

SPECIAL CONDITION OF CONTRACT FOR TRACK WORK

- 1.0 For the propose of measurement 10 points crossing shall be equal to 01 km. of track and track on curve and straight will be paid as the centre line running meter.
- 2.0 P.Way materials issued to contractor will be balanced against those put in track, in case, of any discrepancy loss of materials will be contractor's liability and cost will be recovered on the basis of following formulas.
Twice the prevailing procurement cost at the time of lost issue viz. 2x (purchase price +5% Freight only)
- 3.0 Technical specification for track work shall conform to following publications/ drawing with upto date correction slips in addition to present special condition.
- (a) Technical publication of IRICEN/PUNE regarding
 - (i) Quality control of track lifting
 - (ii) Care of rail joint.
 - (iii) Maintenance of points & crossing
 - (iv) Maintenance of curve.
 - (v) Book on LWR
 - (b) Technical publication of RDSO
 - I Track manual part-I 1980
 - (d) Track manual part-I 1989
 - (e) Technical drawing issued by RDSO or GM/Engg/GKP
 - (f) Indian Railway permanent way manual.
 - (g) Schedule of dimension on BG
 - (h) Indian Railway track publication published by Jain Book agency and written by M.M. Agrawal, publication of RDSO, IRIATT, IRICEN PUNE, Rly. Board & GM/Engg/GKP and circulars thereof.
In case of contradiction in the above reference decision of Engineer in charge shall be final and binding of contract.
- 4.0 The tenderer must inspect the site of work to assess location of materials to be brought for the work and acquaint himself with the area, availability of labour, camping facilities and all other factors which will have bearing on this work before quoting his rate. Tendered rate shall include all such works & charges incidental to work and contractor shall make his own arrangement for labour, Transportation, labour camp, electricity, water, tools & plants, consumables etc. for base depot as well as at other site of work.
- 5.0 The contractor shall not start any work on the track under traffic conditions without the presence of Railway supervisor. In case the contractor or his representative starts any working in absence of the supervisor, it shall be treated as unauthorized and illegal tampering with the track and shall be liable for action under the Indian Railway's act.
- 6.0 Not with standing the provision of clause 62 of General Condition of Contract, the railway reserves the right to terminate the contract with immediate affect if the contractors found responsible for any breach rule, which effects the safe running of trains without giving any notice to the contractor.
- 7.0 In case any train is detained at the approach of work site or at station on account of its passes being considered unsafe by railway's supervisor due to bad workmanship of contractor or track parameters being unsatisfactory for safe passage of trains, or due to work being delayed by the contractor, the railway shall be entitled to recover detention charges from contractors bill or security deposit or any other dues and, at the, rate of Rs.5000/- per hour of detention or part thereof for the train so detained at the work site or at the adjacent stations due to delay in clear traffic block. Detention to trains as determined by the railway shall be final and binding upon the contractor.
- 8.0 In case an accident occurs at the work site the finding of Enquiry Committee set up by the Railway to investigate the case of accident shall be final and binding on the contractor. If contractor is held responsible for the accident, the contractor is liable to be terminated forthwith notwithstanding the provisions of the General Condition of Contract.

- 9.0 Irrespective invoking provisions mentioned as above or otherwise, penalty upto an upper limit of 10% of the total cost of the work may be imposed in case an accident occurs due to contractors negligence as decided by the railway whose decision shall be final and binding on the contractor. The contractor is also liable for prosecution if loss of life is involved and shall otherwise be responsible for legal binding
- 10.0 Traffic blocks required to carry out certain works will be arranged by Railways. Actual availability of block vis-à-vis those planned. The wastage of labour if any occurring on account of non availability of block would not be paid so far. No claims on such account shall be considered.
- 11.0 The contractor shall proceed with the working in systematic manner so as to ensure that stretch of track under speed restrictions and its duration are the minimum. The decision of Engineer in this respect shall be final and bindings.
- 12.0 The work shall be carried out in such manner that in no infringement to the Railway's schedule of dimension occur.
- 13.0 The railway shall arrange the protection of track(s) by their staff. In addition the contractor may arrange for "LOOK OUT MAN" to warn his workers. No compensation will be paid by Railway in case of injury or death to contractor's workers and contractor shall indemnify the Railway of any responsibility in this regard. The contractor may obtained Group Insurance in respect of his workers.
- 14.0 At each work site, the contractor shall employ and post one technical Supervisor who would have adequate experience in execution of track works. The name, technical qualification and detail of experience of the technical supervisor so employed shall be advised to the Engineer.
- 15.0 If in the opinion, of the engineer the supervisor employed by the contractor is not considered fit to be in charge of the work, he shall be replaced forthwith. In this matter, decision of the Engineer will be final and binding of the contractors.
- 16.0 The contractor's technical supervisor shall be present at work site, at all time when the work is being executed. The contractor shall employ adequate number of workers to be given consistent and desired progress per day.
- 17.0 Maximum Number labours will deployed by the contractors at site of work & also ensure the availability at site all time during execution of work to achieve optimum progress of work in case of deep screening CTR, TSR and TRR.
- 18.0 The contractor shall arrange for the safe custody of the Railway materials supplied /hired to him. In case of loss of Railway materials the railway will recover the cost.
- 19.0 Site order Books, progress register and materials issue resister shall be maintained at site. Entries will be recorded on day today basis in the register and signed jointly by railway supervisor and contractor or his authorized representative. All details of stretches under various stages of work, different stages of packing, imposition and removal of speed restrictions, measure of track parameters, accountal of released materials etc shall be recorded therein.
- 20.0 For executing the work the contractors has to arrange his own tools, and equipments, unless otherwise sated in the schedule. Railway shall provide equipment, which are specifically mentioned in the description/specification of items in the schedule. In all other cases, hire charges as per extant rules for the tools, plant and equipments supplied by the railway to the contractor will be recovered from his bills/security depositor any other dues, on the basis of rates fixed by the Railway.

21.0 LOADING & UNLOADING

- 21.1** Unloading at the station yard has to be complied within free time as stipulated by commercial department of railways, unloading in the block section shall be done under a single traffic block of three hours or two traffic block's 2 hrs each. This time is for 15BFR (BG) of rails and or 60 four – wheeler wagons (BG) of other materials.
- 21.2** Contractor shall remain in touch with station staff, inspector of Engineering department and Engineer Incharge and keep himself ready for loading, unloading of materials as and when they arrive. This is essential to enable contractor to arrange labour for loading and unloading of material by contractor in time.
- 21.3** If contractor fails to remove infringement Railway will deploy labour without any notice and cost of such work of clearing infringement after unloading will be recoverable from contractors on account bill or other payment due and the rate and cost decided by Railway for such items will be final and binding on contractors.
- 21.4** In case of loading/unloading from railway wagons, all commercial formalities shall be observed. All demurrage/Wharfage charges accruing due to negligence of contractors will be recovered from his bill.

- 21.5** Loading/Unloading of Rails /Sleepers /P.Way fittings shall be carried out as per relevant provisions of the Indian Railway's permanent Way manual and the extant instruction.
- 21.6** When the materials are being moved in mid section under para 1120 of permanent way manual by materials by material lorry it would be necessary that movement be permitted strictly under the control of railway's representative who has the necessary lorry/trolley certificate. When materials are moved on materials lorry under para 1120 (A) of Indian Railway permanent way Manual without block protection, unloading/Loading material lorry in the mid section may become necessary to permit movement of trains. Such incidental loading /unloading (s) in the mid section do not entail measurement for payment.
- 21.7** The wagon/track shall be loaded in the safe and proper manner not exceeding their capacity. No uneven loading shall be done.
- 21.8** All materials after unloading shall be stacked as per provision of Indian Railway permanent way Manual.
- 21.9** It shall be ensured that the unloaded materials do not infringe the Railway's schedule of dimension.
- 21.10** In case of loading/unloading in block working, the availability of adequate strength of workmen so as to complete the work in the by lock time granted shall be ensured.
- 21.11** It shall be ensured that after unloading in block working the availability of adequate strength of workmen so as to complete the work in the block time granted shall be ensured.
- 21.12** Whenever, concrete sleepers are loaded into wagon/trucks wooden batten of specified size shall be placed between the tiers of sleepers (including blow the bottom most tiers) to facilitate convenient handling.

22.0 Cutting of Rails:

- 22.1** The above items of work envisages cutting of rails/running of track as specified in the schedule at isolated location, railways nominated depots with complete handling of rails and all incidental work.
- 22.2** The measurement for payment shall be for each complete cut at the specified points.
- 22.3** The work shall be carried out as per provision in permanent way Manual.
- 22.4** The cut shall be made in plane at right angle to foot as well as the running edge of the rail.
- 22.5** The burr, if any shall be removed. Jim crowing and or flame /Gas cutting are forbidden. Use of zimcrow to aid cutting is forbidden.
- 22.6** Cutting should preferably be done with rail cutting machines. However, hand cutting with hacksaw may be permitted by Engineer in charge.
- 22.7** Proper jig may be used to ensure a perfectly vertical cut.
- 22.8** Cut ends will be collected and stacked at places indicated by Engineer-in charge and will remain under custody of contractor till handed over in the store of permanent Way Inspector in charge of work. Any loss of cut ends will be contractor's liability and cost is recoverable from contractor.

23.0 DRILLING IN HOLES:

- 23.1** The above item of work envisages drilling and chamfering of holes of proscribed diameter in rails on cess/running track as specified in schedule at isolated location /nominated Depot/stacks complete with handling of rail and all incidental works.
- 23.2** The measurement for payment shall be for each hole drilled and chamfered in rails.
- 23.3** The work shall be carried out as per the railways slandered drawing and or as given in the Indian Railway's Track Manual and provision in Indian Railways permanent Way Manual.
- 23.4 THE FINISHED DIAMETER OF THE HOLE IN THE RAIL SHALL BE AS FOLLOW.**

Rail section	Hole in dia
60 kg, 52kg, 90R & 75R	32mm
60R.	28mm

- 23.5** Punch or running /drifting shall be permitted.
- 23.6** After drilling the hole, the same shall be chamfered with chamfering tools to remove burr and for work hardening the hole.
- 23.7** The use of flame /Gas cutting equipment is forbidden.
- 23.8** Holes will be drilled generally by Rail drilling machine electric drills. However, in exceptional cases drilling hole manually using bits shall be restored with specific approved of Engineer in charge.
- 23.9** Holes should be at proper distance and location, both in vertical and horizontal plane and as per standard profile.
- 23.10** No tolerance in location or dia is permitted.
- 23.11** Holes should be burr free.

23.12 No payment will be made for improper work and decision of Engineer in charge will be final and binding on contractor.

24.0 PAIRING RAILS

24.1 Pairing including putting Rails/Rail panels on either side of existing track under direction of Engineer in charge.

24.2 Sites where rails can not be put to end due to obstruction like bridges, level crossings etc., equal length of rails/rail panels will be placed on either side of obstruction.

25.0 REMOVING EXISTING RAILS/RAIL PANELS FROM TRACK

25.1 The above item of the work envisages removing existing rails/rail panels from existing track at various locations complete with removal of rail sleeper, fastening, Fishplate bolts etc, and all incidental works.

25.2 The work shall be carried out as per the Railway's standard drawings provisions in Indian Railway permanent way Manual and extant instructions.

25.3 The work shall involve Fish bolts, Fishplates, sleepers, rails fastening and removing the rail from the sleepers and placing ;lit at a ;safe; distance away from the track.

25.4 The rails removed from the track should be cleared from the existing track so as not to infringe the Railway's schedule of dimension.

25.5 Fish plates, bolts, nuts clips and keys etc, removed during the operation shall be stacked properly at the location specified. Payment for extra leads, if any shall be under the relevant items of the schedule.

26.0 LAYING &FIXING RAILS/RAIL PANEL.

26.1 The above item of the work envisages laying and putting rails of section as specified in the schedule and fixing rail sleeper and fitting etc. including all leads, lifts/descents etc. and all incidental work.

26.2 The work shall be carried out as per the Railway's standard drawings, provisions contained in Indian Railway's Permanent Way Manual and extant instruction.

26.3 WORK WILL INVOLVE

- (i) Laying and fixing pre drilled and pre cut rails on previously laid sleepers as per Railway's drawing and / or as per extant instructions.
- (ii) Rails / Rail panels of equal length shall be used in pairs for laying and fixing.
- (iii) Rail joints shall be square to alignment while on the curved alignment cutting of inner rails shall be done at suitable intervals with lead of inner rails equal of half pitch. (Cuts to be paid as separately)
- (iv) Fixing Fish plates and Fish bolts and other rails and rail sleeper fastening, as per Railway's drawing and / or as per extant instructions. The fish bolts required shall be supplied free by Railway.
- (v) Hammering of fish bolts is prohibited. The fish bolts shall not be over tightened & shall be tightened with standard spanner/torque spanner. The inner two fish bolts should be tightened first.
- (vi) Fixing keys, clips and other rail and rail sleeper fastening to obtain gauge as per Railways drawings and/or as per extant instruction.
- (vii) In case of laying and fixing rails / rail panels on concrete sleepers, this work will include fixing grooved rubber pads, liner and elastic rails clips and as per extant instructions.
- (viii) The frozen (gapless) joints are required to be provided at specified locations such as at combination fish plates, joints behind.
- (ix) It shall be ensured that the handling of rail is as per extract instructions and shall not infringe the Railway's schedule of dimension.
- (x) Use of kinky rail may be avoided.
- (xi) Marking of rails with punch chisel is prohibited.
- (xii) The driving of keys/clamps shall be done with a standard keying, hammer / approved mechanical means.
- (xiii) The above operation shall be completed on the base rail first it shall be first aligned and fixing in position before the other rail is fixed on the gauge as stipulated.
- (xiv) The gauge shall be as per para 403/221 of the Indian Railway Permanent Way Manual or as per extant instructions. Minor lifting up to 25 mm. and packing & leveling the track required should be carried out.

27.0 INITIAL PACKING:

- (i) One side rail (sighting rail) should be lifted to proper level and grade according to level pegs provided and every 6th sleeper should be packed to retain track level.
- (ii) Other side of rail should then be lifted to give correct cross level and every 6th sleeper should be packed like on item above to retain in level.
- (iii) Sufficient ballast should be pulled in from cess my means of ballast rakes to provided for packing of each sleeper and filling crib up to bar level in between the rails.
- (iv) Each sleeper should be thoroughly packed; adequacy of packing should be checked by ensuring full ballast.
- (v) Gauge should be re-checked on each sleeper and corrected where necessary and as directed by Engineering's representative.
- (vi) Fastings should be checked and tightened as and where necessary.
- (vii) Alignment, if disturbed should be corrected with reference to center line pegs and where necessary.
- (viii) Further ballast should be pulled in to make up shoulder profiles and should be dressed to the prescribed profiles with proper side slopes. Railways will provide profile.
- (ix) Cess should be tidied upto satisfaction of Engineer in Charge.
- (x) Packing of track in curves, level crossing and points & crossing shall conform to standard and specification laid down in reference codes / Manual etc.

28.0 QUALITY CONTROL SPECIFICATION:

Generally the standard shall conform to provisions contained in various codes/manual drawings etc. as referred above. However, few points are as under:

- (i) For fish bolt holes permissible tolerance in position and diameter of hole shall be only 0.8 mm for individual holes and with respect to standard position and diameter.
- (ii) Tolerance in length of rail shall be 10 mm.
- (iii) Location of joint on bridge, level crossing and approaches shall be as per Indian Railways and Works Manual.

29.0 QUALITY IN BG

The following laying statement of track geometry measured in floating condition after completion, linking, initial packing and boxing should be achieved.

(a)	Gauge	Sleeper to sleeper variation.		+ / - 2mm
(b)	Expansion Gap	Over average gaps working out by recording 2 successive gap.		+ / - 2mm
(c)	Spacing of sleepers	With respect to theoretical spacing.		+ / - 2mm
(d)	Cross level	To be recorded on every 4 th sleeper		+ / - 8mm
(e)	Alignment	On straight on 10 m chord		+ / - 2mm
		Variation over theoretical versine on 20 m chord for curve having radius.	More than 600 m	+ / - 5mm
			Less than 600 m	+ / - 10mm
(f)	Longitudinal level	Variation in longitudinal level with reference to approved longitudinal section.		50 mm.

For this purpose track laying Register shall be maintained as per perform supplied by Engineer in charge. Track parameter will be checked jointly by contractor & Engineer in Charge and will be recorded in track laying Register. Contractor shall provide all tools, measuring tools and all other facility for inspection to the Engineers.

30.0 TRACK QUALITY STANDARD ON RELAYING/DEEP SCREENING AT SITES:

- 30.1 The above item of work envisages packing/through packing of sleepers as per the Railway requirement and or as per extant instructions.
- 30.2 The work of packing/through packing etc is incident to other items of track works such as deep screening/TSR/TRR/TTR/CTR etc. and the track standards as per prescribed here in will have to be attained.
- 30.3 The work shall be carried out as per provisions contained in Indian Railways Permanent Way Manual. It is preferable to use approved type of tampers.

- 30.4** The packing of sleepers shall be specified for conventional maintenance by Beater packing and as enumerated in para 224 of I. R.'s Permanent Way Manual. It is preferable to use approved type of tampers on largest ratches to achieve better quality in case of packing of stretch exceeding 20 continuous sleepers. This work shall also include all operation of through packing as specified in para 224 of IRPWM but in case of concrete sleeper track, packing shall be done by Mech. Means.
- 30.5** The track parameter, which should be attained on a relying work with new materials and deep-screening works, should conform stipulations of para 316 c IRPWM and as per extant instruction.
- 31.0 DEEP SCREEING OF TRACK:**
- 31.1** The above item of work envisages deep screening ballast below the bottom of sleeper as required for disposal of muck / spoils within a lead of 100 meter and lifts / descents. The procedure for doing the work has been described in para 238 read along with part of chapter 2 IRPWM and other extant instructions.
- 31.2** The work of deep screening is to be carried out under a speed restriction of 20 KMPH without traffic blocks.
- 31.3** The work will include removing ballast including the core below the sleeper and excavating up to prescribed depth below the bottom of sleepers. Using portable ballast cleaner/inclined ballast screens should screen the ballast removed. Muck / spoils should be disposed off suitably for ensuring proper drainage of track.
- 31.4** The excavation should be so carried out so as to ensure that the cross slope 1 to 40 is provided. The excavation should be over the entire width of formation.
- 31.5** The track shall be surveyed in advance and pegs indicating the final level should be provided at 30 m intervals. The rail level after deep screening shall be ensured to the level as indicated on the pegs.
- 31.6** Wooden block/temporary supporters required for the work shall be used.
- 31.7** The contractor shall proceed with the work in systematic so as to ensure that stretch of track under speed restrictions and its duration are the minimum.
- 31.8** The decision of the Engineer-in-charge in this respect shall be final and binding. On deep screening and lifting site, a minimum average progress of 100 m of deep screening / lifting for each working day shall be ensured over a period of a month. A penalty equal to 2% of the cost of shortfall in the cumulative progress on such account shall be worked out at the end of every month from the date of commencement of work and deducted from contractors running bills.
- 31.9** On deep screening sites the contractor may be required to handle additional ballast which might have been put in during the intervening period. Notching extra shall be paid for handling the additional ballast in all such cases.
- 32.0 LIFTING OF TRACK:**
- The above item of work envisages lifting of track on ballast so as to ensure that desired clean ballast cushion below bottom of sleepers as achieved. Lifting of track shall be done in accordance with para 233 of Indian Permanent Way Manual. Rising in excess of 75 mm will be done in stag of 75 mm.
- 32.2** The measurement of payment shall be per meter of the track lifted and accepted by the engineer or his representative whose decision in this regard shall be final and conclusive. The work would envisage lifting of track, on ballast so as result in to raising up to prescribed rail level. The extent of raising will be indicated in the relevant item of schedule. The extent of raising will be specified for various stretches, by the Engineer-in-charge. The extent of raising (in cms) shall be measured under the two rail seats and average taken for the portion lifted.
- 32.3** The work shall be carried out as per provisions contained in IRPW Manual and or Railway drawing and extant instruction.
- 32.4** The work of lifting is to be carried out under speed restriction of 20 KMPH without a traffic block under supervision of the Engineer or his representative.
- 32.5** The work of lifting should be carried out per procedure described in para 233 IRPW. The schedule of relaxation of speed restriction will be as given in Table under para 238 of IRPWM. Any deviation from this procedure should have the approval of the Engineer, which should be recorded in the site order Book.
- 32.6** The track will be surveyed in advance and the Railway's Engineer will provide pegs indicating the final level at 30 m interval. The contractor shall maintain the rail level after lifting to the level as indicated on the pegs or as directed by Engineer.

33.0 MANDATORY PRECAUTION IN THE TRACK WORK:

The contractor shall not allow any road vehicle belonging to his or his suppliers etc. to ply in railway land next to the running line. If for execution of certain works viz. earth work for parallel railway line and supply of ballast for new or existing rail line gauge conversion etc. road vehicles are necessary to be used in railway land next to the rail line, the contractor shall apply to the Engineer-in-Charge for permission giving the type & no. of individual vehicles, names & licence particulars of the drivers, location duration & timings for such work/movement. The engineer in charge or his authorised representative will personally counsel, examine & certify, the road vehicle drivers, contractor flagmen & supervisor and will give written permission giving names of road vehicle drivers contractors flagmen and supervisor to be deployed on the work, location period and timing of the work. This permission will be subject to the following obligatory conditions.

- (i) The road vehicles will ply only between sunrise & sunset.
- (ii) Nominate vehicle & drivers will be utilized for work in the presence of at least one flagmen & one supervisor certified for such work.
- (iii) The vehicles shall ply 6 m clear of track. Any movement/work at less than 6 M and up to minimum 3.50 M clear of track center, shall be done only in the presence of railway employee authorised by the Engineer in charge. No part of the road vehicles will be allowed at less than 3.5 M from track center. Cost of such railway employees shall be borne by the railway.
- (iv) The contractor shall remain fully responsible for ensuring safety & in case of any accident, shall bear cost of all damages to this equipment & men and also damages to railway & its passengers. Engineer in charge may impose any other condition necessary for a particular work of site.

34.0 Safety working of Contracts: As per Para No.826 Chapter VIII of the IRPWM 1986 -

A large number of men and machinery are deployed by the contractors for track renewals, gauge conversions, doublings, bridge rebuilding etc. It is therefore essential that adequate safety measures are taken for safety of the trains as well as the work force. The following measures should invariably be adopted:

- i. The contractor shall not start any work with the presence of railway supervisor at site.
- ii. Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work there is not infringement to the railway's schedule of dimensions. For this purpose the area where road vehicle required to ply shall be demarcated and acknowledged by the contractor. Special care shall be taken for vehicles/machinery without infringing the running track. Banning shall be provided wherever justified and feasible.
- iii. The look out and whistle caution orders shall be issued to the trains and speed restrictions imposed where can flagmen/detonators shall be provided where necessary for protection of trains.
- iv. The supervisor/workmen should be counseled about safety measures. A competency certificate to the contractors shall be issued by ADEN which will be valid only for the work for which it has been issued.
- v. The unloaded ballast/rails/sleepers/other P. Way materials after unloading along track should be kept clear off move as per the specified heights and distance from the running track.
- vi. Supplementary site specific instructions wherever considered necessary shall be issued by the Engineer-in-Charge.

TECHNICAL SPECIFICATIONS AND CONDITIONS

35.0 General Terms:

- a. The contractor has to visit Bridge no.78 and 120 between BUW-STP section site for better appreciation of quantum and requirements of work and quote his rate accordingly.
- b. The work includes renewal of channel sleepers by H-Beam sleepers and supply of all fittings & fixtures excluding rubber / elastomeric pads as per approved drawings and specification.
- c. No drilling, cutting, punching or exposing the bare metal, welding etc., will be permitted after galvanizing.
- d. Execution of all items is governed by General and Special conditions of Contract.
- e. Tenderer should carefully study all the General / Special conditions and specifications accompanying the tender schedule / form in general and get himself / themselves acquainted with the site conditions.
- f. In case of any deviation from standard RDSO drawing, contractor will have to prepare detailed manufacturing, assembling & fixing drawing and submit the same for approval before commencement of work.

- g. Mistakes in drawing: - The Contractor shall be responsible for and shall pay for any alterations for the works due to any discrepancies, errors or omissions in the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the Railway Administration or not provided that such discrepancies, errors or omissions be not due to inaccurate information or particulars furnished to the Contractor on behalf of the railway. If any dimension figure upon a drawing or plan differ from those obtained by scaling the drawing or plan, the dimensions as figured upon the drawing or plan shall be taken as correct.
- h. Contractor has to follow the relevant RDSO drawing and specifications for H- Beam and its fitting as per site requirement. No extra rate shall be paid for any special type fixture or fittings, other than that are been taken in NS item schedule.
- i. H- Beam sleeper may have to be fabricated for **60 kg / 52 kg** running rail (main rail) / guard rail or any other combination as per instruction of Engineer in-charge or his representative.
- j. Galvanizing of entire fabricated H- Beam sleeper along with all MS fittings i.e., hook bolts, clips, nut bolts etc., shall have to be done by hot dip galvanizing method as per the specifications mentioned in the tender document/approved drawings and specifications.

35.1 SCOPE OF THE WORK:

1. The scope of work detailed hereinafter is an outline of the services expected from the contractor. It is not the intent to specify all the minute details of the services expected. All items which are required for the design, manufacturing, Supply & fixing of the Steel H-Beam Sleepers and associated ancillary works are deemed to have been included in the scope and details of the work whether explicitly mentioned or not. The contractor is expected to adopt all necessary measures and complete the required work in every respect to ensure smooth and timely planning and execution of the work.

The scope includes renewal of channel sleepers by H-beam sleepers to RDSO Drg. RDSO / B-1636/4R, B-1636/5 & B-1636/9 with in up to date alternations/correction slips/specifications and other suitable drawings for track circuited / Non track circuited locations by removing of track and old sleepers with fittings. (drawings are available in DRM(Engg) office, at Lucknow and or may be procured from RDSO / Lucknow.

35.2 DESCRIPTION OF THE WORK:

The girder bridges are provided with channel sleepers, which are to be replaced with galvanized steel H-Beam sleepers to the RDSO drawing. Work will be in running lines and is required to be carried out under traffic blocks. The existing track on the bridge will be dismantled during the block, the track on channel sleepers will be removed and new steel H-Beam sleepers along with all its fittings will be fixed. The running rail and the guard rail will be fixed/ re-fixed before clearing of the block.

This work is to be executed at (Br. No. 78 and 120 between BUW-STP section, however girder bridges may be spread over entire division and contractors are advised to get themselves familiarized with the site conditions before participating in the work. Proposed bridge is however subjected to modification at a later stage, which will not induce any change in structure of agreement.

Following Specifications shall be followed with upto date correction slips/specifications/drawings:

-

1. RDSO Specification No. BS-45 for fabrication of sleeper
2. IS-4759 for hot dip galvanizing process
3. Indian Railway Bridge Code as corrected up-to-date.
4. Indian Railway Welded Bridge Code 1972.
5. Indian Railway Schedule of Dimension for Broad Gauge – 2004 within upto date correction slips.
6. IS-2062, Specification for structural steel standard quality.
7. Indian Railway Specification B-1, 2001. Fabrication and erection of Steel Girder Bridges.
8. IS:1929 for Rivets.
9. IS: 2155 - 1962. Rivets for general purposes (Below 12mm dia Meter).
10. IRS H-19. For Bolts & Nuts.
11. IS: 102 - 1962. Ready mixed Paint, Brushing red lead non-setting priming.

12. IS: 2339 - 1963. Aluminum Paints for general purposes in dual container.
13. IS: 123 - 1963. Ready mixed Paints, Brushing, finishing semi glass for general purposes to Indian Standard Colors. Red Oxide.
14. BSS 916 and /or IS: 1963-1967. Black Hexagonal Bolts/Nuts etc. and Lock nuts(6 to 39 mm) and Black Hexagonal Screws (Dia 6 to 24 mm).
15. IS: 800 - 1984.
16. IS 3063 For spring washer
17. IS: 1148 - 1973. Hot Rolled Steel Rivet Bars for structural purposes.
18. IS: 2062 - 1992. Steel grade for Welded Structures.
19. IS CODE No.1759-1984 & IS-2629-1985 for hot dip galvanizing process
20. Any other specification/drawings found relevant for fabrication of steel H-Beam sleeper & its fittings.

The tenderer shall maintain a master-steel tape of approved make for which he has obtained a certificate of accuracy from the National Laboratory. Rolled materials before being laid off or worked, must be made straight if straightening or flattening is necessary, it shall be done by method that will not damage the material. Sharp kinks and bends shall be rejected.

Any hole if required in the fabrication will be either drilled or gouged and chamfered with suitable chamfering tool. However, punching is permissible in canted bearing plate only. Punching or use of gas for making holes shall not be permitted. No cutting, drilling or any other operation exposing the bare metal shall be permitted after the fabricated H-Beam sleeper is galvanized.

Contractor shall be fully responsible for quality & dimensional accuracy of steel H-Beam sleepers. Any acceptance, approval or passing by railway administration of sleeper or of the materials incorporated therein shall not in any way limit the contractor's liability thereunder.

The responsibility for obtaining all raw materials from approved sources required for the manufacture and fixing of Steel H-Beam Sleepers shall rest entirely with the contractor. Raw materials shall be conforming to specification mentioned, elsewhere in the tender document and shall have to be procured from RDSO approved firms where ever such approval is available. All fittings like elastomeric/rubber pads, bolts, nuts, cleats, packings etc., supplied and fitted under relevant schedule shall be procured from RDSO approved firms and inspected by RDSO/Engineer in-charge or his authorized representative/ RITES (inspective authority shall be as mentioned in the tender schedule items) as per latest RDSO guidelines for inspection.

35.3 FABRICATION OF H-BEAM SLEEPERS.

1. Fabrication of H-Beam Sleepers shall be done at bidder's own workshop with his own tools, plants, machines and consumables as per RDSO's Drawing Nos. B-1636/4R, 5 ,9 and other drawings mentioned therein and as per RDSO's specification No. BS:45. H-Beam Sleeper should be made of standard rolled section IS HB-200 @37.3 kg/m conforming to IS:2062 and MS Plates to IS:2062 as per approved drawings and specifications. The H-Beam Sleepers and all the required MS fittings shall be galvanized as per IS:4759.
2. The test on sleepers should be done as per RDSO's guidelines. The Agency will arrange to conduct test as per RDSO's guidelines on completed H-Beam Sleepers. All the specifications used in fabrication and manufacturing of Channel sleeper as per BS-45, will be maintained in manufacturing of H-Beam sleeper, with updated IS specifications and latest RDSO's guidelines/specification.
3. The fittings of H-Beam Sleepers shall be inspected Engineer in-charge or his authorized representative not below the rank of ADEN/RDSO/RITES as mentioned in tender schedule items and as latest RDSO guidelines for inspection and used only after certification. The charges for any special testing or chemical analysis during this inspection will be borne by the Agency. The required fittings like elastomeric pads of steel sleepers shall be procured from RDSO approved sources and their inspection certificate (inspection shall be as mentioned in the tender schedule items) by RDSO/Rites shall be produced before use. The testing and test on the sleepers should be done as per RDSO specifications/guidelines for H-Beams and as mentioned above.

35.4 TRACK LINKING WITH H-BEAM SLEEPERS.

1. For linking of track on girders the provisions in the IRPWM-2020, IRICEN Pune's publications on quality control in the track linking, track circulars issued by PCE/ North Eastern Railway shall be strictly followed.

2. Design and provision of Guard rail shall be as per para 275 of IRPWM,2020. The end of the guard rails should be bent vertically and buried and a piece of timber fixed on the end of prevent entanglement of hanging loose couplings.
3. The linking of track on girders with H-Beam Sleeper shall be done as per RDSO's drg. No. B-1636/4/R, 5 & 9 and instruction/notes laid therein.
4. The rails and guard rails shall be fastened to sleeper as per RDSO's Drawing No. B-1636/4/R,5&9 and as per Drg. No. T-5155 to 5164. The gangway shall be provided as per RDSO's Drg. No1636/4/R,5&9
5. Complete handling of the rails like cutting, cropping, drilling of holes for the fish bolts, making holes in guard rails for its fixing etc. complete as required as per the approved design & drawings shall be done by the contractor at their cost. No gas cutting of rails will be permitted.
6. Suitable block will be arranged for execution of work. However, contractor will not be entitled to any claim arising out of non-availability of block and idling of labour on some particular day/days.
7. Released material from dismantled track shall have to be transported and neatly stacked at the nearest station or site as directed by Engineer-in-Charge or his representative. Rate of this item includes all work required in connection with transportation and stacking.
8. SLEEPER SPACING: - Maximum center to center sleeper spacing should be 600mm, except at the location of cross girders. The clear distance between two sleepers of cross-girder location should not be more than 450 mm. The clear distance between joint sleeper should not be more than 200 mm. If the spacing is beyond this specified limit, no payment will be made to the contractor. However, in case of welded joints the standard sleeper spacing may be varied by the Railway's representatives.

35.5 TEST CERTIFICATES:

1. All materials for the work shall pass tests and / or analysis prescribed by the relevant IS specifications or such other equivalent specifications with upto date corrections/alteration.
2. All raw materials shall be obtained from recognized producers or their authorized representatives and the contractor shall furnish copies of test certificates from the manufacturers including proof sheets, mill sheets etc. showing that the materials have been tested in accordance with the requirements of various specifications and codal provisions and to the satisfaction of the Railway.
3. Any approval given by the Railway in consequence of such tests or analysis shall in no way limit or interfere with the absolute right of the Railway to reject the whole or part of such materials supplied, which in the judgment of the inspecting authority /Engineer does not comply with the conditions of the contract. The decision of the Engineer or his representative in this regard shall be final, binding and conclusive for all purpose.

36.0 SCOPE OF WORK:

36.1 GALVANIZED STEEL H- BEAM SLEEPER:

The quoted rates includes-

- i) Manufacture Fabrication & Supply of Steel H-Beam Sleepers to suit RDSO's drg as per site conditions with all riveted/Welded components as per RDSO's drawing No. B-1636/4/R, B-1636/5 & 9 (with latest alteration) and other drawings mentioned therein or approved drawing supplied by Railway and specification thereto complete in all respect
- ii) **Total Quantity = 170 Nos**
- iii) H-Beam Sleeper should be made of rolled section ISHB-200 confirming to IS:2062 with latest revision and as per latest RDSO drg and after fabrication shall be galvanized as per IS:4759.
- iv) Supplying galvanized steel H-Beam sleeper as per the drawing mentioned above and including all the fittings.
- v) Supplying & fixing galvanized MS canted bearing plate duly galvanized and welded / riveted as per site requirement to there on to H-Beam, supplying and fixing MS pad plate

for the guard rails duly fixing by welding along with rubber pads and also galvanizing the whole assembly after the welding of pad plates as per site requirement with contractor's own labour tools and machinery.

- vi) Galvanization of M.S. canted bearing plates, MS pad plates below guard rail and MS packing plates if any required.

RDSO drawings/guidelines/specification should be strictly followed in this regard.

36.2 FITTINGS & FIXTURES (GALVANIZED EXCEPT NON-METAL) :

- i) Supply of Fittings for steel H-Beam sleepers to suit as per site requirement shall be done as per Drawing No. RDSO/B-1636/4/R, 5 & 9 and other drawings with latest revision/instruction/note laid therein..
- ii) H-Beam Sleeper MS fittings shall be galvanized as per IS:4759 and IS Code No.1759-1984 & IS-2629-1985.
- iii) All fittings shall be procured from RDSO approved firms before supply of the same it should be inspected by Engineer in-charge or his authorized representative/ RDSO/ RITES as mentioned in tender schedule items or as per latest guidelines.
- iv) All the mild steel fittings and fixture have to be galvanized at the contractors cost before dispatch.
- v) QAP Material List & DODL List per Sleeper for Steel H-Beam and Fittings should be prepared by manufacturer and get the approval from department before execution of the work.

37.0 INSPECTION AND TESTING OF FABRICATION:

The Inspection of the finished H- Beam sleepers will be arranged by the Sr. DEN/DEN concerned or his authorized representative not below the rank of ADEN, North Eastern Railway. Necessary office accommodation for the inspecting staff at / near the manufacturing premises will have to be made available by the Contractor free of cost. Necessary Transport facilities to and from the nearby Railway Station convenient to the Inspecting staff Rest House accommodation for the purpose of Inspection should be provided free of cost to the Inspecting Staff by the Contractor.

The contractor will first manufacture 20 nos. of steel H- Beam sleepers for trial. Once the process is perfected he will manufacture the first lot of 100 sleepers and present them to the Railways for their inspection. The inspection of this first lot consisting of 100 sleepers shall be done by Engineer in-charge or his authorized representative not below the rank of ADEN, North Eastern Railway. After this the further inspection of sleepers shall be done by Engineer in-charge or his authorized representative not below the rank of ADEN, North Eastern Railway. The contractor shall submit before inspection the details of measurement etc. for each sleeper in a suitable proforma to the inspecting Engineers in advance and also will give a certificate that the sleepers manufactured confirm to the specifications and the relevant drawings. The rejected sleepers shall not be repaired and incorporated in the work.

The Engineer shall have free ACCESS at all reasonable times to the contractor's works, where the fabrication of steel work is carried out and shall be afforded be all reasonable facilities by the contractor for satisfying himself that the fabrication is being under-taken in accordance with the provisions of the drawings and specifications.

The contractor shall continuously inform the engineer of the progress in fabrication as and when the individual pieces get ready for inspection. The contractor shall give a minimum of three working days' notice to the engineer for inspection of the individual pieces.

Unless directed otherwise, inspection shall be made at the place of manufacture prior to dispatch, by an authorized representative of Railway. If any structure found not to comply with any of the provisions of these specifications, it shall be liable for rejection. No structure or part of the structure once rejected shall be re-submitted for inspection/test, except in cases where the engineer or his representative considers the defects as rectifiable.

Defects which may appear during fabrication shall be made good with the consent of and according to the procedure/specification laid down. All gauges and templates necessary to satisfy the engineer or his representative shall be supplied by the contractor. The engineer or his representative may at his discretion, check and the test results obtained at the contractors works by independent tests at the Government Test House or elsewhere and should the material so tested be found to be unsatisfactory the costs of such tests shall be borne by the contractor.

The contractor shall be required to install and operate all necessary testing equipment required for testing the sleepers. The testing equipment for the same must be available at manufacturing site. In addition, the contractor shall arrange at his own cost for any further tests on materials, as may be

indicated by the Engineer/ Inspecting Officer, being carried out at recognized Material Testing Centers and /or institution during the progress of manufacture of the sleepers, even though Test Certificates for such materials are available.

37.1 QUALITY ASSURANCE:

The contractor shall establish a quality assurance team in his work shop, which will do the stage checks at various levels to ensure total quality control and also submit quality assurance plan for H-Beam sleepers and its fittings for approval.

37.2 WARRANTY:

The contractor Guarantees that the steel H-Beam sleeper, which he supplies, shall be manufactured fully in accordance with specifications. In all cases the Contractor guarantees that its design shall strictly follow the detailed drawings/specifications with such modifications as are notified in respect of each type.

The Contractor further guarantees that the steel H-Beam sleepers shall be free from defects in material and workmanship. The contractor shall be liable to arrange the necessary replacements of the defective sleepers free of any charge during the maintenance period only to the extent that such replacements are attributable to or arise from faulty workmanship or material or design in the manufacture of the Sleepers or fitting. All replacements shall be made free of cost at destination including fixing. If the contractor so desires, the replaced sleepers can be taken over by him or disposed as he deems fit.

If the Contractor fails to replace the defective sleepers within the one month, the cost of the said sleepers at double the rate stipulated in the Contract shall be recovered from the payments due to the Contractor including the amount of "Security Deposit".

37.3 FACILITIES FOR TEST AND EXAMINATION: -

The Contractor shall, at his own expense afford to the Inspecting Officer all reasonable facilities and such accommodation as may be necessary for satisfying himself, that the sleepers and associated fittings are being and/or have been manufactured in accordance with the specifications/drawings/particulars.

The Inspecting Officer shall have full and free access at any time during the execution of the contract to the Contractor's work for the purpose aforesaid, and he may require the Contractor to make arrangements for inspection of the sleepers or any part thereof or any material at his premises or at any other place specified by the Inspecting Officer.

37.4 TEMPLATE

Templates needed throughout the work shall be of steel plate in such cases as the inspecting officer may consider necessary.

38.0 INSPECTION /TESTING / TEST CERTIFICATES:

- a) The finished steel H-Beams and all riveted / welded components are subject to inspection by N. E. Railway LJM Division /or their nominated representative.
- b) All expenses involved for Inspection /Testing shall be borne by the H- Beam sleeper manufacturer.
- c) The H-Beam Sleeper manufacturer have to provide assistance, instruments, machine, labour and any material which are required for examining, measuring and testing of any materials and workmanship as may be selected and required by N.E. Railway or their Authorized Representative without any extra cost **Inspection call letter** should be sent by the H-Beam Manufacturer minimum **5 (five) days in advance** at engineer's or his representative's office.
- d) Test Certificates for raw materials (both physical and chemical) and finished materials are to be provided and submitted by the H-Beam Manufacturer at the time of Inspection and along with supply without any extra cost to Railway.
- e) Inspection of H-beam sleepers and all associated fittings shall be done as as mentioned in the tender schedule items.