East Central Railway

Office of the
General Manager (S&T)
Hajipur

No. ECR/S&T/Sig/Policy/200/Pt.IV

Date: 10.05.2018

CSTE/Con/North & South/MHX
Sr.DSTEs/DHN, DNR, MGS, SEE & SPJ
Dy.CSTEs/W/DHN, DNR, MGS &
Dy.CSTE/Proj/HJP
East Central Railway

Sub: Minimum standards for Track, Signalling, OHE etc. for construction of new lines under NGR & JV model of Indian Railways Participative Policy.

Ref: Director/PPP (Civil) RB's Letter No. 2016/Infra/12/1, Dtd.-06.04.2018.

Please find enclosed herewith the above referred Railway Board letter, which communicates approved Minimum standards for Track, Signalling, OHE etc. for construction of new lines under NGR & JV model of Indian Railways Participative Policy.

These standards shall be used as base document for construction of railway projects under NGR and JV Models as per Indian Railways Participative Policy.

This is for your information and necessary action please.

DA: As above (05 sheet)

10/05/18
(P.K.Suman)
Dy.CSTE/D&D-II
***for* GM (S&T)/ECR/HJP**

Copy to: (i) CSTE/Planning, CSE, CSTE/W, CCE/ECR/HJP
(ii)Dy.CSTE/D&D-III, Dy.CSTE/HQ, Dy.CSTE/Signal

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भारत सरकार (GOVERNMENT OF INDIA)
रेल मंत्रालय (MINISTRY OF RAILWAYS)
रेलवे बोर्ड (RAILWAY BOARD)
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रेलवे बोर्ड का पत्र प्राप्ति सं० 19

No. 2016/Infra/12/1

Rail Bhavan, New Delhi
Dated: 06.04.2018

The General Manager,
CR, ER, ECR, ECoR, NR, NCR, NER, NFR, NWR,
SR, SCR, SER, SECR, SWR, WR, WCR and Metro Railway/Kolkata.

The General Manager (Const.), N.F. Railway, Maligaon, Guwahati.

CMD/MD – Konkan Railway, RITES, IRCON, RVNL, CONCOR, MRVC.

Sub.: Minimum standards for Track, Signalling, OHE etc. for construction of new lines under NGR & JV model of Indian Railways Participative Policy.

Ref.: Railway Board's Order no. ERB-I/2015/23/48 dt. 16.11.2015.

Railway Board vide above referred order, had constituted a committee of EDs to prepare a minimum standard for track, signalling, OHE etc. for construction of New Railway Lines under Non-Government Railway (NGR) and Joint Venture (JV) Model under Indian Railways Participative Policy.

Minimum standards recommended by committee has been approved by Board as enclosed. These standards shall be used as base document for construction of railway projects under NGR and JV Models as per Indian Railways Participative Policy.

The document is also available on Ministry of Railways website http://www.indianrailways.gov.in⇨Ministry of Railways⇨Railway Board⇨ Railway Board Directorates⇨Infrastructure

This is for information and necessary action.

DA: As above.

(Arun Kumar Tiwari)
Director/PPP(Civil)
Railway Board

Copy to:
1. PS/MR, PS/MoSR(S), PS/MoSR(G)
2. CRB, FC, ME, MTR, MRS, DG/S&T, Secretary/RB
3. AM/Works, AM/CE, AM/Elect., AM/ME, AM/Sig., AM/Traffic, AM/Fin.
4. PED/Infra., PED/Safety
5. ED/Infra.(Civil), ED/PPP(Tfc.), EDME(Frt.), EDEE(Dev.), ED/Sig.(Proj.)
6. Chief Commissioner of Railway Safety, Lucknow.

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Minimum Standards for construction of New Railway Lines under NGR and JV model of Participative Policy of Indian Railway

SN	Item	Standard	Reference
TRACK			
1.	Formation	(i) Design axle load – ➢ For other than DFC Feeder route- 25 tonne. ➢ For DFC feeder routes- 32.5 tonne (ii) Minimum Formation width – 7.85 m for single line &13.15 m for double line. (iii) Track centre spacing – Minimum 5.3 m (for doubling) – Minimum 7.8 m (for 3rd and 4th line) (iv) Blanketing thickness - As per RDSO guidelines G-14 and RDSO letter No RS/G/ 108/Heavy Axle Load dated 26.10.2015 (v) Embankment soil (Top 1 m) – As per RDSO guidelines G-14 and RDSO letter No RS/G/ 108/ Heavy Axle Load dated 26.10.2015 (vi) Bank/Cutting slope, Berm etc. – To be adopted as per slope stability analysis of the site.	Item no 3 of Recommendation at page no 67 of GE-14 ACS No. 135 dated 07.05.2014 of IRPWM ACS No. 9 dt.16.10.2012 of IRSOD (BG)& Board's letter No. 2011/CE-II/ Form/ Misc. dt. 11.09.15
2.	Ballast	Main line – ➢ For speed > 50 Kmph – 350 mm. ➢ For speed < 50 Kmph – 300 mm Loop line – 250 mm	ACS No.126 dated 21.06.2011 of IRPWM
3.	Sleeper	(i) Type – PSC (ii) Density :– ➢ Mainline – 1660 Nos/Km ➢ Loop lines – 1540 Nos/Km	Para 244(4)(a) of IRPWM LWR Manual Para 4.3.3
4.	Rail	➢ Main line – 60 kg ➢ Loop line – 60 kg/52 kg (Second hand)	ACS – 129 Para 248(2)(a) of IRPWM
6.	Gradient	➢ Ruling – 1 in 100 (after compensation for curve) ➢ In station yards – 1 in 1200	Item No. 2/(ii) of Chapter II of IRSOD – 2004
7.	Road Crossings	(i) National highway/State highway – ROB/RUB. (ii) Major/Other district roads – RUB/LHS of less than 5 m height, width to be as per existing road width (depending upon traffic) (iii) Village roads – Limited Height Subway (LHS) of 4m × 4m or less as agreed by District Administration.	Board's letter no. 2006/CE-IV/LX/ WP/1 dated 09.01.2012.
8	Track Machine	Track Machine siding- 300 m long in 1 or 2 spur, at stations about 30 Km apart.	Board letter No- 2007/Track-III/TK/24 Vol.II dated 14.03.2012

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9	Bridges	Bridges ➢ On other than DFC Feeder route – • Sub- structure - 25 T loading • Super – structure – 25 T loading. ➢ On DFC feeder routes- • Sub- structure - 32.5 T loading • Super – structure – 25 T loading.	Para 2.3.1 (a) of Bridge rules Para 2.3.1 (b) of Bridge rules
10	Turnouts and SEJ	Switches ➢ Running lines – Thick web switches ➢ Yard lines - Over riding switches Crossing - CMS Crossing SEJ - Improved SEJ	
Signal and Telecommunication			
1.	Signal	(i) Multi Aspect Colored Signaling System (ii) Double distant in case the Braking distance is more than 1 Km (iii) Point operation – Electrical (iv) Point Locking – ➢ Running lines – Clamp-lock type high thrust 220 mm stroke Point machine ➢ Yard lines - 143 Stroke Normal Point machine (v) Point detection – Electrical (vi) Lock detection – Yes (vii) Interlocking – Electronic (viii) Track circuiting – DC track circuits/MSDAC depending upon site conditions. (ix) Block working – Tokenless with BPAC/ Block panel **Note** :- The signaling shall be made suitable for 25 KV AC traction. Also suitable for adverse environmental conditions like dust, heat, etc. mostly encountered in mining areas.	ACS No. 6 dated 26.03.2004 of IRSEM Part-I And Railway Board's letter no. 2003/SIG/G/5 dated 28.04.2016
2.	Telecom	(i) Optical fiber cable with HDPE pipe cover (Owned/hired). (ii) Control communications to be provided at all stations and other locations as per requirement. (iii) Data communication infrastructure as mutually agreed. (iv) Means for emergency communication to be provided.	
Electrification – To be provided if the adjoining lines/sections are electrified.			
		(i) SP - One per 50 km. of Route Length (ii) SSP - Two per 50 km. of Route Length (iii) TSS with Associated Transmission Line - One at every 50 km. of Route Length (iv) Tower wagon/car & shed – One per 50 Route Km or100 Track Km. If new line is of less than 50 Route Km or 100 TKm then existing Tower car/wagon may be utilized for maintenance etc. (v) SCADA - If the number of Remote Terminal Units in existing SCADA is less than 50 & total number including that of new line does not exceed 50 then existing SCADA system should be augmented otherwise new SCADA to be provided. (vi) Power line crossings should be as per the provisions of ACTM. (vii) OHE should be as per the standard design of ACTM.	
Mechanical			

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		(i) *In case of POL/Liquid consignments being loaded, TXR supervisor with the assistance of staff of NGR/JV company, would be required for post loading check & assistance in loading. For them one room and store may be provided.* (ii) *In case of Steel loading, TXR examination line with both side pathways to be provided along with one room and store for TXR staff.* (iii) *For loading of special consignments such as Ammonia, facility to be created in consultation with zonal Railway.* (iv) *For detachment of sick wagons etc. one stabling spur of suitable length may be provided.* (v) *In case the section is on diesel traction and the route length of line is more than 300 Km, then space for setting up of Fuelling point may be earmarked at any suitable station.* ***Additional provision in case of coaching services as and when introduced.*** (a) *Only dry sweeping/cleaning arrangement to be kept at the terminating station.* (b) *Stabling line for rake of coaching train only if more than one train are to be stabled otherwise PF line should be used for the purpose and only engine reversal line to be provided.* *Watering arrangement sufficient for the longest coaching train to be operated in the section to be provided at any of the station if either the running time from the last watering station is more than 4 hours or the distance from last watering station is more than 125 Km .*
Operation & Maintenance (O&M):		
		Provision of O&M organization for JV/NGR would be as per KRCL norm – (To be spelt out separately). One number Rail borne Maintenance vehicle shall be provided for every JE/P-way section of about 40 – 50 TKm and a designated home siding with shed for the same shall be provided.
Running room, crew lobby, TTE's rest room etc.		
		➢ *Running room to be provided based on need only if the running time to terminating station from the 'sign on' station is more than 03 hours otherwise only Rest room at station to be provided.* ➢ *In such case, the running room should be combined for driver & guard and the crew lobby/booking point should be provided at its reception to minimize the requirement of manpower for manning such points.* ➢ *No. of beds in the running room to be decided based on nos. of trains.* ➢ *In case of Coaching train operation in the section is mutually agreed, TTE's rest room should also be provided in one or two rooms of the same to minimize the requirement of caretaker, booking staff etc.*
Residential and Service buildings		
		➢ *Supervisory staff of Railways posted in the section would be provided company/rented accommodation.* ➢ *For assessment of provision of accommodation, Railways will indicate the no. of supervisory staff proposed to be posted in the section.*

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Operating and Commercial		
		(i) As mostly these lines will be freight oriented, minimum number of stations to be provided as may be operationally required. However provision like level stretch (or grade up to 1 in 1200) for about 2 Km length at every 10-15 Km (keeping in view the habitat area) should be kept for future station development. *(ii) At loading stations, if no. of rakes to be loaded per day is upto 06 (with engine on load) or upto 03 (without engine on load), then 02 full length lines in addition to loading/unloading lines are required- one for rake stabling and other for engine reversal. For every increase of 06 rakes (with engine on load) and 03 rakes (without engine on load), one additional stabling line may be required.* *(iii) In case of Coaching train operation in the section is mutually agreed, Minimum Passenger facilities required for "E" class stations as per the existing guidelines should be provided.*
General		
		Such equipments/machines (either for construction or for maintenance such as Road vehicle, Rail cum Road Vehicle, Track Machine, Wiring train, BD Crane/Truck etc.), which can be hired /outsourced, should not be incorporated in the cost estimate.

Note: 1. For lines connecting to DFC/other IR routes, standards may be decided on case to case basis keeping in view the technical requirements and traffic load flow pattern in that route.

2. For Rail systems providing any PFT (Private Freight Terminal), the standards/facilities to be created shall be decided on case to case basis keeping in view the technical requirements and traffic handled.

3. With respect to above items if any further correction slips/guidelines issued by department concerned after notification of these minimum standards, the provision of correction slip should be followed.

4. The design and construction will conform to IR SOD, codes, rules, manuals and Guidelines.