

SPECIAL CONDITIONS OF CONTRACT
FOR MOVEMENT OF VEHICLES NEAR RAILWAY TRACK
(SAFETY PRECAUTIONS)

1. No lorry or road vehicles shall be operated so as to affect the safety of trains. They should be allowed to work well outside the moving dimensions. At each of the locations where road vehicles, machinery are working, an authorized responsible Railway official will be posted as in-charge to ensure that road vehicles and machinery do not infringe the scheduled moving dimensions, any time and protect the track in case of emergency. To facilitate the driver to whistle, a whistle board will have to be provided at the appropriate place.
2. All vulnerable locations where construction activity is in progress adjacent to existing Railway lines, should be cordoned off with proper barricades. The most vulnerable locations shall be barricaded with rail barricades projecting at least 1m above ground. At all other locations barricades of not less than 1.5m height, consisting of bamboo/casuarinas poles and supported horizontally by similar bamboo/casuarinas poles should be provided.
3. All the barricades are to be painted or stuck on with luminous paint strips at suitable intervals on the barricades.
4. The entry to new banks which run alongside the existing track should be protected by barriers which can be closed and opened whenever necessary.
5. At locations which are not vulnerable, provision of barricade can also be with
 - i) 0.6 m and 0.3 m deep trenches or
 - ii) Stones of minimum size 30cm x 15cm at 1m intervals and projecting 0.3m above ground level and painted white.Trenches should be allowed only in those locations where they do not lead to subsidence to Railway track as may be assessed by the Section Engineer / P.Way.
6. Barriers shall also be provided in the case of double lines, particularly at the existing level crossings where there is every possibility of road vehicles entering finished formation. These barriers are to be opened only for the movement of Railway contractors authorized vehicles or other Railway vehicles.
7. Road vehicles employed by the contractor should have the certificate for the road worthiness and each vehicle numbered and the licence particulars maintained. Contractors should ensure that the drivers permitted by them to work such road vehicles are identified, counseled, certified and are provided with photo identity cards.
8. Wherever the work requires the movement of the road vehicles with in a distance of 3.5m to 6.0 m from the centre line of the nearest track, such work shall be done only in the presence of Railway employees authorized by the engineer in-charge. No part of road vehicles will be allowed at less than 3.5 m from track centre. Cost of such Railway employees shall be borne by the Railways.
9. No movement of road vehicle within 6m of Railway track shall be permitted unless the driver of the vehicle is assisted by a helper with a whistle who shall guide him to ensure safety.
10. The driver of the vehicles shall always face the track when reversing the vehicles and wherever can not face the track for what ever reason. He shall invariably be assisted by a helper with a whistle that should guide him and ensure safety.

11. All work sites shall be supervised by the contractor's representative as also a representative of the Railway organization, whenever work of plying road vehicle within 6.0 m zone is actually in progress, look-out men should invariably be available. Look men will have to be provided by the contractor from out of the list of persons who are authorized to carry out these duties. Authorization will be issued to the individual by the representative of the Engineer in-charge. One supervisor who shall be permanent staff (Gang man) loaned to JE/W/CN from the respective gangs in whose beat the work is in progress (to be spared by the respective P.Way Engineer / Open line) will monitor the availability and alertness of the look out men. In case of non availability of look out men the Railway supervisor shall stop further activities for plying of road vehicles. Even if no work is executed the night look out men shall patrol the beat as identified by the representative of the construction organization to ensure the safety of running trains especially from any infringement.
12. The supervisor mentioned in para.11 above should be trained in protection rules and supplied with minimum equipment required for protecting the track. Such staff should also be provided with basic communication facility (a walkie-talkie with communication facility to the nearest station master or adjacent site) so as to communicate to the nearest station in case of emergency/un-usual occurrence. Till it is made available the supervisor shall use the nearest LC gate telephone or other means of communication to relate the incident most speedily.
13. Working along side the track during the night hours is normally prohibited. Such work can be done in the night only with the written permission of the Engineer in-charge of the construction activity. Where night work is permitted, lighting of the work as required should be done.
14. The contractor shall be fully responsible against loss or damage arising from working of lorries and other machinery adjacent to the running track and making the contractor solely responsible for any loss or damage which the Railway or the contractor or any third party may suffer.
15. The contractor shall be fully responsible for ensuring safety at all times and shall bear the cost of all damages in case of accidents/unusual occurrences resulting in damages to Railway property and its passengers.
16. Supervisors and operators of the work executive agencies working at or near Railway track should undergo specified training on matters relating to safe working along and on the track, Salient features of observing moving dimensions and clearances which may be imparted to such supervisors at Zonal / Divisional training schools and the cost of such training as advised by the Railway shall be borne by the contractors with an expected duration of the course of about three days so as to ensure that they get acquainted with safety precautions that are required to be taken while executing works which have bearing on the safety of the running trains.

Special Conditions for House keeping, Covering and Site clearance of work sites:

1. In addition to and without prejudice to what is provided in the clause No.40(2) of the Railway's General conditions of Contract, the contractor shall ensure proper housekeeping and covering of all works, goods, materials, equipments etc., at work sites without any inconvenience or difficulty or danger to the Railway users/staff and train services. He shall clear the work sites duly removing all the debris, surplus/released/scrap materials, equipments and machinery etc completely and properly as directed by and to the satisfaction of the Engineer-in-charge and hand over the site in clear condition duly handing over the Railway material completely after each stage or on entire commissioning of the work as required by the Railway.
2. For failure to do the above, within fifteen (15) days of receipt of notice thereof from the Engineer-in-charge, without prejudice to the other remedies available to the Railway under the contract, payment of the on-account bill shall be restricted to ninety percent (90%) of the bill amount and the balance payment shall not be payable till such time the site is covered/cleared/returned/handed over to the Railway and a certificate to that effect is issued by the Engineer-in-charge. The decision of the Engineer-in-charge is final in this regard and the Contractor is not eligible for any compensation and shall make no claims whatsoever.”

Annexure – “C”

Special conditions for digging work and Progress of work.

1. The contractor shall strictly follow the ‘Guidelines for protection of cables while doing works related to earth work’ using JCB/Hitachi/Earth work excavator, for undertaking digging work in the vicinity of underground signaling, electrical and telecommunication cables. If any damages to cable, the penalty will be imposed as per Railway Board Letter No.2021/Tele/5(2)/3-part(1) (3425647) dt.12.06.2023 which is attached as ‘JPO for digging work’ under 'DOCUMENTS' tab.
2. The format for various registers to be maintained in all work spots is attached as ‘Registers at worksite’ under 'DOCUMENTS' tab.
3. The tenderer/contractor are advised to chalk out a program of work to complete the work within the completion period mentioned in the schedule (Guaranteed progress of work per week/per month) and submit the same along with the tender.
4. Police verification of Labour employed by contractor: The contractor is required to submit Police verification certificates for all the contractual staffs that she/ he will be engaging in the works for execution as per the format attached under 'DOCUMENTS' tab. (Ref : Sr.DSC/RPF/TPJ letter No. SXC/Misc/9/PC/2024 dt.22.04.2024)
5. Maintenance period: The Maintenance period shall be three months from date of completion of work.

Special conditions for **Transportation of permanent way materials including PSC sleepers**

1. The Contractor will have to make his own transport arrangements including fuel, crew, labour for collection, loading and unloading of the permanent way materials including PSC sleepers and fittings from various locations. All tools and tackles required for the work shall be arranged by the contractor.
2. Wear and tear of contractor's vehicles and equipments including breakdown to transport vehicles if any will have to be met with contractor's cost only. Any damages to structures, life, persons etc., arising out of accidents / and by any other occurrences will have to be made good by the Tenderer/Contractor at his own cost without claiming any extra cost from Railway.
3. The Contractor shall take special care while moving the permanent way materials including PSC sleepers and fittings from the cess /alongside the track and take necessary precautions to prevent accidents.
4. The Engineer's representative nominated for this work will furnish the weight of permanent way materials during actual execution of the work, the decision of whom regarding the weight will be firm and binding on the contractor.
5. The Railway will make necessary arrangements for obtaining permission Railway Security Branch for moving Railway materials to and from the work spot by the contractor.
6. Necessary trip sheets/gate pass for each lorry load of Railway materials will be issued by the Railway' representative nominated for this work.
7. Unloading and stacking of permanent way materials including PSC sleepers and fittings at nominated locations should be done without infringing the Track movement.
8. While handling PSC sleepers care should be taken that there is no breakage or damage to edges or ends.
9. In case of loss/damage of any materials during transit/handling, the cost of such loss/damages will be recovered from the contractor.
10. Contractor will be responsible for the safety of the staff employed by him for the loading/unloading and transportation.

SPECIAL CONDITIONS FOR TRACK WORKS

1. General: The contract shall be governed by the Southern Railway's General conditions of contract, Indian Railways Permanent way Manual, Indian Railway Track Manual, Schedule of Dimensions and the Standards specifications for track works with their latest correction slips. In case of contradictions, the clauses under these special conditions shall prevail.

2. Inspection: The Tenderer in his own interest can visit the site of work with the concerned SE(P.way)/ADEN or with their authorized representative after fixing up an appointment with them in advance and ascertain the nature and quantum of work, site conditions, availability of block, availability of approach road, availability of labour, water, electricity, land for labour camps, etc.,

3. Traffic blocks: Traffic blocks as required to carry out track works will be arranged by the Railways. Actual availability of traffic block depends on flow of traffic and there may be variations in availability of the block, vis-à-vis planned. Every endeavor will be made to secure adequate line blocks as required for progress of the work. However, in the event of non-availability of such line blocks, the contractor shall not be entitled for any compensation.

4. Speed Restriction:

4.1 The required Speed Restrictions at the site of work will be arranged by the Railways. No work on the track shall commence until the required speed restrictions are imposed and necessary Engineering Indicators are erected in position by the Railways.

4.2 After the Speed Restriction is imposed, the contractor shall progress the work in a systematic manner, with in three days from imposition of speed restriction. Long length of track under speed restrictions should be avoided.

4.3 Caution Watchman as necessary during day and night will be arranged by the Railways

4.4 Between imposition of restriction and raising to sectional speed normally a period of three weeks will only be allowed. During this time the contractors should complete all the works such as deep screening, dumping of ballast, packing and consolidation etc.

5. Arrangement of tools and plant:

5.1 In terms of Para 627 of IRPWM, in all track works, contractors are strictly prohibited and not allowed for keying, spiking, ERCs using hammers and to be adhered to use contractor's own clip applicators as developed by TPJ small track machine depot only. The drawing and details of the same are attached separately.

5.2 All tools and plants required for the work shall be arranged by the contractor at his own cost. These include crow bars, shovels, ballast rakes, beaters, screws, track gauge, Elastic rail clip applicators cum extractor, level boards, spirit level, cotter splitting tool, cant boards, square, spanners etc.

5.3 In addition, other measuring equipments like track gauge cum level squares, leveling equipment, Theodolite, Thermometer, scales etc., and small track machines like abrasive rail cutters, rail tensors, welding equipment, profile grinders, weld trimmers, off tracking tampers, rail tensors, distressing rollers etc, shall be arranged by contractor from approved suppliers. These shall be checked and approved by Engineer's representative.

5.4 Dip lorry/rail dolly for trucking out shall be made available by Railways free of hire charges. The labour for working dip lorry shall be made available by contractor.

6. Safety:

6.1 All the track works shall be carried out under traffic conditions. The Contractor shall not start any work on the track without the presence of the Railway's supervisor at site. In case the contractor or his representative starts any work in the 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 Railways Act.

6.2. In case any train is detained at the approach of work spot or at station on account of its passage being considered unsafe by Railway's supervisor on account of bad workmanship by the contractor or the track parameters being unsatisfactory for safe passages of trains, or due to the contractor leaving the work unfinished or due to work being delayed by the contractor, the Railway shall be entitled to recover detention charges from contractor's bills or security deposit or any other dues. Detention to trains and charges thereof as determined by the Railway shall be final and binding upon the contractor. Notwithstanding the provisions of clauses 62 of General conditions of contract, the Railway reserves the right to terminate the contract with immediate effect if the contractor is found responsible for any breach of rule which affects the safe running of trains without giving any notice to the contractor.

6.3. In the event of any accident at the work spot a departmental enquiry will held by the Railway and the findings of the departmental enquiry will be binding on the contractor. If it is established the accident occurred wholly or partially due to any act of negligence on the part of the contractor, the contractor shall render himself liable for all the damage including restorations of track and also legal prosecution for loss of life, if involved. If the contractor is held responsible for the accident, the contract is liable to be terminated. Irrespective of the provisions of clause 62 of G.C.C. or otherwise penalty upto an upper limit of 10% of the total cost of the work may be imposed in case any accident occurs due to contractor's negligence as decided by the Railways and Railway's decision shall be final and binding on the contractor.

6.4 The work shall be so carried out without any infringement to running trains. The dip lorry work shall be done under supervision of Railway Supervisor only and under block protection. Dip Lorries shall be secured and padlocked away from the track when not required for work.

6.5. The Railway shall arrange for protection of track(s) by their staff. In addition, the contractor may arrange for 'Look out Man' for protection to warn his workers of any approaching train. No compensation will be paid by Railway in case of injury or death of the contractor's labour and the contractor shall indemnify the Railways of any responsibility in this regard. The Contractor may obtain Group Insurance in respect of his workers.

6.6. The work shall be executed in an approved manner to the entire satisfaction of the Engineer's Representative as given in the modus-operandi and the contractor will be primarily responsible for the safety of traffic that moves on the re-laid track notwithstanding the presence of Railway's supervisory staff at site.

6.7. The operations like preliminary works, dismantling existing track, slewing of preassembled track etc, may be done as directed by the Engineer-in-charge in accordance with the availability of line block and traffic conditions etc. Before allowing the train after line block it is the responsibility of the contractor to keep the re-laid track in fit condition of gauge, cross level and alignment for the safe passage of train.

7. Progress of work:

7.1 The Contractor shall proceed with the work in a systematic manner so as to ensure that the stretch of track under speed restriction and its duration are kept to a minimum. The decision of the Engineer in this respect shall be final and binding. The contractor shall employ adequate number of workers to give consistent and desired progress every day. Whenever line blocks are planned, sufficient labour and tools should be arranged by the contractor to complete the work in the traffic block. The requirement of labour, tools and tackles will be advised to the contractor by Railway's representative in advance.

7.2. Site order books, progress registers, hindrance registers and materials will be maintained at site and entries shall be recorded on day to day basis in the registers and signed jointly by Railway's

supervisor and by the contractor or his authorized representative. All details of previous stages of work, imposition and removal of speed restrictions, measurements of track parameters, account of released materials etc. shall be recorded there in.

8. Contractor's Supervisory Personnel:

8.1 At each site of work, the contractor shall employ and post one technical supervisor who should be adequately qualified and well experienced in execution of permanent way works. The name, technical qualifications and details of experience of the technical supervisor employed shall be advised to the Engineer. If in the opinion of the Engineer's representative, the Supervisor is not fit to be in-charge of the work, he shall be forthwith replaced; in this matter the decision of the Engineer shall be final and binding on the case. The Contractor's technical supervisor shall be present at the site as all times when the work is being executed.

8.2 No work on the track should be done unless and until the contractor's technical supervisor is present at site.

9. Non-compliance with the instructions and directives of the Engineer's Representative.

9.1 The contractor shall always comply with the instructions/ directives issued by the Engineer's representative from time to time. In the event of non-compliance with the instructions/directives, apart from and in addition to other remedies available to the Railways as specified herein, the Engineer's representative may employ at the worksite the required number of workers with necessary equipment as considered appropriate and adequate by him to provide the requisite conditions for the safe and unhampered movement of railway traffic. The decision of the Engineer's representative in regard to the need appropriateness and adequacy of the deployment of the required workers with necessary equipment shall be final and conclusive. The number of workers so deployed by the Railway shall be intimated in writing by the Engineer's representative to the contractor, after such deployment.

9.2 When the required workers with necessary equipment are deployed in the above manner, recovery at the rates/amount as decided by the Railways shall be made from the contractor. The aggregate period of the man hour for the above recoveries shall be reckoned from the time the workers are actually deployed at the worksite till the work is completed of the satisfaction of the Engineer's representative whose decision in this regard shall be final conclusive and binding on the contractor.

9.3 If the contractor does not comply with the instructions/directives of the Engineer's representative, apart from and in addition to the remedies available to the Railway as specified here in above with out prejudice to the Railway's rights in this regard, the Engineer's representative can suspend the contractor's works till the Engineer's representative is satisfied that the contractor has taken necessary steps to comply with the instructions/directives issued by the Engineer's representative.

9.4 The decision of the Engineer's representative in this regard shall be final, conclusive and binding on the contractor. The contractor shall not have any claim whatsoever against the Railway for such suspension of work.

9.5 During such period of suspension of work, the contractor shall not in any manner attempt to carry out any work at the work site. Any such attempt on the part of the contractor shall amount to tampering of the railway track for which the contractor shall be liable for appropriate action under the relevant provisions of the Indian Railway Act.

SPECIAL CONDITIONS OF CONTRACT FOR COMPLETE TRACK RENEWAL

1. General: The track renewal works shall be carried out as per IRPWM provisions. In case deep screening is also involved, the track renewal works and deep screening works shall be synchronized in such a way to keep the length of speed restriction as specified. The rear packing and consolidation shall be done to achieve the track parameters as specified for track renewal works.

2. Issue of materials:

2.1 Materials for the work like rails, sleepers, fittings etc., will be arranged by Railway.

2.2 Rails, fish plates, fish bolts and nuts, CST-9 sleepers, wooden sleepers, tie bars, cotters, two way keys, screws and all the other required permanent way materials shall be supplied at the stores depot of concerned Section Engineer in charge unless otherwise specified. These materials will have to be transported to the site of work by the contractor's means.

2.3 The Permanent Way materials required for the day's work shall be drawn on the requisition signed by the contractor/his authorized representative. The contractor shall be responsible for the correct account of such of those materials. The contractor shall post required number of men to watch the materials and tools entrusted to him the site of work. The contractor shall submit the material account to the Engineer's representative showing the actual quantity of materials used for the work at the close of each day. The issue of materials shall be regulated as per the requirement as amended by Section Engineer in charge.

3. Return of Materials: The released materials from the work such as rails and sleepers shall be stacked near motor-able road approach/ level crossing as directed by the Railway. Other released materials shall be handed over to Section Engineer concerned at his stores and stacked item wise in a countable manner.

4. Recovery for loss of materials: The contractor will be liable for shortages/losses of materials issued to them and recovery shall be made from contractor at the rates assessed by the Railways.

5. Modus operandi: The work shall be carried out in accordance with IRPWM provisions. The modus operandi of work shall be approved by the Railway before starting the work. The preliminary works required for the work such as removal of alternate fish bolts, keys and other fittings in the existing track and lifting the preassembled track on proper support should be done before the line block as directed by Section engineer.

Normally Complete Track Renewal shall consist of the following operations in sequence-

- (a) Removing the existing rails and sleepers from the track with all fittings and fastenings.
- (b) Assembling and insertions of already linked track.
- (c) Oiling of the fish bolts and nuts and greasing of fish plates.
- (d) Attending to the squaring of the sleepers.
- (e) Slewing of track to correct alignment.
- (f) Gauging
- (g) Packing of sleepers
- (h) Repacking of joint sleepers
- (i) Boxing of ballast section and tidying

All the above operations shall be carried out as directed by the Section Engineer in charge.

Rail cutting shall be done using abrasive rail cutter only and all holes drilled shall be chamfered.

Paint marks shall be made on the rails as directed by the Section Engineer in charge to indicate the spacing of sleepers to be adopted.

6. BALLASTING AND INITIAL PACKING

- 6.1 Adequate ballast should be dumped for the purpose of packing in stages as directed. In case deep screening work is also involved then track renewal will precede the deep screening work. Adequate ballast cushion will be ensured while deep screening is done.
- 6.2 In the case of the wooden and PSC sleeper, the packing shall be to the same standard below each rail and 35cm, on either side of rail or the middle of the sleeper shall be packed loosely. In case of PSC sleepers, the packing shall be done with blunt end of crow bars very carefully without damaging any sleepers.
- 6.3 In the case of the CST-9 sleeper, the ballast shall be worked into the bowls on either side of the keel of the plates and packed in from outside until the bowls are full and hard packed till no more ballast can be packed in.
- 6.4 All the track parameters such as alignment, gauge cum level, longitudinal surface etc., shall be checked and attended wherever necessary.

7. FINAL ADJUSTMENT PACKING AND CONSOLIDATION

- 7.1 The track shall be through packed in different stages and consolidated under traffic conditions as per the sequence of operations provided for this. At every stage following operations shall be ensured.
- 7.2 The track after the passage of trains should be checked as directed by the Engineer and the track lifted and packed wherever sags have formed.
- 7.3 Any sleepers, which have shifted from correct spacing or gone out of square shall be moved back and squared after loosening the fastenings care being taken not to bend the tie bars. The fastening shall be tightened again after squaring.
- 7.4 The track shall be slewed to correct alignment by sighting along the rail head of the base rail. It should be ensured that track does not get lifted in the process of slewing.
- 7.5 Any defects developed in gauge shall be rectified by adjusting the fittings under direction of the Section Engineer-in-charge.
- 7.6 The track shall then be given final packing. For this, sighting shall be done along the base rail and any dip or low joint lifted correctly and packed, attending also to the packing of adjacent sleepers. After the base rails are thus packed for 2 or 3 rail lengths the cross-levels should be checked and the opposite rails lifted whenever necessary and sleepers under that seat packed. The joint and shoulder sleepers shall be repacked and cross-levels adjusted.
- 7.7 The ballast section shall be dressed neatly as directed by the Engineer's representative to be of proper height and width with correct side sleeper.

8. SPECIFICATION FOR FINISHED WORK: The track parameters of finished work shall conform to the specifications laid down in the IRPWM.

- 8.1 Ballast Section: The ballast section shall be uniform in the height width and side slopes brought to standard section as directed by the Engineer's representative with the quantity of ballast made available at site. No ballast shall be left on the cess, side slopes of bank or near toe of bank.
- 8.2 Site Clearance: On completion of the work all the released materials, pegs, sheds etc. shall be removed from the site.

Special condition of contract For **Deep Screening Of Ballast**

1. Scope of Work:

This work shall be carried out as per IRPWM provisions.

1.1 Deep screening of ballast initial aligning, leveling and packing of track will include the following

- a) Removing entire stone ballast including muck lying in the track between and under the sleeper (core) and on the shoulders. The depth below sleeper upto, which the ballast and the muck should be dug up, will be specified by the Engineer-in-charge. This will normally be between 15 cm and 30 cm.
- b) Screening ballast with screen of approved design and of 25 mm square size with inclination of the screen being approximate 60° with the horizontal to separate the clean ballast from muck, putting back the clean ballast into the track and disposing of the muck as directed by the Engineer-in-charge. The muck may be used for cess and slope repairs as directed by Engineer-in-charge but should not be dumped on slopes of cuttings or inside drain and catch water drain.
- c) Adequate number of wooden blocks to support the track top passing trains while the work is in progress shall be provided.
- d) Aligning and leveling the track and rough packing underneath with the screened ballast adequately so as to pass train at 20 KMPH. These works shall be completed on the first day for the length taken up for screening.
- e) Sleepers, which have been marked as unserviceable, should be relieved and new sleepers inserted in their place and properly fixed. This work will be paid for under separate item of schedule.
- f) The track shall then be slewed to proper alignment with reference to centre line peg already fixed. On curves the track should be slewed to proper curvature, which should be ensured by reference to prescribed versines.
- g) The track should then be lifted where required in stages each stage involving a lift of not more than 50 mm. When the track is being lifted no trains should be allowed to pass over the spot until the lift is ramped out on either side suitably. Any lift more than 50mm should not be done unless and until the Railway Supervisor is present at the spot.
- h) After each stage of lifting of track, packing of the ballast should be done under all the sleepers to uniform standards and the track consolidated adequately to pass trains to speed of 20 KMPH. The next stage of lifting track should not be continued stage by stage till the track is brought to prescribed longitudinal and transverse profiles.

1.2 Spreading and boxing of ballast, which include the following items of work.

- a) Pulling all the ballast on the formation on to the track by ballast rakes and boxing it to approved profiles; Proper complete and log lines should be used. The width at the shoulders should be as directed by the Engineer-in-charge which will normally not be less than 3.35m not more than 3.66 m for Broad Gauge and not less than 2.21 m and not more than 2.50 m for Metre Gauge.
- b) If the ballast is required to be dumped from stacks alongside track to make up deficiency the same should be done for such works. Payment for such work will be done separately under appropriate items of Schedule.
- c) No ballast should be wasted on the slope of banks or in cuttings. Repairs to cess should normally be carried out with the muck removed after screening. The cess should be leveled and dressed to approved profiles.

- 2.0 Through Packing and consolidation of track will include the following items of works for Broad / Metre Gauge.
- a. Adjusting gauge to tolerance specified in Para 2.1
 - b. Squaring all sleepers and tightening all the fastenings after making good the deficiencies of fittings supplied by the Railway. In case of CST 9 track the cotters should be split as directed.
 - c. Adjusting the alignment, Longitudinal and cross-levels of track to bring the track parameters within the specified tolerances. On curved track the curve should be slewed to proper alignment keeping the centre line pegs in as per directions of the site-in-charge. The disturbed curve reference pillars should be fixed in ground as instructed.
 - d. Repeatedly packing and consolidating the track, through packing should be done at the following intervals to bring the track to the required standard to relax the speed progressively to the section speed.
 - i) First through packing after the work of initial aligning leveling and grading of track is completed as per Para No. 224 of the Indian Railways Permanent Way Manual (1986).
 - ii) Second through packing on the next day after the first through packing is completed so as to relax the speed restriction for 30 KMPH and as per Para No. 224 of Indian Railway Permanent Way Manual (1986).
 - iii) Third through packing on the 7th day after second through packing so as to relax the speed restriction from 45/30 KMPH for BG/MG and as per Para No. 224 of Indian Railways Permanent Way Manual (1986).
 - iv) Fourth and Final through packing on the 10th day after 3rd through packing (that is on the 20th days) so as to relax the speed restriction from 75/60 to maximum permissible sectional speed from 21st days onwards. During the each round of packing the slacks, if any, in gauge, alignment, longitudinal levels and cross-levels should be progressively reduced. If more round of through packing are found necessary to bring the track parameters to prescribed tolerance the same should be done. The decision of Engineer-in-charge in this regard shall be final and binding on the contractor. In between the round of through packing, slacks should be picked up as required to ensure safety of traffic passing over the track.

2.1 Rear packing and consolidation will be deemed to be completed only when the track parameters are within the tolerance and boxing of ballast is done to the standard profile as given in IRPWM.

2.2. The track parameters after final packing should be maintained for a minimum period of one month after the track is certified fit for sectional speed.

3.1. The contractor may be required to suspend deep screening work during rain and no compensation shall be payable.

3.2. Portable ballast cleaners/ inclined screens of specified size shall be used for screening ballast at deep screening sites. Use of wire baskets is not permissible for screening ballast. The contractor shall make his own arrangements for portable ballast cleaners/ inclined screens. Where feasible these may be supplied by the Railway on hire.

3.3 No ballast shall be wasted on the slopes of banks or in cuttings, while taking up ballasting / deep screening works.

3.4.Penalty: A minimum length of 3 km of track should be deep screened per month once the speed restriction is made available. Failing which a penalty of Rs.5/- per metre shortfall of 3000 metre will be recovered from the contractor's bill.

3.5. On deep screening sites, the contractor may be required to handle additional ballast, which might have been put during the intervening period. Contractor shall not have any claim on this account.

Special conditions of contract For **Rear packing and consolidation of track**

1. GENERAL:

The Rear packing and consolidation of track shall be carried out in all cases of track renewals, sleeper renewal, deep screening and lifting of track under traffic condition to keep the track parameters within the safe limits as directed. The work will be carried out in accordance with the IRPWM.

In addition to the kutchra packing for safe passage of trains on the day of work following through packing shall be done to achieve laid down consolidation. The speed restriction shall be relaxed in stages.

The number of through packings will be based on the maximum sectional speed and as directed.

2. The rear packing work should be carried out by contractor as detailed below.

2.1 During the rear packing the track should be lifted in such a way that finally the rail level reaches the proposed rail level. The lift required at stations 10 m apart shall be worked out by deducting the rail level as existing before lifting, from the proposed rail level. The lift for intermediate sleepers shall be worked out by linearising the lift value at two adjacent stations. The lift required shall be marked on every alternate sleeper. Where the lifting work merges with unlifted portion this marking will have to be done duly working out a ramp.

2.2 The track should then be lifted wherever required in stages, each involving a lift of not more than 50 mm. The lifting work shall be done along with rear packing and all lifting should be completed before second rear packing.

Where jacks are required for lifting, only non-infringing type hydraulic jacks shall be used. The jacks shall be placed on both the rails and operated simultaneously.

When the track is being lifted, no train should be allowed to pass over the spot until the lift is ramped out on either to a slope of 1 in 500 on both rails.

2.3 Wherever alignment or versine correction is required, as instructed by site in charge, this should also be done during first and second rear packing, duly giving the slew as marked by site in charge.

2.4 After each stage of lifting of track, packing with ballast should be done under all the sleepers to uniform standards and the track consolidated adequately to pass trains at 20 kmph speed. The process should be continued stage by stage till the track is brought to prescribed longitudinal profile.

2.5 Following items should also get covered under rear packing work:

2.5.1. Respacing of sleepers to uniform spacing as specified and squaring all the sleepers.

2.5.2. Tightening all the fittings and fastenings after making good deficiency. Cotters in CST-9 sleepers should be side split after gauging.

2.5.3. Slewage of curve /attending alignment defects in straight, as instructed by site in charge.

2.5.4. During each round of packing the gauge, alignment, longitudinal levels and cross levels should be progressively brought to standards. Ballast recoument to the required profile shall be completed before final packing.

2.6. In between the rounds of packing, slacks should be picked up as required to ensure safety of traffic passing over the track, which will not attract separate payment.

2.7 Sequence of packing should be as under for consolidating the track and to bring the track to the required standard to relax the speed progressively to the sectional speed where manual packing is resorted to and to relax upto the speed as directed by the site in charge for machine packing:

2.7.1. Initial manual packing on the day of screening (immediately following the deep screening) with the permissible section speed of 20 kmph..

2.7.2. First rear packing on 2nd day with permissible speed of 20 kmph.

- 2.7.3. Second rear packing on the next day after the first packing is completed so as to relax the speed restriction from 20 kmph to 45 kmph /30 kmph for BG/MG respectively
- 2.7.4. Third rear packing on the 10th day after deep screening or 7th day after 2nd rear packing so as to relax speed restriction from 45 kmph /30 kmph to 75 kmph /50 kmph for BG/MG respectively
- 2.7.5. Fourth and final rear packing on the 20th day after deep screening or 10th day after third packing so as to relax the speed restriction from 75 kmph /50 kmph for BG/MG respectively to sectional speed.

2.8. Incase of machine packing the relaxation of speed restriction will be as follows:

- 2.8.1. Initial manual packing on the day of screening with a permissible speed of 20 kmph.
- 2.8.2. First machine packing on 2nd day with a permissible speed of 45 kmph on 3rd day.
- 2.8.3. Second machine packing on 6th day with a permissible speed of 75 kmph on 7th day.
- 2.8.4. Third and final machine packing on the 9th day with a normal sectional speed on 10th day.

2.9. Depending on availability of machine, at the discretion of engineer in charge, machine can be used for second, third or fourth packing. In such cases the payment to contractor will be made only for the rear pickings actually done by the contractor.

2.10 Rear packing and consolidation will be deemed to be completed only when the track parameters are within the tolerance and boxing of ballast is done to the standard profile as given in IRPWM.

2.11. The track parameters after final packing should be maintained for a minimum period of one month after the track is certified fit for sectional speed.

**Special conditions of contract
On
DESCRIPTION OF VARIOUS WORKS TO BE DONE
FOR THE WELDING OF RAIL JOINTS.**

The work of welding of rail joints should be done strictly in conformity with procedure given in 'Manual for fusion welding of rails by the Alumino-thermic process with latest correction slips, as amended from time to time.

- i. Removal /Loosening of fish plates and bolts, steel keys, pulling the rails to the required extent to provide adequate gap of 20 to 25 mm for welding, refixing the removed/ loosened keys, fish plates and bolts under protection of track (line block).
- ii. Respacing the required number of sleepers on either side of the joint to be welded and lifting the rail ends to the extent prescribed and as directed by the Engineer in charge to correct alignment and level and providing wooden blocks/packings underneath the rail where necessary.
- iii. Scraping and cleaning the rail ends to remove dust and rust with approved wire brushes with all contractor's cleaning materials and tools.
- iv. Making welding moulds with Railway's mould box for the specified rail section, moulding sand, patterns and other accessories supplied by Railway to the satisfaction of the site in charge official.
- v. Conveying the moulds as made above, from the place of moulding to the place of welding, fixing the moulds in the rail joints and luting all round the mould with wet luting sand leaving no gaps or holes taking care that the luting remains intact till the welding is completed.
- vi. Preheating the rail ends with contractor's petrol and using pressure tanks, vapouriser etc supplied by Railway to the extent and temperature specified by the site in charge duly inflating the tank to maintain the required pressure and shifting the tanks, vapouriser and other accessories from joint to joint as the work progresses. Only pressure tank, vaporizers and other non consumables will be supplied by Railways. Petrol will be supplied by contractor at his cost.
- vii. Fixing railway's special crucibles and stand near the joint to be welded charging the crucibles with Railway's portion and igniting the charge and taping into the mould as per the direction of site in charge with all contractor's labour and leading the same from joint to joint as the work advances.
- viii. Removing the crucibles after tapping the portion, removing the mould after allowing the molten steel to become sufficiently hard and chipping off in the time prescribed the excess materials and filling the top tables as directed with all contractor's labour as per direction of the site in charge duly ensuring safe and timely passage of trains after the execution of work.
- ix. Respacing the sleepers after completing the welding work and rectifying any minor alignment or surface defects thereof. All permanent way tools will be supplied by the Railway free of charge.
- x. Stenciling the month and year, firms insignia, number of joint etc, and where necessary as directed by the site in charge as given in Para 5.6 of Manual for fusion welding of rails by Alumino Thermit process 1998 corrected upto date.
- xi. Filing the welded joints to the required tolerance is to be done as prescribed by the in charge of P.way section with contractor's hand files and labour.
- xii. Keeping custody of the various equipments and tools supplied by the railway by deputing necessary watchmen at site of work.
- xiii. Maintaining approved First aid equipment at site of work to be provided by the contractor.
- xiv. Painting the newly welded weld collar as per painting scheme specified in terms of contract inclusive of scraping of area to be painted with Railway's supply of paint but contractor's tools and plant, consumables etc complete.

Special conditions for Quality control for welding of rails by SKV process

1. Initial USFD testing should be conducted within a month's time from the date of welding so that the welder with a bad workmanship can be identified and removed from site.
2. In case the defective weld exceeds 4% the certificate issued by RDSO should be cancelled and welder will have to go through with the process of recertification. Till fresh certification is issued welder should not be allowed to do any work on the track.
3. A penalty of Rs. 500/- may be imposed for defective welds ranging from 2% to 4% and a penalty of Rs. 1000/- if the defective weld is found more than 4%.
4. The percentage of defective welds may be confirmed by joint checking with firm's representative.
5. A firm may be allowed to do the welding of defective weld by wider gap technology. This will reduce the wastage of rail and population of additional SKV weld at site.
6. Railway to maintain batch wise and welder wise data of each weld at site so that any deficiency in a particular batch or portion or welder can be identified and suitable action can be taken in consultation with RDSO. Numbering of SKV weld at site should be done to correlate a particular weld with a particular batch of portion and welder.
7. 1% sample joint testing as envisaged in the Manual (Para 7.1 of Manual for fusion welding of rails by Alumino Thermic Process) shall be strictly followed by Zonal Railways.

DESTRESSING OPERATIONS

Destressing of the LWRs at the specified locations to release the locked up thermal stresses at stress free temperature with the following operations under line block within the range of favourable rail temperature (about 42⁰ to 44⁰ C of Rail temperature) **without rail tensors** with contractor's labour, tools and plant with all lead, lift etc, complete.

- a) Removing the ERC and liners from the track from buffer rails towards the centre of LWR after removing the closure rails at both ends of LWRs.
- b) Placing the GRP in correct position over the PSC sleepers.
- c) Placing rollers over the PSC sleepers at the specified intervals.
- d) Tamping the rails with wooden mallet gently from the centre of LWR towards the SEJ/cut rail.
- e) Scrapping and cleaning the liner contact area with wire brush and apply one coat of **Contractor's anti corrosive paint** and scrapping and cleaning the eyes of CI liners and legs of ERC and apply **Contractor's Grease** as per the directions of Engineer in charge.
- f) Removing the rollers placed above, after the tamping is completed and placing the liners in position and inserting ERCs to correct position from the mid of the LWR towards the SEJs as directed.
- g) Introducing correct length of closure rails at both the ends duly measuring the correct length and cutting the available rail to the correct length and inserting in the gap.
- h) Welding the closure rail with the Railway's welding portions and welding equipments under the supervision of Railway's welder. Required skilled labour and consumables viz, petrol for the welding works will have to be arranged by the contractor at his cost.
- i) All labour, tools and plant etc complete by the contractor and as directed by the Engineer in charge.

SPECIAL NOTE FOR USSOR ITEMS:

1) USSOR 211201: This Item shall not be used for the works for which items have already been provided. Duplicity should be avoided. Hourly work scope shall be recorded.

2) USSOR 135011: This item includes Greasing of ERC's with contractor's supply of Grease.