- 7) COMPLETION DRAWING NUMBER
- 8) DATED INITIALS OF THE CONCERNED OFFICIALS
- 9) ALTERATIONS, IF ANY, WITH FULL PARTICULARS

b) Multiple drawing sheets marked with the same number should be indicated by means of a sequential sheet number on the total number of sheets in the following manner

Sheet No. = n/p

Where n = sheet number and

p = total number of sheets

c) If a drawing cancels a previous one, a note to this effect and the number of cancelled drawing should be recorded on the drawing. Correspondingly, the cancelled drawing should have an appropriate endorsement.

d) In the case of land plans or plans where other Railways or Organisations are concerned, additional space should be provided for their signatures. In cases involving organisations other than the Railways, the designations should be written in full.

e) All signatures on tracings should be in indelible ink and dated.

f) Every plan should bear in small letters at the lower left hand corner the name and initials of the Draftsman and Tracer who prepared and checked the plan. The Head Draftsman should initial below the space provided for the Divisional/District Engineer's signature.



IRWM Para 906(a) (iii) The kilometrage from headquarters of the railway to the centre of the station, the kilometrage of all junction points, the zero of all branch lines, the centre of a station, junction point and zero of any line, when once adopted for any 'yard' or portion of the line, shall be a permanent mark for all future references and shall not vary with additions, alterations, or remodelling of yards.



Engg Code Para 468. Plans of Station Yards. -For stations requiring a special design, a plan of the station yard to a scale of 10 metres to a cm. is required, showing all lines, sidings, platforms, buildings, wells, tanks, water-cranes, ash-pits, turn-tables, traversers, weighbridges, signals, etc. within the boundary of the station yard; also any roads, buildings, etc., lying outside the station yard but immediately adjacent there to-The name of each work or structure should be entered against it on the plan, with such notes and dimensions as may be necessary to define its size, position and purpose for which intended.



SEM-I Para 8.6.2. The following information should invariably be shown on signalling plans:-

SEM-I Para 8.6.2. The following information should invariably be shown on signalling plans:—

(i) Standard of interlocking and class of station,
(ii) Holding capacity of all running lines and sidings.

(iii) Direction of reception and despatch on running lines and description of sidings,
(iv) Restriction on dead-end sidings (e. g., No stabling) if any.
(v) All gradients within the station limits and upto 2.5 kilometres in rear of first stop signal,
(vi) Kilometrege and class of level crossings within the station limits, whether interlocked or not,
(vii) Type of Block Working with adjacent station and location of block Instruments,
(viii) Up and Down directions and names of important junctions on either side.
(ix) Reference to condonation of gradient infringements, CRS's dispensation for deviations from General Rules/Signal Engineering Manual, if any.
(x) Note regarding telephone communication provided between A. S. M./Cabinman and level crossings within and outside station limits.
(xii) Aspect sequence chart for colour light signals.
(xiii) Whether turnout is 1 in 8-1/2 or 1 in 16 etc.

(xiii) Whether turnout is 1 in 8-1/2 or 1 in 12 or 1 in 16 etc.

(xiv) Details of Detection Table etc., which are not apparent in the plan.

(xv) Details of Track Circuits/Axle Counter/Treadles.

(xvi) Intestinal distances and distance between Warning Boards and Signals.

(xvii) Details of open bridges.

(xviii) Location of water column, ash pit/tray.

(xix) Signal overlap in big yards. (xx) Custody of spare keys.

(xxi) Date of commissioning the installation.



SEM-I Para 8.1. Preparation—General Procedure :

8.1.1. All plans shall be prepared in accordance with the instructions issued by the Chief Signal and Telecommunication Engineer.

8.1.2. The names of the junction or terminal stations should be noted on plans, that on the left hand side being the one from which the kilometre progressively increases. The names of the adjacent block stations and mid-section sidings should also be indicated on the plans as also their respective distances from the center line of the station for which the plan is prepared.



IRWM Para 906 Details on Drawing
a) The following information should, when applicable, be shown
i) The magnetic north point and true north with magnetic variation, if known and where buildings are designed to suit a particular orientation, an indication to that effect.
ii) The names of the nearest junctions or terminals stations, that on the left hand being the one from which the kilometrage starts.



IRWM Para 906 (a)(xiv) The length and capacity in terms of vehicles of sidings; position of fouling marks and buffer stops; distance, centre to centre of tracks; distance of all the facing points on the main line from the centre of station; the serial numbers of the turnouts; the angles of crossings; inclination of gathering lines; the distance from the centre of station of all signals, signal cabins with their distinguishing feature, signals being shown as viewed by the Driver and with their bases at the sites they occupy; lengths of passenger and goods platforms and their heights above rail level; telegraph posts and crossings of tele-communication and power lines over head or underground.



SEM-I 8.6.2. The following information should invariably be shown on signalling plans:—
(i) Standard of interlocking and class of station,
(ii) Holding capacity of all running lines and sidings.
(iii) Direction of reception and despatch on running lines and description of sidings,
(iv) Restriction on dead-end sidings (e. g., No stabling) if any.



IRWM Para 906 (a) (xvi) Infringements of standard dimensions, if any.



IRWM Para 906 (a)(xiv) The length and capacity in terms of vehicles of sidings; position of fouling marks and buffer stops; distance, centre to centre of tracks; distance of all the facing points on the main line from the centre of station; the serial numbers of the turnouts; the angles of crossings; inclination of gathering lines; the distance from the centre of station of all signals, signal cabins with their distinguishing feature, signals being shown as viewed by the Driver and with their bases at the sites they occupy; lengths of passenger and goods platforms and their heights above rail level; telegraph posts and crossings of tele-communication and power lines over head or underground.



GR 4.56 GUARD TO SEE THAT TRAIN IS STOPPED CLEAR OF FOULING

MARKS.— When a train comes to a stand at a station, the Guard shall see that, wherever possible, the last vehicle of his train has cleared the fouling marks of all points and crossings. If not, he shall inform the Station Master at once and exhibit Stop hand signal to prevent any movement on the fouled line.

SR 4.56 (1) If the last vehicle is not clear of the fouling marks as required vide GR 4.56, the Guard shall show 'Proceed with caution' signal as prescribed in GR 3.55 towards the Loco Pilot who may move to clear the fouling mark. If the last vehicle is still not clear, the Guard shall exhibit Stop hand signal to prevent any movements on the fouled line. The Guard will sign the Train Intact Register and endorse on the same in bold letters and underline that the fouling mark is not clear. He shall also personally inform the Station Master, if the train has reached the terminal station and he goes 'off duty'. Where the Guard continues to be 'on duty' with the train, he shall protect the infringement against any movements as laid down above. During the precedence of trains, the Guard of the first arriving train, if not otherwise busy in shunting operations, etc, shall remain alert and exhibit danger signal in case he finds any irregularity in the setting of points or taking 'OFF' signals for the approaching train. This, however, does not absolve the Station Master of his overall responsibility to ensure that the conditions for taking 'OFF' signals, are complied with.



SEM-I 7.85. Clearance at Junction Point :--

7.85. I. Where it is difficult under normal conditions of visbility for a Cabinman to estimate clearance, bars or other approved devices shall be provided in order to define the fouling points of junctions, loops, siding connections, crossings etc. Note.—It is desirable to provide such protection by track circuiting the Point Zone.

7.85.2. Where the movement of trains over the Points is not visible to the Cabinman operating the Points—

(a) Occupation of the track between Stop Signal reading over the Points upto the fouling mark ahead of such Points shall be electrically indicated at the place of operation ;

(b) In order to prevent the movement of Points while a train is passing over them, facing Points may be provided with track circuit locking of the Point lock lever or ground track lock.



SEM-II 17.11 Track circuit termination

For track circuited points or lines in a station, track circuit termination shall be provided sufficiently before the Fouling Mark so as to avoid infringement to the standard dimension by any portion of the vehicle. The distance between track circuit termination and Fouling Mark shall not be less than 3.0 metres.



IRWM Para 906 (a)(xiv) The length and capacity in terms of vehicles of sidings; position of fouling marks and buffer stops; distance, centre to centre of tracks; distance of all the facing points on the main line from the centre of station; the serial numbers of the turnouts; the angles of crossings; inclination of gathering lines; the distance from the centre of station of all signals, signal cabins with their distinguishing feature, signals being shown as viewed by the Driver and with their bases at the sites they occupy; lengths of passenger and goods platforms and their heights above rail level; telegraph posts and crossings of tele-communication and power lines over head or underground.



SEM-I Para 8.6. Details on Drawings :

8.6.1. All dimensions and distances shall be written carefully upon that part of the drawing to which they refer. The distance to be embraced by the 6.0.1. All dimensions and distances shall be written carefully upon that part of the drawing to writch hey refer. The distance to be emphated by the figures shall be indicated by arrow heads. Figuring and descriptive matter should be so printed that without moving the plan, it can be read with ease.
8.6.2. The following information should invariably be shown on signalling plans:—

(i) Standard of interlocking and class of station,
(ii) Holding capacity of all running lines and sidings.

(ii) Direction of reception and despatch on running lines and description of sidings,
(iv) Restriction on dead-end sidings (e. g., No stabling) if any.
(v) All gradients within the station limits and upto 2.5 kilometres in rear of first stop signal,



SOD Chapter II 2(d) Except in Hump or Gravity yards or as provided for in item 22 of this Chapter, there must



IRWM 906 (a)(v) The boundaries of land according to the land plans. Where it does not unduly interfere with important details of the plan, side widths from the centre line and boundary posts (and desirably their numbers) should be shown.



IRWM 906 (C) The drawings for a bridge should include the site plan, plan and longitudinal section of the river or nala above and below the proposed site in the case of large bridges being rebuilt on account of insufficient waterway or being built at a new site and a sufficient number of cross sections showing highest flood level. If a correct survey of an important river does not exist, the river should be surveyed for a distance of 8 km upstream and 2 km down stream, all spill channels upstream being shown on the plan; these distances of 8 km and 2km are to be taken as measured at right angles to the centre line of the Railway and not along the course of the river. On these drawings, notes should be made of area of flood sections and hydraulic mean depths for each case, catchment area, velocity obtained by calculation and by experiments (preferably at high flood), waterway through bridge proposed to be allowed with a note on increase in velocity and probable highest flood level due to afflux, ground plan of foundations, sections through the bridge in such directions as are necessary to show the intended form and dimensions of the various parts, front and side elevation of abutments and piers, and drawings of such details as have not been standardised.

The standard of loading for which the bridge is designed should be recorded in the plan and reference to the type drawing of the particular girder should also be recorded.



IRWM 906 (a) (xv) Road crossings with their class and location; road over bridges and underbridges;



SEM Para 8.6. Details on Drawings :

8.6.1. All dimensions and distances shall be written carefully upon that part of the drawing to which they refer. The distance to be embraced by the 6.0.1. All dimensions and distances shall be written carefully upon that part of the drawing to writch hey refer. The distance to be emphated by the figures shall be indicated by arrow heads. Figuring and descriptive matter should be so printed that without moving the plan, it can be read with ease.
8.6.2. The following information should invariably be shown on signalling plans:—

(i) Standard of interlocking and class of station,
(ii) Holding capacity of all running lines and sidings.

- (iii) Direction of reception and despatch on running lines and description of sidings,

- (iv) Restriction on dead-end sidings (e. g., No stabling) if any.
 (v) All gradients within the station limits and upto 2.5 kilometres in rear of first stop signal,
 (vi) Kilometrege and class of level crossings within the station limits, whether interlocked or not,



SEM Para 8.6. Details on Drawings : 8.6.1. All dimensions and distances shall be written carefully upon that part of the drawing to which they refer. The distance to be embraced by the figures shall be indicated by arrow heads. Figuring and descriptive matter should be so printed that without moving the plan, it can be read with ease. 8.6.2. The following information should invariably be shown on signalling plans:— (i) Standard of interlocking and class of station,



SEM-I Para 8.1.5. The north point should be shown on every signalling plan.



IRWM Para 906 Details on Drawing a) The following information should, when applicable, be shown i) The magnetic north point and true north with magnetic variation, if known and where buildings are designed to suit a particular orientation, an indication to that effect.



IRWM Para 906 (a)(xiv) The length and capacity in terms of vehicles of sidings; position of fouling marks and buffer stops; distance, centre to centre of tracks; distance of all the facing points on the main line from the centre of station; the serial numbers of the turnouts; the angles of crossings; inclination of gathering lines; the distance from the centre of station of all signals, signal cabins with their distinguishing feature, signals being shown as viewed by the Driver and with their bases at the sites they occupy; lengths of passenger and goods platforms and their heights above rail level; telegraph posts and crossings of tele-communication and power lines over head or underground.



SEM-I Para 7.72. Means of Isolation.—

7.72.1. Sand humps, trap points, or other approved means of isolation shall be provided on all goods lines and sidings at their junctions with passengers lines, the normal setting being such as to prevent the passenger lines from being fouled,



Railway Opening for Public carriage of Passenger Rule Chapter VIII Para 36. 8.(ii)

Provision for isolation at stations - (1) The speed of trains running through stations shall be governed by the General Rules for all open lines administered by the railway administrations, both Government and the non-Government railways and shall be subject also to the restrictions relating to standards of interlocking prescribed in the Signal Engineering Manual.

(2) At no station at which isolation has not been provided through running trains shall be permitted unless the conditions laid down in the second paragraph of rule 4.11 of the General Rules are complied with.

(3) At any station where there is a speed restriction for through running trains different from neighbouring stations, a speed

(4) In order to maintain safety for through running, points for trap sidings must not be inserted in the main line or through line, except under approved Special Instructions in accordance with the Signal Engineering Manual, Part I.

(5) All passenger running lines shall be isolated from all goods lines or sidings connected thereto.
(6) All goods running lines may be isolated from all sidings connected thereto.
(7) It is not necessary to isolate one goods receiving line from another
(8) Isolation may be accomplished by -

(a)connection to another line or long siding;

(b)the provision of short dead end siding; or (c)the provision of trap.

Note.

(i) Whichever may be the method for isolation, a starter signal shall be provided, except when omitted under approved special instructions.

(ii) When a trap is provided, the trap switch should be located with the heel of the switch in rear of the fouling mark and preferably on the straight. The switch should be in the rail away from the line to be protected.



GR 3.40 CONDITIONS FOR TAKING 'OFF' HOME SIGNAL.-

(1) When a train is approaching a Home signal otherwise than at a terminal station, the signal shall not be taken 'OFF' until the train has first been brought to a stand outside it, unless.-(a) on a double line, the line is clear for an adequate distance beyond the Starter; or

(b) on a single line, the line is clear for an adequate distance beyond the trailing points, or under approved special instructions for an adequate distance beyond the place at which the train is required to come to a stand.

(2) Where a train has first been brought to a stand outside the Home signal, the signal may be taken 'OFF', if.-

(a) On a double line, the line is clear up to the Starter, or (b) On a single line, the line is clear up to the trailing points or under approved special instructions up to the place at which the train is required to come to a stand.

(3) Except under approved special instructions, the adequate distance referred to in sub-rule (1) shall never be less than-(a) 180 metres at stations equipped with two aspect lower

quadrant or two aspect colour light signals, or(b) 120 metres in the case of stations provided with multipleaspect signals or modified lower quadrant signals.

(4) Where a sand hump of approved design, or under approved special instructions a derailing switch, has been provided for the line on which a train is to be received, they shall be deemed to be efficient substitutes for the adequate distance referred to in sub-rule (3).







4.11 LIMITS OF SPEED WHILE RUNNING THROUGH STATIONS.—

(1) No train shall run through an interlocked station at a speed exceeding 50 Kilometres an hour, or such less speed as may be prescribed by approved special instructions, unless the line on which the train is to run has been isolated from all other lines by the setting of points or other approved means and interlocking is such as to maintain this condition during the passage of the train.

(2) In every case in which trains are permitted to run through on non-isolated line, all shunting shall be stopped and no vehicle unattached to an engine or not properly secured in accordance with Rule 5.23 may be kept standing on a connected line, which is not isolated from the through line.
SR 4.11 (1) Trains arranged to run through the station without stopping shall, as far as possible always do so on the straight line.

SR 4.11 (2) When the straight line is blocked, the following conditions will apply.—

(A) No train must be allowed to run through over a loop line having turn outs 1 in 8 ½ (i.e. less than 1 in 12)in the facing and trailing direction.
(B) Trains may be permitted to run through over loop line having turn outs 1 in 12 and flatter or provided with symmetrical split at a restricted speed of 15 Kmph.

(C) When a train is permitted to run through over loop line as per SR 4.11(2)(B) above, the run through train must be stopped at the first Stop signal if the station is not provided with bracketed Home signal for each line.

(D) All restrictions wherever applicable at a station must be specifically embodied in the SWRs.

Exception:(i) A passenger train should not be received over a loop line having turn outs 1 in 8 ½ (i.e. less than 1 in 12) in the facing and trailing direction. In case of an emergency if it becomes absolutely necessary to receive a passenger train on such a loop, the train should be first stopped at the First Stop Signal and then piloted into the station. The speed of the train must not exceed 10 Kmph while entering or leaving the loop.

BACK

SOD 2004 Chapter II, para-2

2 Maximum gradient in station yards unless special safety devices are adopted and/or special rules enforced to prevent accidents in accordance with approved special instructions.

(i) For existing works 1 in 400 (ii) For new works 1 in 1200 Note :

(a) It may not be possible to provide yard gradients of 1 in 1200 while executing works in connection with gauge conversion, doublings and new crossing station etc. Railways should, however, make effort to provide grades as flat as possible in the station yards but not steeper than 1 in 400. In case of gradient steeper than 1 in 400 are required to be provided in exceptional cases, condonation for the same should be obtained from Railway Board.

(b) For the purpose of the above rule, a station yard will be taken to extend :(i) On single line to a distance of 50 metres beyond outermost points at either end of the station.

(ii) On double line where 2 aspect signalling is provided, from Home signal to a distance of 50 metres beyond outermost points at the trailing end, or where there are no loops, to last stop signal of each line.

(iii) On double line where multiple aspect signalling is provided to a distance of 50 metres beyond outermost points at either end of the station or where there are no loops, from Block Section Limit Board to last stop signal of each line.

(c) No siding should join a passenger line on a steeper grade than 1 in 260, except where it is unavoidable and then only with the previous sanction of the Railway Board obtained through the Commissioner of Railway Safety when a slip siding or other arrangement is made sufficient to prevent accidents.

(d) Except in Hump or Gravity yards or as provided for in item 22 of this Chapter, there must be no change of grades within 30 metres of any points or crossings.

(e) At stations with grades steeper than 1 in 400 beyond 50 metres of outermost points, trains should not be drawn up to the last stop signal and held up on the steep gradient in order to clear the reception line for giving permission to approach to the following train. No shunting beyond outermost points on the steep gradient side should be allowed unless a locomotive is attached at the lower end of the load from the point of view of gradient.(f) Item 2 does not apply to Flag or Halt stations.

BACK