SCHEDULE OF DIMENSNSION

BY

S.K.Bansal

SPP/IRICEN

- Schedule of dimension is nothing but a schedule, which lays down :-
- Limiting values, recommended values, and infringement to limiting values, which can be continued over entire Indian railways system for various track parameters.
- Goods wagon and coaching stock parameters.
- Horizontal and vertical clearances to be followed on Indian railways.

Necessity of S O D

- It is absolutely essential to ensure safety of traveling public as well as goods over entire Indian railways system.
- To adopt uniform system of track tolerances, location of structures and construction standard all over the Indian railways.
- To permit different types of coaching and goods stock owned by different railways to ply on entire railway system with same level of degree of safety.

MAIN FEATURES OF SOD-2004

- Dimensions are given only for 1676 mm gauge.
- Consists of only metric units.
- Only two schedules – schedule I & schedule II
- Extra clearances required for curves are modified to suit speed of 160 kmph and SE of 165 mm
- Additional appendix for extra clearances required for 200 kmph is also given

SCHEDULE - I

- Schedule I of SOD-2004 consists of those items which are mandatory and have to be observed on all 1676 mm gauge Railways in India.
- Contains the items of Schedule- I and certain selected items of Schedule- II of 1973 Version

Contd. …

DIMENSIONS given in Schedule-I are classified under two heads :-

‘Existing works’ – The works which were existing before issue of SOD (2004).

‘New works’ – Include new constructions, additions of new lines/structure, gauge conversion and doubling

Contd. …

However following works will not be included in ‘New works’-

- Shifting of Points & Crossings.
- Extension of siding.
- Extension of building, etc.

SCHEDULE - II

- Schedule – II contains the existing infringements of Schedule – I.

- These are items, which were included in Schedule – III of 1973 version.

CONTENT OF S.O.D.

SCHEDULE I :-i) ESSENTIAL FOR SAFETY ii) PRIOR SANCTION FOR DEVIATION	
CHAPTER	**DETAILS**
I GENERAL	Spacing, ,Curves, Br.Bldg Structure, Tunnel, Sig Gear, locking etc.
II. STN YARD	Pts.& Crossing, P/F, Bldg/St, Tr.Spacing etc.

Contd. …

III –W/Shop & Sheds	Tr,Spacing, O/Head Girder Structure.
IV –(A) Rolling stock (C&W)	Wheels /Axles, Wheelbase, Buffers / Couplings,Floor height Max.moving dimensions
IV-(B)- Rolling Stock (3660 mm) -	Max. future moving dimensions.

Contd. …

IV-©-Rolling Stock (Loco)	Wheels & Axles,Buffers/ Couplings,Max. moving Dimensions.
V-ELECT.TR.(D.C.)	Elect.Equipment Clearances .
V-(A)---------- (A.C.)	-------DO----------

SCHEDULE I CHAPTER I

- MIN. DIST. C/C OF TRACK .

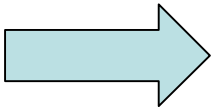
  i) For existing works 4265 mm

  ii) For new works/additions

  to existing works 5300 mm

Note: Extra clearance up to 5 degree has been accounted for the track spacing given in item ii) above.

For curves more than 5 degree extra clearances will be calculated.



Contd. …

- Minimum Radius of curves -175 m (10 degree)

Note: Check rails to be provided in curves having radius 218 meters(8 degree) and sharper.

Check rails may also be provided in flatter curves, if high speed is contemplated.

Contd. …

A) Maximum clear distance bet. two sleepers on bridge:-	
i) on existing Bridges	510 mm
ii) New construction & on existing bridges during regirdering /TSR	450 mm
B) Maximum distance between Joint sleepers on Bridges.	200 mm

Contd. …

Minimum thickness of Bridge timber, exclusive of notching.	150 mm	
Minimum length of bridge sleeper.	305 mm + dist. from out side to outside of girder flange	(subject to min.2440 mm)

SCHEDULE I CHAPTER I

CONTD...

- Minimum clearance of check rail on curve. 44 mm.
- Minimum clearance of check rail on level crossing. 51 mm.
- Maximum clearance of check rail on level crossing. 57 mm
- Minimum depth for wheel flange. 38 mm

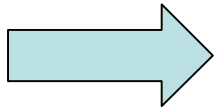
Schedule I chapter I contd. …

BULDING AND STRUCTURE

Minimum horizontal distance from center of track to any structure from RL to 305 mm above RL

i) For existing works 1675 mm

ii) For new works or alterations to existing works 1905 mm



Minimum horizontal distance from C/L of track to any structure except a platform.

i)For existing works. From 305 mm to 4420 mm above RL.	2135 mm
ii) For new works or alterations to new works From 305 mm to1065 mm above R L	1905 mm increasing to 2360 mm
From 1065 mm to 3355 mm	2360 mm

Contd. …

From 3355 to 4420 mm above rail level	2360 mm decreasing to 2135 mm
From 4420 to 5870 mm above rail level	2135 mm decreasing to 915 mm

Contd. …

Below the rail level up to the formation level on the straight track and curve up to 875 m	2575 mm
Below the rail level up to the formation level on the curve Radius< 875 m	2725 mm

Schedule I Chapter I contd. …

Minimum horizontal distance of any telegraph post from C/L of nearest track

i) For existing works - Ht of the post + 2135 mm.

ii) For new works - Ht of the post + 2360 mm.

Contd. …

- Min. ht. above rail level for a dist. Of 1600 mm on either side of the centre of track. Where 25 K.V. A.C. traction is likely to be used.
- F.O.B. 6250 mm
- R.O.B. 5870 mm

Contd. …

Minimum height above rail level for telegraph, telephone and other such low tension wires crossing a railway	6100 mm
The minimum horizontal distance from centre of nearest track to structure carrying electrical conductors crossing a railway	Height of structure + 6 meters

Schedule I chapter I contd. …

Safety Refuges :-

Max. distance in tunnels 100 m

On bridges with

a)span less than 100 m 100 m

b)spans of 100 m or more - On each pier

Schedule I chapter I contd. …

Formation width :-

For single line straight track –

Min. width in embankment 6850 mm

Min. width in cutting 6250 mm

For Double line straight track –

Min. width in embankment 12150 mm

Min. width in cutting 11550

Schedule I chapter II
(Station yard)

Min. dist. Centre to centre of track :-

(i) For existing works 4265 mm

(ii) For new works / Alt. 5300 mm

Max. gradient in Station yard :-

(i) For existing works 1 in 400

(ii) For new works / Alt. 1 in 1200

C.S.No.-2 dated. 22.03.06

- ACS-2 is in supersession to ACS-1
- Gradient 1 in 1200 Should be desirable/recommended gradient.
- In unavoidable cases Gradient is permitted up to 1 in 260 with provision of slip siding or other arrangement to prevent accident.
- Sanction of CRS is required beyond 1in 400

Chapter ii contd. …

Horizontal dist. From C/L of track to

	Max.	**Min.**
Face of platform coping	1680 mm	1670mm
Face of goods platform coping	1680 mm	1670 mm
Face of any platform wall	1905 mm	1675 mm

Chapter ii contd. …

Height above rail level –

	Max.	Min.
For high level passenger platform	840 mm	760 mm
For medium level passenger platform	455 mm	-
For goods platform	1065 mm	-

CHAPTER II CONTD…

POINTS & CROSSINGS :- Clearance of

	Max.	Min.
Check rail opposite nose of crossing	48 mm	44 mm
----------Do---------- (In case of PRC T/O)	45 mm	41 mm
Wing rail at nose of crossing	48 mm	44 mm
----------Do---------- (In case of PRC T/O)	45 mm	41 mm

Chapter ii contd. …

Points & Crossings :-

	Min.	Max.
Clearance bet. Toe of open switch and stock rail.	95 mm	115 mm
Radius of curvature for Slip points, Turn outs, Cross over.	218 m	-
Angle of crossing.	1 in 16	-
Length of Tongue Rail.	3660 mm	-

SCHEDULE I CHAPTER IV (A)

- Wheel Gauge 1599mm-1602mm.
- Tread Dia of new wheel 914mm-1092mm.
- Flange Projection 28.5mm-35.0 mm
- Flange Thickness 16 mm-28.5 mm

Contd. …

- Tyre width minimum. 127mm

Floor height above RL

- Passenger 1345mm-1220mm.
- Goods 1345mm-1145mm.

- Buffer height above RL 1030mm-1105mm

SCHEDULE I CHAPTERIV(A)
CONTD…

Min.Wheel base for bogie truck	1830mm.
Min. Wheel base for pass. Bogie	2440mm.
Min. Dist. Bet bogie centres	2/3 vehicle length
Max. Dist bet. Bogie centres:	14.785m.
Max. Lenth of body or roof: 4-Wheeler (3200mm wide) Bogie vehicles (3250mm. wide)	 8540mm. 21340mm

SCHEDULE I CHAPTER V (D.C.)

- MIN. HT.FROM RL. TO UNDERSIDE OF LIVE WIRE:
  - BRIDGES & TUNNELS. 5030 mm.
  - IN THE OPEN 5335 mm.
  - IN RUNNING AND CARRIAGE SHEDS 5790 mm
  - AT LEVEL CROSSING 5485 mm
  - MAX. HT. FROM RL. TO UNDERSIDE 5790 mm

  OF LIVE WIRE (except in running and carriage sheds)

SCHEDULE V CHAPTER V

- MAX.VARIATION OF LIVE WIRE ON EITHER SIDE OF CENTRAL LINE OF TRACK:
  - ON STRAIGHT TRACK.
    230 mm.
  - ON CURVES (INSIDE)
    380 mm.
  - MIN. DIST. BET. LIVE WIRE AND ANY STRUCTURE
    130 mm.
  - MAX. WIDTH OF PANTOGRAPH

SCHEDULE V (A) A.C.

- MIN. HT. OF UNDERSIDE OF LIVE WIRE:

BRIDGES & TUNNELS	4800mm
IN OPEN	5500mm
SHEDS	5800mm
LEVEL CROSSINGS	5500mm

- MAX. VARIATION OF LIVE WIRE EITHER SIDE :

STRAGIHT	200mm
CURVES	300mm

- MAX. WITDTH OF PENTOGRAPH 1800mm

SCHEDULE V (A) A.C.

- MIN.HT.OF UNDERSIDE OF LIVE WIRE:

  BRIDGES & TUNNELS.
4800mm.

  IN OPEN.
5500mm

  SHEDS.
5800mm

  LEVEL CROSSINGS.
5500mm.

- MAX. VARIATION OF LIVE WIRE EITHER SIDE :

  STRAGIHT.

SCHEDULE-II

- Min. dist C/L to C/L of track

  i)for 3250mm wide stock 3660 mm

  ii) for 3660mm wide stock 4040 mm

- Min. clear dist. From C/L

of Track to any fixed structure

From RL to 1065 mm above

Rail level 1675/1905mm

Contd. …

- From 1065mm to 3505mm
  above R/L 1980/2135mm
- 4265 mm above R/L 2055 mm

(with SR 16 kmph) 1980 mm

- Min. clear height above R/L

for a dist. of 305 mm/915 mm on either
of centre of track 4420 mm / 5030 mm

Over-dimensioned consignment

- When a consignment whose length,width and height are such that one or more of them infringe the standard moving dimension at any point during the run from start to destination, then the consignment is called O.D.C.

Class ‘A’ O.D.C.

(Permitted out of gauge loads)

Which exceed the maximum moving dimensions but do not infringe any fixed structure on the route by a net clearance of 150 mm and above and gross clearance 225 mm and above.

Contd. …

Class ‘B’ O.D.C.(Exceptional out of gauge load) – Net clearance not less than 75 mm but less than 150 mm, gross clearance 150 mm to 225 mm.

Class ‘C’ O.D.C.-(Extraordinary out of gauge loads) Net clearance are less than 75 mm and gross clearance less than 150 mm

Speed Restrictions for ‘A’ Class O.D.C.

Gauge	Speed Restriction	Escort	Sanctioning authority
B.G	Sectional speed of four wheeler 30 kmph where gross clearances is less than 380 mm. Movement by day/night	Not required	COPS

Speed Restrictions for ‘B’ Class O.D.C.

Gauge	Speed Restriction	Escort	Sanctioning authority
B.G.	40 kmph by day and night During night stop dead and proceed slowly at approach of structure having gross clearance less than 225 mm.	SSE (C&W) T.I.	CE

Speed Restrictions for ‘C’ Class O.D.C.

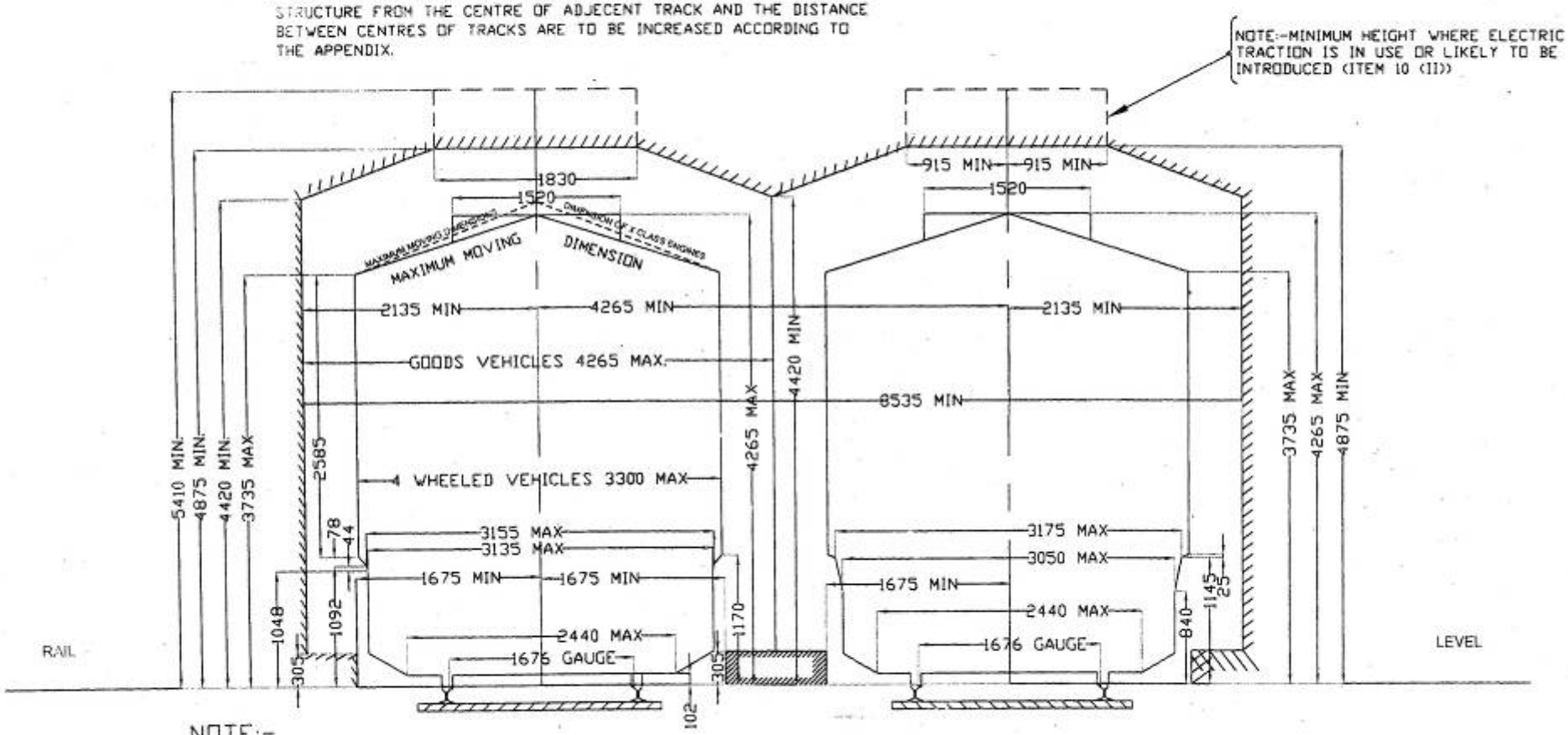
Gauge	Speed Restriction	Escort	Sanctioning authority
B.G.	25 kmph Movement by day only	SSE/SE (C&W) T.I. SSE/SE (P.Way) TRD staff	CRS

STANDARD DIMENSIONS OUT OF STATIONS
SHEDULE I-CHAPTER I

DIAGRAM No. 1B
1676 mm GAUGE (B.G.)

NOTE:-

WHERE THE LINE IS ON A CURVE, THE HORIZONTAL DISTANCE OF ANY STRUCTURE FROM THE CENTRE OF ADJECENT TRACK AND THE DISTANCE BETWEEN CENTRES OF TRACKS ARE TO BE INCREASED ACCORDING TO THE APPENDIX.



NOTE:-

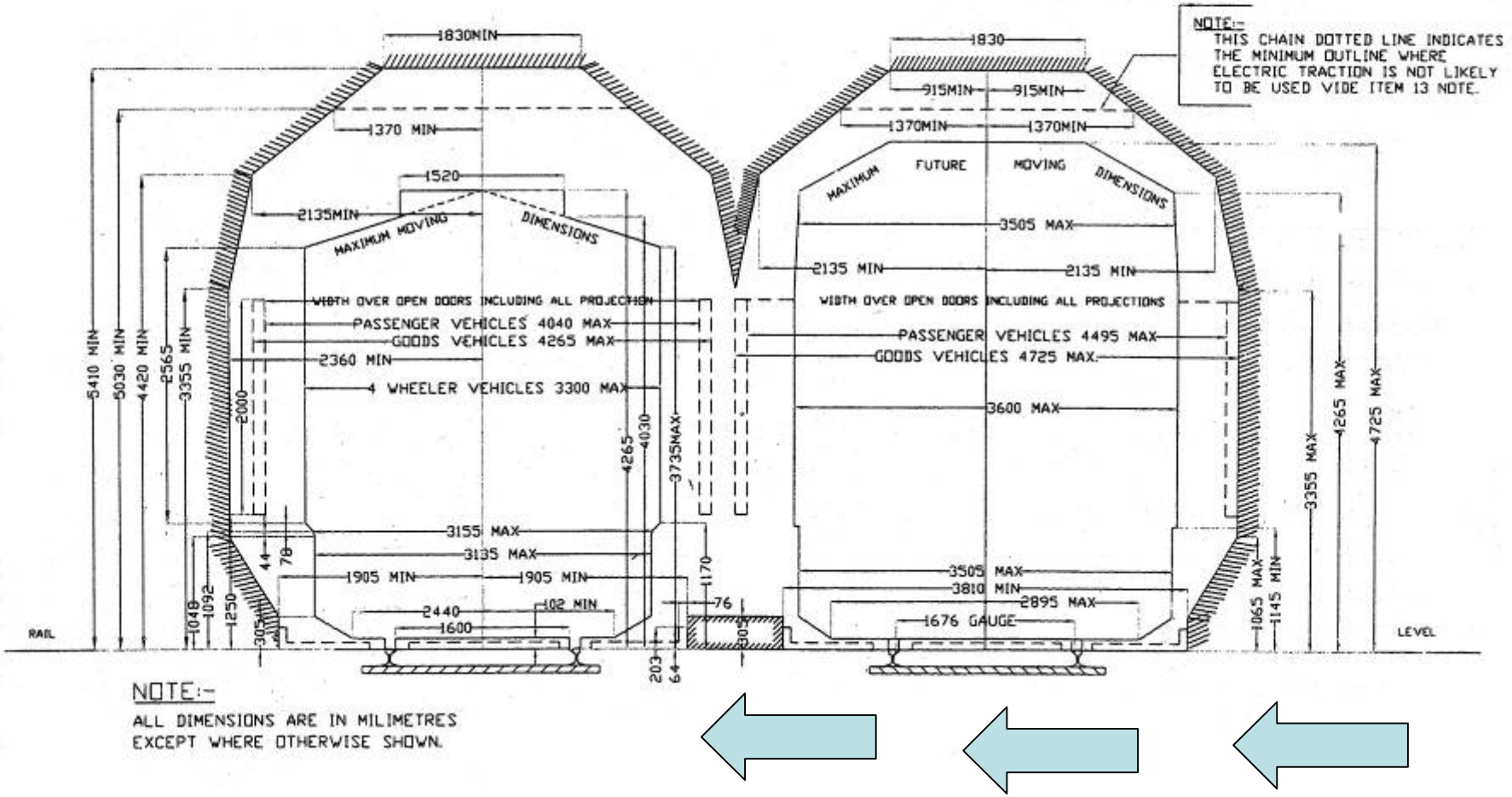
ALL DIMENSIONS ARE IN MILIMETRES
EXCEPT WHERE OTHERWISE SHOWN.

STANDARD DIMENSIONS FOR TUNNELS & THROUGH GIRDER BRIDGES

SCHEDULE I-CHAPTER I

NOTE:-
1. WHERE THE LINE IS ON CURVE ,THE HORIZONTAL DISTANCE OF ANY STRUCTURE FROM THE CENTRE OF ADJECENT TRACK AND THE DISTANCE BETWEEN CENTRES OF .TRACKS ARE TO BE INCREASED ACCORDING TO THE APPENDIX.
2. WHEN RE-SPACING EXISTING LINES,THE MINIMUM DISTANCE CENTRE TO CENTRE OF TRACKS MAY BE REDUCED FROM 4725 TO NOT LESS THAN 4495 FOR THE PURPOSE OF AVOIDING HEAVY ALTERATIONS TO TUNNELS OR THROUGH GIRDER BRIDGES. THE 4725 DIMENSION IS TO BE ADOPTED FOR ALL NEW WORKS.

DIAGRAM No. 1A
1676 mm GAUGE.
(B.G.)



NOTE:-
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STANDARD DIMENSIONS FOR TUNNELS & THROUGH GIRDER BRIDGES

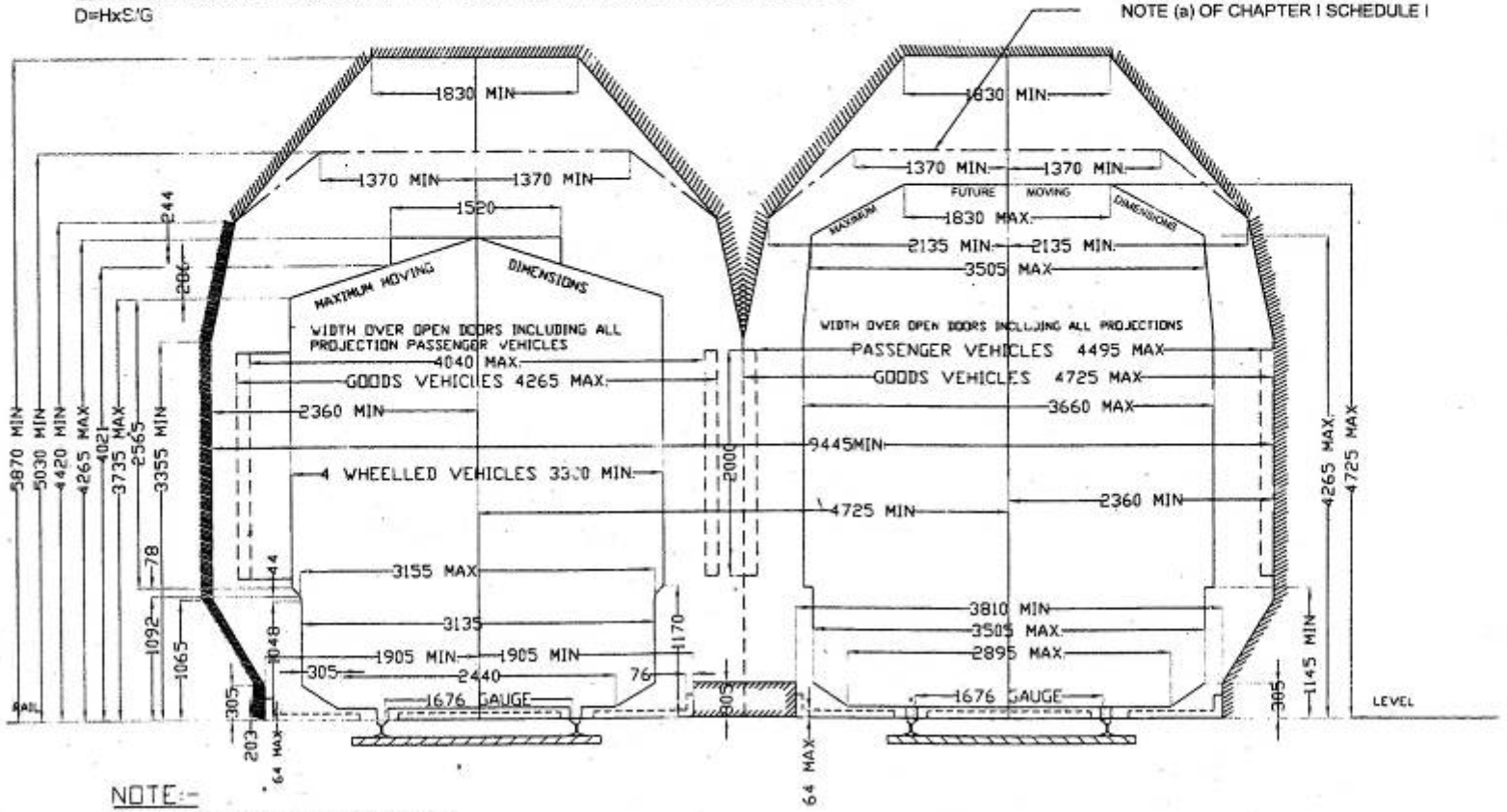
TO SUIT 25 k.V. A.C. TRACTION SCHEDULE I CHAPTER I

DIAGRAM No. 1A (MODIFIED)
1676 mm GAUGE (B.G.)

NOTE:-

THE DISTANCE SPECIFIED APPLY ONLY IN CASE OF STRAIGHT TRACKS ON CURVES. THE HORIZONTAL DISTANCE SHOULD BE INCREASED BY AN AMOUNT 'D' TO ALLOW FOR THE LEAN DUE TO SUPER-ELEVATION CALCULATED BY THE FOLLOWING FORMULA,WHERE 'H' IS THE HEIGHT OF THE CONTACT WIRE,AND 'S' THE SUPER-ELEVATION AND 'G' THE GAUGE OF THE TRACK, ALL DIMENSIONS BEING IN METRES
D=HxS/G

NOTE:- THIS CHAIN DOTTED LINE INDICATES THE MINIMUM OUT LINE WHERE ELECTRIC TRACTION IS NOT LIKELY TO BE USED VIDE ITEM 13 NOTE (a) OF CHAPTER I SCHEDULE I



NOTE:-

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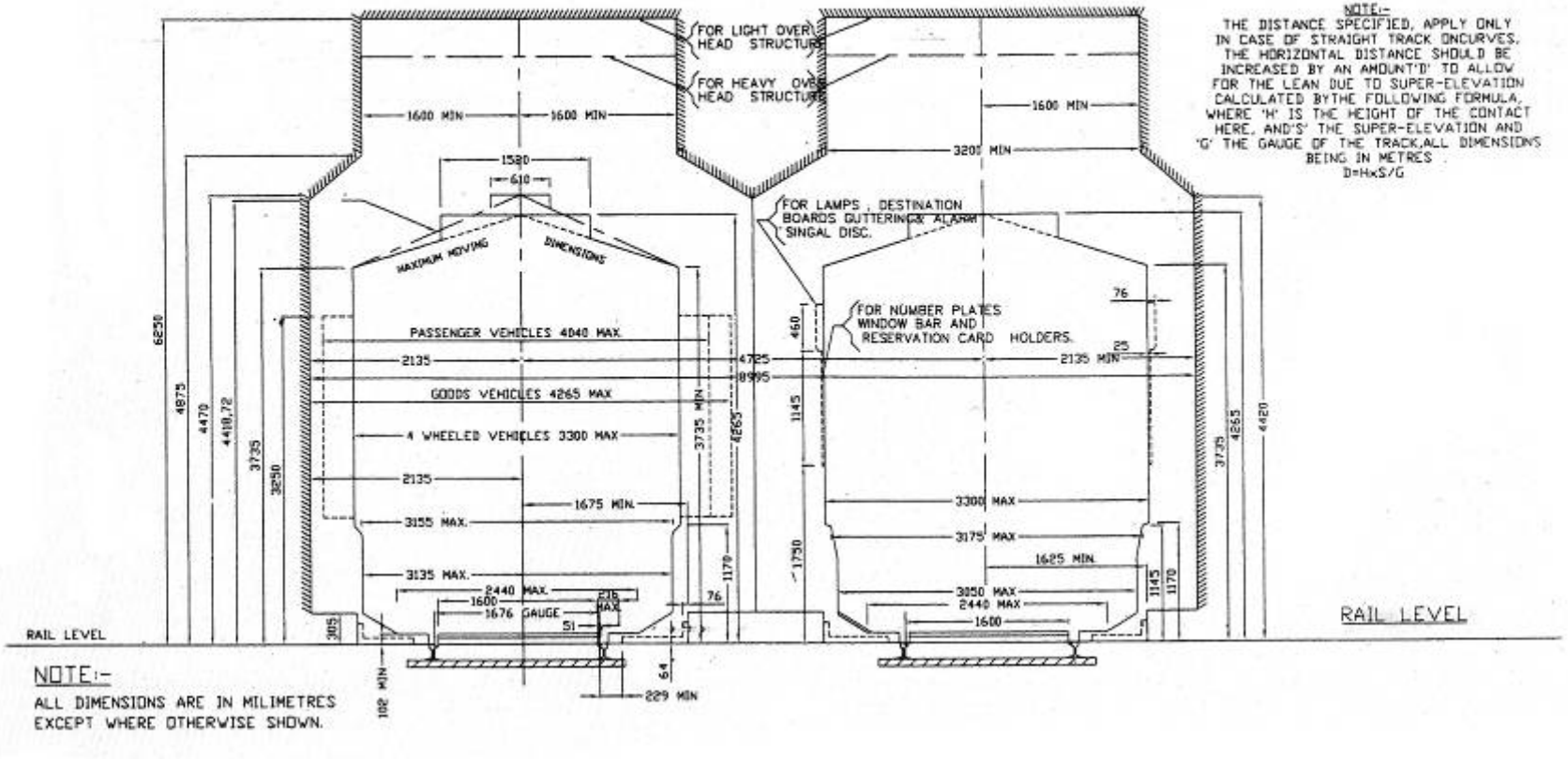
STANDARD DIMENSIONS OUT OF STATIONS
TO SUIT 25 KV.A.C. TRACTION SCHEDULE-I-CHAPTER-I

DIAGRAM NO. 1C
1676 mm GAUGE



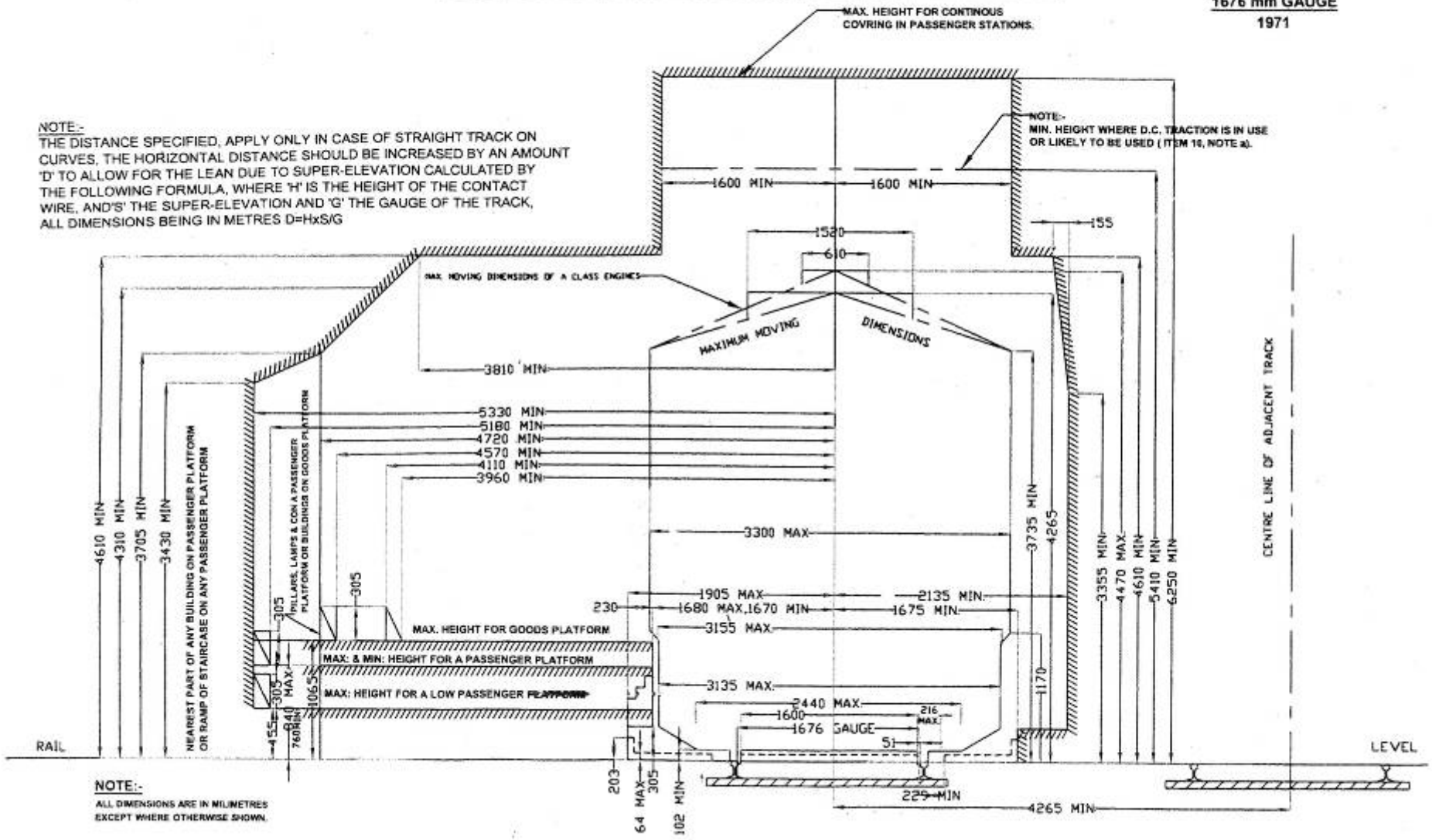
NOTE:-
THE DISTANCE SPECIFIED, APPLY ONLY IN CASE OF STRAIGHT TRACK ONCURVES, THE HORIZONTAL DISTANCE SHOULD BE INCREASED BY AN AMOUNT'D' TO ALLOW FOR THE LEAN DUE TO SUPER-ELEVATION CALCULATED BYTHE FOLLOWING FORMULA, WHERE 'H' IS THE HEIGHT OF THE CONTACT HERE, AND'S' THE SUPER-ELEVATION AND 'G' THE GAUGE OF THE TRACK,ALL DIMENSIONS BEING IN METRES .
D=HxS/G

NOTE:-
ALL DIMENSIONS ARE IN MILIMETRES EXCEPT WHERE OTHERWISE SHOWN.

STANDARD DIMENSIONS IN STATIONS
TO SUIT 25 KV.A.C. TRACTION SCHEDULE-I-CHAPTER-II

DIAGRAM NO. 2
1676 mm GAUGE
1971

NOTE:-
THE DISTANCE SPECIFIED, APPLY ONLY IN CASE OF STRAIGHT TRACK ON CURVES, THE HORIZONTAL DISTANCE SHOULD BE INCREASED BY AN AMOUNT 'D' TO ALLOW FOR THE LEAN DUE TO SUPER-ELEVATION CALCULATED BY THE FOLLOWING FORMULA, WHERE 'H' IS THE HEIGHT OF THE CONTACT WIRE, AND 'S' THE SUPER-ELEVATION AND 'G' THE GAUGE OF THE TRACK, ALL DIMENSIONS BEING IN METRES D=HxS/G



NOTE:-
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THANKS