

# CHAPTER-II

## Additional Special Condition of Contract



## **Additional Special Condition of Contract**

- 1.0 DEFINITION AND INTERPRETATIONS. In the Contract documents, the following terms shall have the meanings herein assigned to them except where the contract otherwise requires:
- 1.1 "General Manager" shall mean the Officer-in-Charge of the general superintendence and control of the Zonal Railway/Production Unit and shall also include Addl. General Manager, General Manager (Construction) and shall mean and include their successors of the Successor Railway.
- 1.2 "Engineer" shall mean the Divisional Engineer or Executive Engineer, Divisional Signal & Telecom Engineer, Divisional Electrical Engineer, Divisional Mechanical Engineer in executive charge of the works and shall include the superior officers, both Open Line and Construction Organizations, of Engineering, Signal & Telecom, Mechanical and Electrical Departments, i.e. the Senior Divisional Engineer/Deputy Chief Engineer, Senior Divisional Signal & Telecom Engineer / Dy. Chief Signal & Telecom Engineer, Senior Divisional Electrical Engineer / Deputy Chief Electrical Engineer, Senior Divisional Mechanical Engineer and shall mean & include the Engineers of the Successor Railway.
- 1.3 "Engineer's Representative" shall mean the Assistant Engineer, Assistant Signal & Telecommunication Engineer and Assistant Electrical Engineer, Assistant Mechanical Engineer in direct charge of the works and shall include any Sr. Section/Junior Engineer of Civil Engineering/Signal and Telecommunication Engineering/Mechanical Engineering/Electrical Engineering Departments appointed by the Railway and shall mean and include the Engineer's Representative of the Successor Railway.
- 1.4 "Construction plant" shall mean all appliances or things of whatsoever nature required for execution, completion or maintenance of the works or temporary work (as hereinafter defined) but does not include materials or other things intended to or forming part of the permanent work.
- 1.5 A "Day" shall mean a day of 24 hours from midnight to mid night irrespective of the number of hours worked in that day.
- 1.6 A "Week" shall mean seven days without regard to the number of hours worked on any day in that week.
- 1.7 A "Month" shall mean Gregorian Calendar Month irrespective of the number of hours worked on any day in that month.
- 1.8 "Contract" shall mean and include the Agreement, the Work Order, the accepted Bill(s) of Quantities or Chapter(s) of Standard Schedule of Rates (SSOR) of Railway modified by the tender percentage for items of works quantified, or not quantified, the Standard General Conditions of Contract, the Special Conditions of Contracts, if any; the Drawing, the Specifications, the Special Specifications, if any and Tender Forms, if any.
- 1.9 Singular and Plural: Words importing the singular number shall also include the plural and vice versa where the context requires.
- 2.0 GENERAL
- 2.1 The Additional Special Conditions of Contract, along with the Schedule of Items and Approximate Quantities; Standard General conditions of contract – 2022, Indian Railways Unified Standard Specifications (Formation Works, Bridge Works and P. Way Works), 2021 and NFR USSOR-2021 edition and CPWD Delhi schedule of Rates (DSR-2023) DSR-Vol. I, DSR-Vol. II, DSR-Horticulture and Landscaping-2020), Analysis of Rate for DSR (AOR-Vol. I, AOR-Vol. II)-2023 & CPWD specification (Vol. I, Vol. II) for execution of all civil Engineering work related to Building work, Road work and Horticulture work etc. corrected up to date, and relevant drawings with such amendments which may be published from time to time

during contract period, shall constitute "Contract Documents" and the contractor shall satisfy himself/themselves in every respect as to the true intent and meaning of these contract documents and to the nature, extent and quality of the work required to be executed as no claim whatsoever arising through any misunderstanding of the intention, or the meaning of any of the terms or expressions in these contract documents, shall be entertained after the submission of the tender.

2.2 The work shall be executed in conformity with the tender documents such as the Standard General conditions of contract - 2022 and Indian Railways Unified Standard Specifications (Formation Works, Bridge Works and P. Way Works), 2021 edition and CPWD Delhi schedule of Rates(DSR-2023)(DSR-Vol. I, DSR-Vol. II, DSR-Horticulture and Landscaping-2020), Analysis of Rate for DSR (AOR-Vol. I AOR-Vol. II)-2023 & CPWD specification (Vol. I, Vol. II) for execution of all civil Engineering work related to Building work, Road work and Horticulture work etc. corrected up-to-date, and other documents as per Para 1 of Tender Form (Second Sheet) together with such amendments as may be published from time to time and read in conjunction with the Additional Special Conditions and Special Specifications attached.

2.3 In a tender/contract agreement, in case of any difference, contradiction, discrepancy, with regard to Conditions of tender/contract, Specifications, Drawings, Bill of quantities etc., forming part of the tender/contract, the following shall be the order of precedence:

- i. Letter of Award/Acceptance(LOA)
- ii. Bill(s) of Quantities
- iii. Special Conditions of Contract
- iv. Technical Specifications as given in tender documents
- v. Drawings
- vi. Indian Railways Standard General Conditions of Contract updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
- vii. Indian Railways Unified Standard Specification (IRUSS-2021) updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
- viii. CPWD Specifications 2023 Vol - I & II updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
- ix. Indian Railways Unified Standard Specifications (Formation Works, Bridge Works and P. Way Works),2021 updated with correction slips issued up to date of inviting of tender or as otherwise specified in the tender documents, if applicable in the contract.
- x. IR Specifications/Guidelines updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
- xi. Relevant B.I.S. Codes updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

3.0 DEVIATION(Nil)

4.0 INTENT OF PLANS, SPECIFICATION AND CONTRACT DOCUMENTS:

4.1 The work to be carried out under this contract shall, except as otherwise provided in these conditions, include all labour, materials, (except the materials to be supplied by Railway free of cost) construction plant, equipment and transport which may be required in preparation of and for the full and entire execution and successful completion of the works. The description given in the Schedule of works shall, unless otherwise stated, be held to include carriage and cartage, carrying and hoisting, setting, fitting and fixing in position and all other labour, necessary in and for the full and entire execution and successful completion of the works as aforesaid in

accordance with good practice and recognized principles and any urgent and temporary works fully contingent upon the works.

5.0 INSPECTION AND ADMISSION TO SITE.

5.1 The Contractor shall not be permitted to enter on (other than for inspection purpose) or take possession of the site until instructed to do so by the Engineer in writing. The portion of the site to be occupied by the contractor shall be defined and/or shown in the site plan, or this shall be indicated by the Engineer, and the contractor shall on no account be allowed to extend his operation beyond these areas. The contractor shall not use or allow it to be used the site so allowed to him by the Railway for any purpose other than that of executing the work. The contractor shall make his own arrangement at his own cost for any additional land required by him for the purpose of execution of the work.

5.2 The Contractor shall at his own cost provide, if necessary or if required on the site, all temporary access thereto, to the satisfaction of the Engineer and shall alter, adopt and maintain the same as required from time to time and shall take up and clear them away as and when no longer required and make good all damage done to the site.

5.3 The Tenderer(s) before quoting his rate shall carefully inspect the site and shall be deemed to have satisfied himself about the nature and type of work including ancillary works necessary for satisfactory execution of work. Site accessibility, availability of required materials, need of suitable rollers for compaction of earthwork, drying and wetting of soil before compactions, arrangement for the testing equipment for quality control of earthwork and concrete etc. must be kept in view while quoting the rates.

6.1 MODIFICATION OF DRAWINGS.

The Railway reserves the right to alter/modify the drawings/design to suit the site conditions. If due to the change in drawings or designs there is any increase or decrease in quantities in the items of the schedule, payment shall be made only for the actual quantities executed at the accepted rates. If there is sufficient ground for granting extension of the date of completion on this account, the Railway will consider such request on the merits of each individual case. Such circumstances shall in no way affect or vitiate the contract or alter the character thereof or entitle contractor to damages or compensation thereof.

6.2. MODIFICATION OF CONTRACT : As per GCC-2022 updated with latest Advanced Correction Slip issued upto date of tender publication .

7.0 QUANTITIES IN SCHEDULE AND THEIR VARIATIONS : As per GCC-2022 (Part-II) Clause - 41 & 42 updated with latest Advanced Correction Slip issued upto date of tender publication.

7.1 **Rates for Extra Item(s) of Works:** As per GCC-2022 (Part-II) Clause -39 updated with latest Advanced Correction Slip issued upto date of tender publication.

7.2 The aspect of vitiation of tender with respect to variation in quantities should be checked and avoided. As a result of variations, a contract shall be considered "vitated" only when, the following percentage variation in contract value between tenderers are noticed to have been exceeded.

SN	Value of Contract	Percentage difference between present Contractor and new L-1 as a result of variation. (percentage shall be calculated with base as the revised contract quantities multiplied by the rates of the present contractor)

1	Small value contracts (Tender Value less than Rs 50 lakh)	10
2	Other than small value contracts (Tender Value equal to or more Rs 50 lakh)	5

7.2.1 When the percentage difference between present Contractor and new L-1 is noticed as becoming beyond the values specified above, the following action shall be taken.

The Railway administration should immediately examine whether it is practicable to bring in a new agency to carry out the extra quantity of work keeping in view the progress of the work in accordance with the original contract and the nature and layout of the work. If it is found that there will be no serious practical difficulty in meeting the additional quantity of work done by another agency, then fresh tenders for the extra quantity may be invited otherwise negotiating the rate with the existing contractor for arriving at a reasonable rate for the additional quantities of work, may be adopted.

7.2.2 The above shall be regulated as under:

- a) The case shall be decided by the tender accepting authority (competent for the revised quantity) and shall not be treated as a case of single tender
- b) These instructions will be similarly applicable to earning contracts with H-1, H-2 substituted for L-1, L-2 and so on.
- c) Executives while executing the work shall make all efforts to ensure that no vitiation takes place in normal circumstances. Vitiating should be an exception rather than a routine affair. Efforts should be made to invite bids on the basis of percentage above/below/at par.
- d) Vitiating should always be computed with respect to the items, rates, quantities and conditions as available at the time of Tender Opening and subsequent changes/ additions by way of new items will not be counted for computing Vitiating.

## 8.0 RATES:

8.1 The Tenderer(s)/Contractor(s) have to quote only percentage increase/decrease/at par rate in the schedule. The quantities in schedule of items of work are given in Schedule. In case of any difference in rates given in words & figures, the lowest rate shall be taken as correct.

8.2 The rates for all the items of the schedule shall be inclusive of the cost of all arrangement for crossing frequently all obstructions, in course of the work over land or across water and the cost of providing and maintaining approach service roads and temporary bridging that may be necessary for bringing and removing the construction plants, machinery and materials to and from the site of the work including rent for use of private land and/or compensation for damage, if any due to intervening private land traversed by such approach service roads.

8.3 (i) The rates quoted by the contractor shall be the cost of complete work and shall include the cost of all labour and materials including transport, loading, unloading as well as sheds, construction plants, shuttering, scaffoldings and for which no separate payment is made to him, on satisfactory completion of the work shall remain the property of the contractor.

(ii) The rates, entered in the accepted Bill(s) of Quantities of the Contract are intended to provide for works duly and properly completed in accordance with the General and Special (if any) Conditions of the Contract and the Specifications and drawings together with such enlargements, extensions, diminutions,



reductions, alterations or additions as may be ordered in terms of Clause 42 of GCC-2022 and without prejudice to the generality thereof and shall be deemed to include and cover superintendence and labour, supply, including full freight of materials, stores, patterns, profiles, moulds, fittings, centerings, scaffolding, shoring props, timber, machinery, barracks, tackle, roads, pegs, posts, tools and all apparatus and plant required on the works, except such tools, plant or materials as may be specified in the contract to be supplied to the Contractor by the Railway, the erection, maintenance and removal of all temporary works and buildings, all watching, lighting, bailing, pumping and draining, all prevention of or compensation for trespass, all barriers and arrangements for the safety of the public or of employees during the execution of works, all sanitary and medical arrangements for labour camps as may be prescribed by the Railway, the setting of all work and of the construction, repair and upkeep of all centre lines, bench marks and level pegs thereon, site clearance, all fees duties, royalties, rent and compensation to owners for surface damage or taxes and impositions payable to local authorities in respect of land, structures and all material supplied for the work or other duties or expenses for which the Contractor may become liable or may be put to under any provision of law for the purpose of or in connection with the execution of the contract and all such other incidental charges or contingencies as may have been specially provided for in the Specifications.

However, if rates of existing GST or cess on GST for Works Contract is increased or any new tax /cess on Works Contract is imposed by Statute after the date of opening of tender but within the original date of completion/date of completion extended under clause 17 & 17A of GCC-2022 and the Contractor thereupon properly pays such taxes/cess, the Contractor shall be reimbursed the amount so paid.

Further, if rates of existing GST or cess on GST for Works Contract is decreased or any tax/cess on Works Contract is decreased / removed by Statute after the date of opening of tender, the reduction in tax amount shall be recovered from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

- 8.4 The contractor shall entirely be responsible for ensuring safety of his labour, vehicles, construction plants and equipment while working. No extra payment shall be allowed to the contractor for any safety precautions to be observed during the execution of the work. The cost of such precautions shall be deemed to have been included in the rates for all the items of the schedule.
- 8.5 Conditional discounts offered by the tenderers for coverage within a shorter period, for early inspection/payment etc. shall not be considered for evaluation of tender.
- 9.0 MATERIALS:
- 9.1 The contractor shall at his own expense provide unless specified otherwise in schedule, all materials including cement, reinforcement steel & dowel bars required for the works.
- 9.2 All materials to be provided by the contractor shall be in conformity with the specification laid down in the Standard and Special Specifications of the tender and the contractor shall, if required, furnish proof/test certificate, in support of this to the satisfaction of the Engineer.

- 9.3 Cement and Steel for use in the works should be procured by the contractor from the main producer/their authorized dealers/authorized stockyard, which should conform to IS specification.
- 9.4 Cement bags preferably in paper bag packing should bear the following information in legible markings.
- i) Manufacturer's name.
  - ii) Registered Trade Mark of manufacturer, if any.
  - iii) Type of cement.
  - iv) Weight of each bag in kgs or No. of bags/Tone.
  - v) Date of manufacture, generally marked as week of the year/year of manufacture, e.g. 30/17, which means 30<sup>th</sup> Week of the year 2017.
- 9.5 To ensure quality control, test certificates from the manufactures should be produced by the contractors which should conform to the relevant specifications (latest may be incorporated).
- 9.6 Railways may also take samples during the course of work and get the cement and steel tested to ascertain their conformity to specifications.
- 9.7 When such sampling is done, it should be as per BIS specifications.
- 9.8 Tests on the samples to be carried out in the field should be given as below: -
- (a) Tests on cement to be as per IS 4031. Some of the tests which may be carried out are:-
- i) Compressive strength
  - ii) Initial and final setting time
  - iii) Consistency.
  - iv) Soundness.
- (b) Tests on steel samples will be carried out as per IS Specifications
- 9.9 The contractor shall be liable to render full accountable of all materials to be supplied by Railways for consumption on the works, and keep proper records regarding their use, which shall be made available for inspection when required. Without prejudice to be right of the Railway if it is detected that the quantity of cement and/or steel is less than the quantity ascertained/computed according to the prescribed specifications and approved drawings the cost of cement and/or steel not so used shall be recovered from the contractor(s) on the basis of the formula stipulated in clause 10.6 below.
- 9.10 For stacking cement the contractor shall at his own cost build suitable damp proof godown at the site of work and make all satisfactory storing arrangements to see that the strength of cement is not deteriorated.
- 9.11 The Contractor shall indemnify and save harmless the Railway from and against all actions, suit, proceedings, losses, costs, damages, charges, claims and demands of every nature and description brought or recovered against the Railways by reason of any act or omission of the Contractor, his agents or employees, in the execution of the works or in his guarding of the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

- 9.12 It shall be clearly understood that the rates to be quoted shall include all wastages and wash away either due to rains or storm or floods or other causes whatsoever. The rates shall also include the cost that may be necessary for stacking the materials at site of work.
- 10.0 SUPPLY OF MATERIALS BY RAILWAY ON LOAN BASIS
- 10.1 The items of Stores viz. R.S. Joists with cross bracings, CC Cribs with Clamps, P.Way materials, Wooden sleepers, rails & fittings only as may be required for making "Temporary arrangement" for execution of the work shall be supplied by the Railway on loan basis subject to the availability.
- 10.2 Materials to be supplied by the Railway shall be issued only to the extent of requirement. The contractor shall make his own arrangement for loading, unloading and transportation of the materials from Railway's Godown/Depots or any other Station/location between stations as directed by the Railway Engineer.
- 10.3 The Railway materials will be issued to the contractor as per provision of para 1269 of the Indian Railway Engg. Code, 2012 -revised edition.
- 10.4 The contractor may also be issued the Railway materials directly from wagons, in which case a notice for taking delivery will be given by the Engineer or his representative and for which no extra payment shall be admissible. The contractor shall have to unload the wagons within the free unloading time admissible as per rules. In case of failure to do so within the free time, he shall be liable to pay demurrage charges. The rates quoted should include the cost of all transport, loading, unloading, re-handling, carriage with all lead lift & descent.
- 10.5 The contractor at his own cost shall return and hand over all the Railway materials issued on loan basis at the supply points/locations directed by the Engineer in serviceable and good conditions.
- 10.6 In case of failure of the contractor to return the Railway materials issued on loan basis in serviceable/sound and good condition the cost of the Railway Materials not returned shall be recovered from the contractor at the recovery rate of excess materials supplied by the Railway should 1.5 time the cost of procurement which is inclusive of freight. The decision of the Deputy Chief Engineer (Construction) regarding serviceability or otherwise of the materials returned shall be final.
- 10.7 If there is any delay on the part of the Railway in supplying materials which the Railway has undertaken to supply as above and if as a result thereof the completion of the work is delayed, the Railway will consider on specific request by the Contractor granting suitable extension of completion date for such loss of time. The Railway will however, not entertain any claim from the contractor on this regard due to any loss suffered by him on account of his labour or any other account as a result of delay in supply of materials.
- 10.8 For items at the percentage rate above, below or at par with N. F. Railway Unified Standard Schedule of Rates 2021 edition under the head "Any other items of works etc." and DSR- 2023 the rates quoted shall include all loading carrying and transport of materials supplied by the Railway from the points specified in clause 10.2.

## **11. Use of Railway Land:**

- 11.1 Use of Railway land required by the contractor(s) for labour camp would be permitted to him/them free of charge by Railway, if available. However, this would be subject to approval of the Competent Authority of the Railway. Conservancy charges, as applicable, would be payable. The land will be restored to Railway by the contractor(s) in the same condition as when taken over or in vacant condition as desired by the engineer, after completion of the work or at any earlier day, as specified by the



Engineer. The failure to do so will make the contractor(s) liable to pay the cost incurred by the Railway for getting possession of land.

**11.2** The tenderer(s) shall also acquaint himself /themselves with the availability of land, working space for his/their works etc. The Railway will not acquire any land for the purpose of movement of vehicles of the Contractor/s for executing the work by the contractor/s.

**11.3** Water and Electrical charges wherever consumed by the Contractor while executing this Contract would be paid by the Contractor as per Clause 31 of GCC.

11.4 The land shall be vacated by the contractor within 15 days after completion of work/closure of the contract, which does not include the maintenance period, or service of notice for vacation of allotted land by Railway Administration, failing which a penalty at @ 3% of the market value of occupied land per month or part there off will be levied till its vacation.

11.5 The allotted land should be handed over back in original condition after vacation. The certificate of vacation of land shall be submitted by contractor duly signed by the concerned SSE/Works and ADEN. Release of PG /SD is subject to handing over back the allotted land.

11.6 Allotted land should not be used for purpose other than for which it is allotted. Use of allotted land for other purpose will result in cancellation of allotment and its vacation. Contractor will also be liable to pay penalty @ 3% of the market value of the land per month or part there off for duration of misuse of such land till its vacation and handing over back to Railway. Such amount will be recovered from the amount due to contractor, i.e., final bills/SD/PG or any pending bills.

11.7 Eviction proceedings shall also be resorted to in addition to penal recoveries as mentioned in above paras.

**11.8 Use of Private Land**

The Contractor will have to make his/their own arrangements for use of private land, outside Railway limits for due fulfillment of contract or for borrow pits, approaches, etc., directly with the land owners or local authority and to pay such rents/charges if any as are payable as may be mutually agreed upon between them.

**12. Figures, Dimensions, etc.**

Figures, dimensions and drawings shall supersede measurements by scale and drawing to larger scale shall take precedence over those to a smaller scale. Special dimensions or directions in the specification shall supersede all else.

**13.0 TAXES.**

13.1 All rates quoted in the Tender shall be deemed to be inclusive of all Taxes, Royalties, etc. payable by the Contractor(s) to the Govt. or Public Body or Local Authority and no additional amount will be paid or claim entertain on the account by then Railway.

13.2 All Taxes such as Income Tax, Sales Tax and other Taxes as prescribed by Central/State Govt. from time to time shall be applicable. The Contractor shall be fully responsible for payment of all such Taxes without any liability of Railway Administration. Deduction towards such Taxes shall be made from the payments of the Contractor in accordance with Rules in force from time to time.

**13.3 Income Tax:**

The Railway will deduct Income Tax @ 2% of the gross amount and surcharge on income Tax of each bill as prescribed by Govt from time to time and such deduction of Income Tax shall be recovered while making payment to the Contractor/s. The settlement of Income Tax should be made by the contractor with the Income Tax authority.

- 13.4 Contractor will be required to obtain a royalty clearance certificate from the concerned Revenue Authorities / Collector and produce the same to the Engineer after completion of supply but before release of the final bill. If in any case the contractor fails to produce the clearance certificate for the Royalty charges, an amount equal to the amount unpaid royalty charges, as intimated by the Revenue Authorities / Collector or as calculated on the relevant rates for payment of royalty charges applicable to the area, may be retained from the dues of the Contractor. No claim regarding interest charges for retention of the aforesaid amount shall be entertained.
- 13.5 Whenever forest produces like sand, stone, timbers etc. are used in the work, the contractor(s) will have to furnish documentary proof that requisite royalty on such produces has been paid to the concerned departments.
- 13.6 GST i.e. Goods and Services Tax including CGST, SGST & IGST shall be deducted from the Contractor's bill as per prevailing norms.

*(Authority: Railway Board's L/No. 2017/CE-I/CT/4/GST dt. 23.06.2017)*

#### **14.0 Notice to Public Bodies**

The Contractor(s) shall give to the Municipality, Police and other authorities all notices that may be required under the law or any other statutory orders and obtain all requisite licenses, permits, etc. for temporary obstructions, enclosures and pay all fees, taxes and charges, which may be leviable on account of his own operations in executing the contract. He should make good any damage to adjoining premises whether public or private and supply and maintain any lights, etc., required at night.

#### **15.0 Damage by Accident, Floods/Tides Or Natural Calamities:**

- (i) No assurance can be given regarding the vulnerability of Railway land to flood/tides or other such natural calamities. Railway undertakes no responsibility or liability in this regard. The contractor shall take all necessary precautions against damages from accidents, floods or tides or other natural occurrence. He shall not be entitled to any compensation for his tools, plants, materials, machines and other equipment lost or damaged by any cause whatsoever.
- (ii) The contractor shall be liable to make good the damage to any structure or part of structure, plant or material of every description belonging to Railway covered under the contract, lost or damaged by any cause during the course of the contractor's work. Railway will not be liable to pay to the contractor any charges for rectification or repairs to any damages which may have occurred from any cause whatsoever, to any part of new structure during construction.

#### **16.0 Access To Work Site**

- (i) Contractor shall have acquainted himself with the availability of roads and their conditions for transportation of materials, machinery etc. to the work site. Railway will not acquire any land for the purpose of movement of vehicles of the Contractor for executing the work by the contractor.
- (ii) The Contractor will be permitted to make use of existing service roads, or service roads constructed by the Railway for its use free of cost. New service roads required by the contractor/s either near the work site or elsewhere within or outside railway limits for carriage of materials or for any other purpose whatsoever, will have to be constructed and maintained by the contractor at his own cost. For the purpose of constructions of service roads on railway land, permission will be given free of any charge. Railway reserves the right to retain all such service roads in Railway land without paying any compensation for the same. However, if so decided by Railway, contractor will have to remove the service road and make good all damage done to the site.
- (iii) If any land other than railway land is necessary to be acquired or to be entered upon, permission to enter in the land will have to be arranged by the contractor at his cost. The contractor will not refer any claim, whatsoever on this account. The Railway, however, reserves the right to make use of such service roads as may be constructed by the contractor without payment of any charges.

## **17.0 EMERGENCY WORKS**

- 17.1 In the event of any accident or failure occurring in, on or about the work or arising out of or in connection with the construction, completion or maintenance of the works, which in the opinion of the Engineer requires immediate attention, the Railway may bring its own workmen or other agency to execute or partly execute the necessary work or carry out repairs if the Engineer considers that the contractor/s is/are not in a position to do so in time and charge the cost thereof, to be determined by the Principal Chief Engineer/DRM---, Northeast Frontier Railway/----, to the contractor. The decision of the Engineer's representatives in regard to the need, appropriateness and adequacy of the deployment of the Railway Workmen or other agency with necessary equipment shall be final and conclusive.
- 17.2 Recovery for deployment of the Workmen would be at the rate specified in Clause 15.2, herein.

## **18.0 MAINTENANCE PERIOD**

- 18.1 **For Supply, consultancy and hiring items.**  
The maintenance period is limited to date of completion of work
- 18.2 **All works other than mentioned in clause 18.1 above.**  
The tenderer(s) shall be required to maintain the work effectively for a period **mentioned below** from the date of completion as per **Clause 47 of the General Conditions of Contract -2022** and no part refund of Security Deposit shall be permitted during the maintenance period mentioned above.
- 18.2.1 Other than earthwork- 6(Six) months.
- 18.2.2 Earthwork-Minimum 6 months but covering at least one monsoon period (Monsoon period be 1<sup>st</sup> June to 30<sup>th</sup> October).
- 18.3.0 In case a different Maintenance Period is specified in the 'Additional Special Condition for the Work', the same would be applicable to the contract in supersession of the Maintenance Period specified in this Para.

## **19. INSTRUCTIONS/DIRECTIVES OF THE ENGINEER'S REPRESENTATIVE**

- 19.1 The contractor shall always execute the work under this contract in strict compliance with the instructions/directives by the Engineer's representative. Any act of non-compliance with the instruction/directives issued by the Engineer's representative shall be considered as a default of the contractor liable to action as per conditions of contract. The decision of the Engineer whether there has been an act of non-compliance with the instruction/directives of the Engineer's representative for the purpose of this clause shall be final and conclusive.
- 19.2 In case of any act of non-compliance, in addition to other remedies available to the Railway & without prejudice to the Railway's rights in this regard, Engineer's Representative can suspend the Contractor's work till he is satisfied that the contractor is in a position/will comply with the instructions/directives issued by the Engineer's Representative. Decision of the Engineer's Representative in this regard shall be final and conclusive. Contractor shall not have any claim whatsoever against the Railway for such short term/long term suspension of the contract work.
- 19.3 During the above-mentioned 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 of the contractor shall be deemed to be an unauthorized work, liable for action under the Indian Railway Act.
- 19.4 The instructions/directives by the Engineer's representative shall not, however, absolve the contractor of his responsibility or reduce his responsibility in any manner whatsoever in regards to maintaining at all times the safe working conditions at the work site.

**20.0 NON-COMPLIANCE WITH THE INSTRUCTIONS/DIRECTIVES OF THE ENGINEER'S REPRESENTATIVE.**

- 20.1 The contractor shall always comply with the instructions/directives issued by the Engineer's representative from the time to time. In the event of any non-compliance with such instructions/directives, apart from and in addition to other remedies available to the Railway as specified herein above the Engineer's representative may employ at the works Railway's workmen 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 representatives in regard to the need of appropriateness and adequacy of the deployment of the Railway Workmen with necessary equipment shall be final and conclusive.
- 20.2 When the Railway workmen with necessary equipment are deployed in the above manner, recovery at the following rate shall be made from the contractor's dues under this contract or any other money of the contractor available with the Railway under this contract. The recovery for the total Railway Workmen Hours employed at the **rate of Rs. 2000/- (Rupees Two Thousand only) per Workman-days** irrespective of the type and grade of the Railway Employee actually employed. The aggregate period of the Workman-days for the above recoveries shall be reckoned from the time the Railway Workmen are actually deployed at the work site till the work is completed to the satisfaction of the Engineer's Representative whose decision in this regard shall be final and conclusive.
- 20.3 During the above-mentioned 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 of the contractor shall be deemed to be an unauthorized work on the work site. For such acts, the contractor shall then be liable for further appropriate action under the relevant provisions of the Indian Railway Act.

**21.0 WARRANTY**

The Contractor(s) shall warrant the materials supplied under this contract to be free of any defects in material and workmanship under ordinary use and service.

**22.0 SHIFTING OF ELECTRICAL/TELEGRAPH WIRES.**

In some stretches, high-tension grid towers /electric telegraph/telephones wires or posts etc. are to be shifted. It is expected that the electric lines/towers will be shifted in good time but in case, there is any delay on this account suitable extension in date of completion will be considered and given to the contractor for only the effected portion and no compensation whatsoever in this respect or due to the delay thus caused will be payable and contractor has to adopt such methods of execution of earthwork so as not to cause any damage to existing structure lines etc.

**23.0 HANDING OVER OF SITE FOR WORK.**

- (i) The Railway will hand over the site free of all obstructions to contractor. However, entire land required for completion of this work may not be handed over in the beginning of work. Land may be handed over in different stretches, which may not be continuous. Contractor(s) will be required to carry out the work in available stretches. However, if some stretch of land cannot be handed over in time, contractor shall not have any claim whatsoever against the Railway for any delay in the execution of the work, on this account except for extension of the completion period under the General Conditions of Contract.
- (ii) If shifting of electric lines/towers, telegraph/telephones wires or post etc. involved for clearing the site same will be arranged by Railway in good time to complete the work. In case of any delay on this account, suitable extension in date of completion will be considered only for the effected portion and no compensation whatsoever in this respect or due to delay caused will be payable and contractor has to adopt such method of execution so as not to caused any damaged to existing structure, lines etc.

**24.0 MODE AND TERMS OF PAYMENT:**

- 24.1 All payments will normally be made only for finished works on the basis of mode and terms of payments agreed upon and provided in the contract.
- 24.2 **MANNER OF PAYMENT:** Payment to the contractor will be made through Electronic Fund Transfer (EFT) for payment of running and final bills. The tenderer(s) will also fill the **Annexure-H** indicating the bank account number, name of bank and bank specific code number (MICR/IFSC) as enclosed. The conditions and **Annexure-H** will be part of the tender document.
- 24.3 **PAYMENT TO LABOUR AND STAFF :** It is desirable that all payment of the Contractor towards Labour and other Staff engaged for this Contract would be paid into their Bank Account.
- 25. Accident/natural calamities:-**
- 25.1 Vehicle and equipment's of the contractor can be drafted by Railway Administration in case of accidents/natural calamities involving human lives.
- 25.2 Payment for such vehicle and equipment's etc. will be made as per accepted rates if available in the agreement or decided as per Clause 39 of General Condition of Contract. In case of disagreement, Principal Chief Engineer/DRM/---- Northeast Frontier Railway/CAO/CON/ or CE/CON in NFR CONSTRUCTION 's decision after hearing both the parties in the matter would be final and binding on the Contractor and the Railway.
- 25.3 Contractor may submit list of vehicles and equipment available with him.
- 26.0 PLEA OF CUSTOM.**
- 26.1 The plea of "Custom" prevailing will not on any account be permitted as an excuse for infringement of any of the conditions of contract or specifications.
- 26.2 The contract shall not be vitiated by any inadvertent omissions of any kind in the surveys, information, specifications, drawings or schedule of quantities.
- 27.0 **BONDED LABOUR SYSTEM:** The tenderer shall note that bonded labour system is completely done away with on the Indian Railways including contractor's establishments on the Railways
- 28.0 PROGRAMME AND COMPLETION PERIOD**
- 28.1 Since, the time is the essence of the contract, the tenderer shall note that in the event of his tender being accepted, he should be in a position to commence the work immediately and shall complete the same in all respect within the completion period as mentioned in NIT / Corrigendum from the date of issue of acceptance letter whatever be the date of execution of work order or agreement.
- 28.2 It shall be obligatory for the tenderer to submit his programme of work and time schedule, in such a form as to facilitate monitoring of the work using the modern networking techniques, as to how he proposes to complete the work within the stipulated date.
- 28.3 The agreement or the approval of the programme by the Engineer shall not relieve the contractor or any of his responsibilities to complete the whole works by the prescribed time.
- 28.4 If the work does not commence within specified date of starting or if at the subsequent time the rate of execution falls below the specific programme as indicated above, the Railway Administration (Construction Organization) will have the power to determine the end of the contract at any stage without incurring any liability on the part of the Railway Administration for any sort of compensation for the money invested by the contractor(s) or the loss incurred by him/them due to such termination of the contract. In all cases of incomplete work, either by termination of contract by the Railway Administration under consideration stated above or due to failure on the part of the contractor(s) to complete the work within stipulated date of completion of the Agreement, the Railway shall be entitled to take the action for rescinding the contract in terms of clause 62 of GCC-2022.
- 28.5

28.6

The Contractor shall submit to the Engineer, for approval, an updated Program, whenever the Engineer may so direct, to take account of the actual progress of the Contract Works so as to achieve completion either before the due date for completion or by the due date for completion or as soon as practicable thereafter. The Engineer may further require the Contractor to indicate the means by which the programmed progress will be achieved. If the Contractor does not submit an updated Programme within a reasonable period as indicated by the Engineer, the Engineer may withhold the payment of next on account bill until the overdue Programme has been submitted.

A general guideline, in form of Chart, showing progress of work is available at Annexure-G. Tenderer should submit works programme accordingly.



## 29.1 EXTENSION OF COMPLETION DATE:

- 17A Extension of Time in Contracts:** Subject to any requirement in the contract as to completion of any portion or portions of the works before completion of the whole, the Contractor shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:
- (i) **Extension due to Modification:** If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise.
  - (ii) **Extension for Delay not due to Railway or Contractor:** If in the opinion of the Engineer, the progress of work has any time been delayed by any act or neglect of Railway's employees or by other Contractor employed by the Railway under Sub-Clause (4) of Clause 20 of these Conditions or in executing the work not forming part of the contract but on which Contractor's performance necessarily depends or by reason of proceeding taken or threatened by or dispute with adjoining or to neighbouring owners or public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Engineer pending arbitration or in consequences of the Contractor not having received in due time necessary instructions from the Railway for which he shall have specially applied in writing to the Engineer or his authorized representative then upon happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer within 15 days of such happening, but shall nevertheless make constantly his best endeavours to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Engineer to proceed with the works. The Contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time.
  - (iii) **Extension for Delay due to Railways:** In the event of any failure or delay by the Railway to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the Railway due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the Contractor to damages or compensation therefor, but in any such case, the Railway may grant such extension or extensions of the completion date as may be considered reasonable.

The Contractor shall indicate the period for which the work is likely to be delayed and shall seek extension of time as may be considered necessary under clause 17A(i) or/and 17A(ii) or/ and 17A(iii) above, as soon as the cause thereof shall arise and, in any case, not less than 15 days before the expiry of the date fixed for completion of the works. The Engineer shall consider the same and shall grant and communicate such extension of time as in his opinion is reasonable having regard to the nature and period of delay and the type and quantum of work affected thereby. No other compensation shall be payable for works so carried forward to the extended period of time; the same rates, terms and conditions of contract being applicable, as if such extended period of time was originally provided in the original contract itself.

The non-submission of request for extension or submission of request within less than 15 days before the expiry of the date fixed for completion of the works, shall make him ineligible for extension under these sub clauses, subject to final decision of Engineer.

**17B Extension of Time with Liquidated Damages (LD) for delay due to Contractor:** The time for the execution of the work or part of the works specified in the contract documents shall be deemed to be the essence of the contract and the works must be completed not later than the date(s) as specified in the contract. If the Contractor fails to complete the works within the time as specified in the contract for the reasons other than the reasons specified in Clause 17 and 17A, the Railway may, if satisfied that the works can be completed by the Contractor within reasonable short time thereafter, allow the Contractor for further extension of time (Proforma at Annexure-VII of GCC-2022) as the Engineer may decide. On such extension the Railway will be entitled without prejudice to any other right and remedy available on that behalf, to recover from the Contractor as agreed damages and not by way of penalty for each week or part of the week, a sum calculated at the **rate of Liquidated Damages as decided by Engineer, between 0.05% to 0.30% of contract value of the works for each week or part of the week.**

For the purpose of this Clause, the contract value of the works shall be taken as value of work as per contract agreement including any supplementary work order/contract agreement issued. Provided also, that the total amount of liquidated damages under this condition shall not exceed 5% of the contract value or of the total value of the item or groups of items of work for which a separate distinct completion period is specified in the contract.

Provided further, that if the Railway is not satisfied that the works can be completed by the Contractor and in the event of failure on the part of the contractor to complete the work within further extension of time allowed as aforesaid, the Railway shall be entitled without prejudice to any other right or remedy available in that behalf, to appropriate the contractor's Security Deposit and rescind the contract under Clause 62 of these Conditions, whether or not actual damage is caused by such default.

NOTE:

In a contract, where extension(s) of time have been allowed once under clause 17B, further request(s) for extension of time under clause 17A can also be considered under exceptional circumstances. Such extension(s) of time under clause 17A shall be without any Liquidated damages, but the Liquidated damages already recovered during extension(s) of time granted previously under clause 17B shall not be waived. However, Price variation during such extension(s) shall be dealt as applicable for extension(s) of time under clause 17B.

**29.2 Bonus for Early Completion of Work [Clause 17 (C) of the GCC- (Part-II) – 2022]:** In case of open tenders having advertised value more than Rs 50 crore and original period of completion 12 months or more, when there is no reduction in original scope of work by more than 10%, and no extension granted on either railway or Contractor's account, Contractor shall be entitled for a bonus of 1% for each 30 days early completion of work. The period of less than 30 days shall be ignored while working out bonus. The maximum bonus shall be limited to 5% of original contract value. The completion date shall be reckoned as the date of issuance of completion certificate by engineer.

### **30.0 PROGRESS OF WORKS.**

30.1 The contractor shall submit to the Engineer a monthly report giving progress of works by the third of the following month.

30.2 It shall be ensured that the works are carried out according to the agreed programme and no change is made except with the prior approval or at the instance of the Engineer.

30.3 The contractor shall participate in periodical meetings with the Engineer to review the progress of the work. In case a slippage in the time schedule due to the contractor's inability to perform as per agreed programme, the contractor shall take such action as may be necessary to bring back his work to schedule without additional cost to the Railway, either by employing over time operations, increasing the number of shifts, capacity of construction plants, or as directed by the Engineer.

30.4 The contractor shall immediately inform the Engineer whenever there is or is likely to be any change in the schedule.

#### 31.0 INSPECTION OF SITE.

31.1 The tenderer shall in their own interest examine the drawings, conditions of contract and specifications of work. They shall also inspect the site and satisfy themselves on their own as to the hydrological, climatic and physical conditions prevailing at site, the nature, extent and practicability of the works, all existing and required roads and other means of communication and across to the site, whether by water or land, availability of housing and other facilities, the source of supply of different materials and their adequacy, royalty, monopoly ferry charges, labour and probable site for labour camp, stores and godowns etc. They shall themselves obtain all necessary information as to risk, contingencies and other circumstances which may affect or influence their tender. No extra charges consequent on any insufficient appreciation or otherwise shall be entertained.

It shall be deemed that the tenderer has inspected the site in all respect as explained in para 31.1 before quoting his rates and has satisfied himself about the nature and type of work including ancillary works necessary for the satisfactory fulfillment of the contract.

31.2 Should there be any discrepancy in, or any doubt or obscurity as to the meaning of any of the tender documents or as to anything to be done or not to be done by the tenderer or the instructions to be observed by him, he must set forth in writing such discrepancies, doubts or of obscurities and submit the same to the General Manager/Construction, N. F. Railway, Maligaon, Guwahati for elucidation as soon as possible but not later than 17 days before the last date fixed for closing of tenders.

#### 32.0 SUPERVISION AND APPROVAL BY ENGINEER.

32.1 All works embracing more than one process shall be subject to examination and approval by the Engineer at each stage thereof and the contractor shall give due notice to the Engineer or the whatsoever representative when such state is ready. In default of such notice, the Engineer shall be entitled to appraise the quantity and extent thereof, even at a later stage at the risk and cost of the contractor.

32.2 The contractor will set up a properly equipped laboratory either in the field or at a suitable location to conduct test regarding quality control of concrete and other tests as required under the specification prescribed.

32.3 The Engineer reserves the right to reject the whole or part of work executed, which in his judgment does not comply with the requirements of the specifications. The decision of the Engineer shall be final and conclusive in this matter for all purposes.

#### 33.0 EXAMINATION OF WORK BEFORE COVERING UP.

33.1 No work shall be covered up or put out of view without the approval of the Engineer or his whatsoever representative and the contractor shall accord full opportunity for examination and measurement of any work which is about to be covered up or put out of view and for examination of foundations before permanent work is put thereon. The contractor shall give 7 days' notice to the Engineer or his representative whenever any such work of foundation is ready for examination and the Engineer or his whatsoever representative shall within reasonable time, unless he considers it unnecessary and advises the contractor accordingly, attend for the purpose of examination and measurement of such foundations. In the event of failure of the

contractor to give such notice he shall, if required by the Engineer, uncover such work at contractor's expense.

33.2 Railway Officials concerned with the contract shall have powers at any time to inspect and examine any part of the works and the contractor shall give such facilities as may be required for such inspection and examination.

33.3 The contractor shall uncover any part of work and or make openings in or through the same as the Engineer may from time to time direct for his verification and shall reinstate and make good such part to the satisfaction of the Engineer at his own cost.

#### 34.0 REMOVAL OF OBSTRUCTIONS.

34.1 Before the work is started, the site shall be cleared of all obstructions like trees and bushes along with their roots, heavy grass and shrubs by the contractor at his own cost.

34.2 The contractor shall not have any claim in case of delay by the Railway in removal of trees or shifting raising, removing of telegraph or telephones or electric lines (overhead or underground) and other structure, if any, which may come in way of the work.

34.0 STORES, SHEDS AND YARDS: The provision of clause 25 of GCC, 2022 (Part-II) shall be applicable.

34.1 The contractor shall provide at his own cost suitable storage arrangement for cement and steel to the satisfaction of the Engineer and the Engineer or his representative shall have the authority at all times to inspect the storage arrangement and contractor shall provide all facilities for inspection and check of materials. For the materials supplied by the Railway the contractor shall at all times maintain proper records showing the basis of the indent, the receipts and whatsoever of the materials and these shall at all times be opened for inspection by the Engineer or his representative.

34.2 The storage capacity for cement shall be for not less than 30 days requirement of cement for the work on hand and anticipated at the time at the rate of progress of work. The arrangement for storage shall be such as to ensure that utilization of cement is in order of its arrival at the stores.

34.3 All the stores viz. steel and cement which are supplied by the Railway shall be stored by the contractor only at places approved by the Engineer. The storage and safe custody of these materials after issue shall be the responsibility of the contractor.

34.4 Inflammable materials such as petrol, oil etc. shall be stored separately from other store and all the precautions as required under the Indian Explosive Act shall be taken by the contractor(s) and shall indemnify absolutely the Railway and its officers and employees against any claim or liability arising out of any accident or violation of any laws, rules and orders.

#### 35.0 TOOLS AND PLANTS.

35.1 All construction plants, temporary works and materials provided by the contractor shall when brought to the site be deemed to be exclusively intended for the construction and completion of the work and the contractor shall not remove the same or any part thereof (save for this purpose of moving it from one part of the site to another) without the consent in writing of the Engineer.

35.2 On completion of the work, the contractor shall remove from the site all the said construction plants and temporary works remaining thereon and any whatsoever materials provided by the contractor.

35.3 The Railway shall not at any time be liable for the loss of injury to any of the said construction plant, temporary works of materials save as otherwise provided in these documents.

35.4 The contractor shall make his own arrangement for all construction plants and equipment, tools including spare parts, fuel and consumable stores and all labour

required to ensure efficient and methodical execution of the work. The quoted rates shall be inclusive of all charges as such items.

36.0 NIGHT WORKS.

36.1 The provision in clause 23 of the GCC- (Part-II) –2022 shall be noted regarding execution of work between sunset and sunrise. If the Railway is however, satisfied that the work is not likely to be completed in time except by resorting to night work, by special order the contractor would be required to carry out the work, even at night, without conferring any right on the contractor for claiming extra payment for introducing night work. In the event of night working, the contractor will make necessary adequate lighting arrangement for smooth execution of work.

36.2 If the contractor works round the clock on all days including Sundays and holidays, the Railway shall make arrangements for the supervision accordingly.

37.0 REPRESENTATION ON WORKS.

Regarding representation on works and supervision, the provisions in clause 12 of Standard General Conditions of contract (Part-II)-2022 shall be applicable respectively.

38.0 REMOVAL OF IMPROPER WORK AND MATERIAL

The Engineer or the Engineer's Representative shall be entitled to order from time to time:

- (a) The removal from the site, within the time specified in the order, of any materials which in his opinion are not in accordance with the specifications or drawings.
- (b) The substitution of proper and suitable materials, and
- (c) the removal and proper re-execution, notwithstanding any previous tests thereof or on account payments therefor, of any work which in respect of materials or workmanship is not in his opinion in accordance with the specifications and in case of default on the part of the Contractor in carrying out such order, the Railway shall be entitled to rescind the contract under Clause 62 of of GCC (Part-II), 2022
- (d) The provision of Construction and Demolition Waste Management Rule 2016 issued by Ministry of Environment Forest and Climate Change dated 29.03.2016 and published in the Gazette of India, Part – II, Section -3, Sub-section (ii) are binding upon the Contractor. Contractor shall implement these provisions at worksites, for which no extra payment will be payable.

39.0 DISMANTLING

39.1 When dismantling of any existing structure is involved to facilitate the Construction, the contractor shall submit the scheme for dismantling of the existing structure. Execution of dismantling works shall be done after approval of Railway.

39.2 The dismantling of structure should be done under proper supervision and as per approved scheme of dismantling. At major dismantling sites minimum level of supervision shall be Senior Section Engineer, who should be nominated by Dy.Chief Engineer/Con. in writing.

39.3 The dismantling Plan should be scrutinized by the Drawing Office and approved by H.O.D. in case of Construction Organization. The dismantling plan should invariably show various stages of dismantling, equipment to be used for dismantling, area likely to be affected by debris, any adjacent buildings likely to be affected and action to be taken thereof.

39.4 Proper barricading should be done to stop access of unauthorized personnel near the dismantling area. Wherever necessary, assistance of RPF should be taken to prevent people from coming close to dismantling area. The contractor should also display sign boards warning people not to enter the danger zone.

- 39.5 Proper announcement through public address system should be done at regular intervals to keep the onlookers away from the major dismantling affected Zone.
- 39.6 The adjacent building likely to be affected by dismantling should be evacuated.
- 39.7 In area where law and order is likely to be affected, assistance of local Police should be taken to keep people away from dismantling area.

#### 40.0 LABORATORY AT SITE

- 40.1 The contractor shall also establish a self-sufficient quality control laboratory before physical start of work to carry out necessary test for the quality control of the earthwork, design and quality control of concrete mix such other related tests as may be necessary and desirable in the interest of the work. In the event of failure of the contractor even after giving 7 days' notice to contractor to provide a site laboratory with necessary equipment and technical personnel, Railway shall be within its rights to take further action in terms of G.C.C. Further, cost of tests and all incidental and departmental charges etc. carried out at any other approved laboratory/test house shall be borne by the contractor.
- 40.2 The Engineer may however; at his discretion for work costing more than Rs. 50.0 lakhs allow the tests to be carried out in any other approved laboratory under the supervision of his representative. All the tests, in such case, shall be got done by the contractor at his own cost including cost of transporting the specimen to the laboratory, and any other incidental charges.
- 40.3 The decision of the Engineer in regard to the selection of the laboratory shall be final.
- 40.4 Departmental Officials concerned with contract shall be entitled at any time to inspect and examine materials intended to be used in or on the works, either on the site or at factory or workshop or other place(s) where such materials are assembled, fabricated or manufactured or at any place(s) where these are lying or from which these are being obtained and the contractor shall give such facilities as may be required for such inspection and examination.

#### 41.0 MEASUREMENT CERTIFICATE AND PAYMENT

- 41.1 On account payment shall be made according to the provisions made in Clause **44, 45** and **46** of Indian Standard General Conditions of Contract (Part-II), 2022.
- 41.2 With the approval of Chief Administrative officer, N. F. Railway (Construction), measurement of works can also be taken by the Contractor (i.e. contractor's authorised Engineer) as per the para No **1316A** of Indian Railway Code for Engineering Department, for works costing more than Rs. **5 Crores**. Detailed procedure is given in ANNEXURE- CMB

#### 41.3 Letter of Credit (LC)

- (i) For all the tenders having advertised cost of Rs 10 lakh or above, the contractor shall have the option to take payment from Railways through a letter of credit (LC) arrangement.
- (ii) This option of taking payment through LC arrangement has to be exercised in IREPS (Indian Railway Electronic Procurement System - the e-application on which tenders are called by Railways) by the tenderer at the time of bidding itself, and the tenderer shall affirm having read over and agreed to the terms and conditions of the LC option.
- (iii) The option so exercised, shall be an integral part of the bidder's offer.
- (iv) The above option of taking payment through LC arrangement, once exercised by tenderer at the time of bidding, shall be final and no change shall be permitted, thereafter, during execution of contract.
- (v) In case tenderer opts for payment through LC, following shall be the procedure to deal release of payment through LC:



- (a) The LC shall be a sight LC
- (b) The contractor shall select his Advising/Negotiating bank for LC. The incidental cost towards issue of LC and its operation thereof shall be borne by the contractor.
- (c) SBI, New Delhi, Main Branch will be the nodal branch for issue of LCs based on online requests received from Railway Accounts Units for tenders opened in financial year prevailing financial year. SBI branches where the respective Railway Accounts Office has its Account (local SBI branch) will be the issuance/reimbursing branch for LC issued under this arrangement. The Bank shall remain same for this tender till completion of contract. The incidental cost @0.15% per annum of LC value, towards issue of LC and operation thereof shall be borne by the contractor and shall be recovered from his bills.
- (d) The LC shall be opened initially for duration of 180 to 365 days in consultation with contractor. The LC shall be extended time to time as per the progress of the contract, on the request of the contractor. The value of LC to be opened initially as well as extended thereafter shall be finalised by the engineer in consultation with the contractor on the basis of expected progress of work.
- (e) The LC terms and conditions shall inter-alia indemnify and save harmless the Railway from and against all losses, claims and demands of every nature and description brought or recovered against the Railways by reason of any act or omission of the contractor, his agents or employees, in relation to the Letter of Credit (LC). All sums payable/borne by Railways on this account shall be considered as reasonable compensation and paid by contractor.
- (f) The LC terms and conditions shall inter-alia provide that Railways will issue a Document of Authorisation (format enclosed as Annexure-P) after passing the bill for completed work, to enable contractor to claim the authorized amount from their bank.
- (g) The acceptable, agreed upon document for payments to be released under the LC shall be the Document of Authorisation.
- (h) The Document of Authorisation shall be issued by Railway Accounts Office against each bill passed by Railways.
- (i) On issuance of Document of Authorisation, a copy of Document of Authorisation shall be posted on IREPS for download by the contractor. A digitally signed copy of Document of Authorisation shall also be sent by Railway Accounts Office to Railway's bank (Local SBI Branch).
- (j) The contractor shall take print out of the Document of Authorisation available on IREPS and present his claim to his bank (advising Bank) for necessary payments as per LC terms and conditions. The claim shall comprise of copy of Document of Authorisation, Bill of Exchange and Bill.
- (k) The payment against LC shall be subject to verification from Railway's Bank (Local SBI Branch).
- (l) The contractor's bank (advising bank) shall submit the documents to the Railway's Bank (Local SBI Branch).
- (m) The railway's bank (issuing bank) shall, after verifying the claim so received w.r.t. the digitally signed Document of Authorisation received from Railway Accounts Office, release the payment to contractor's bank (advising bank) for crediting the same to contractor's account.
- (n) Any number of bills can be dealt within one LC, provided the sum total of payments to contractor is within the amount for which LC has been opened.

- (o) The LC shall be closed after the release of final payment including PVC amount, if any, to the contractor.
- (p) The release of performance guarantee or security deposit shall be dealt directly by railway with the contractor i.e., not through LC.
- vi) For opening of LC, executive department shall make a request letter to concerned Accounts Department on a format, placed as Annexure - O.

42.0 INCOMETAX

42.1 In pursuance of Finance Act 1972 introducing section 194-C in the Income Tax Act 1961 providing deduction of income tax at source from income comprised in payment made to the contractor for carrying out any work or supply of labour for carrying out any work, the N. F. Railway Administration shall be entitled to deduct 2% (Two per cent) of gross payment of any sum paid after 31st May, 1972 to the contractor as Income Tax plus surcharge on the amount of Income Tax, whenever regulated from time to time.

42.2 The contractor(s) are requested to submit the details as per the proforma attached.

43.0 GOODS ANDSERVICE TAX(GST)

**Applicable as per Clause-6 (Care In Submission of Tenders) of GCC-2022 (Part-I) updated with latest Advanced Correction Slip issued upto date of tender publication.**

44.0 SECURITY DEPOSIT (SD)

44.1 The Security Deposit shall be 5% of the contract value. The Bid Security submitted by the Contractor with his tender will be retained/encashed by the Railways as part of security for the due and faithful fulfillment of the contract by the Contractor Provided further that, if Contractor submits the Cash or Term Deposit Receipt issued from a Scheduled commercial bank of India or irrevocable Bank Guarantee Bond from a Scheduled commercial bank of India, either towards the Full Security Deposit or the Part Security Deposit equal to or more than Bid Security, the Railway shall return the Bid Security, to the Contractor.

Balance of Security Deposit may be deposited by the Contractor in cash or Term Deposit Receipt issued from Scheduled commercial bank of India or irrevocable Bank Guarantee bond issued from Scheduled commercial bank of India, or may be recovered at the rate of 6% of the bill amount till the full Security Deposit is recovered. Provided also that in case of defaulting Contractor, the Railway may retain any amount due for payment to the Contractor on the pending "on account bills" so that the amounts so retained (including amount guaranteed through Performance Guarantee) may not exceed 10% of the total value of the contract.

The Irrevocable Bank Guarantee submitted towards Security deposit shall be initially valid up to the stipulated date of Maintenance period plus 60 days and shall be extended from time to time, depending upon extension of contract granted in terms of Clause 17A and 17B of the Standard General Conditions of Contract.

Note: Security Deposit deposited in cash by the Contractor or recovered from the running bills of a Contractor or submitted by contractor as Term Deposit Receipt(s) can be refunded/returned to the contractor, in lieu of irrevocable Bank Guarantee bond issued from scheduled commercial bank of India, to be submitted by him, for an amount equal to or more than the already available Security Deposit, provided however that, in a contract of value less than Rs. 50 Crore, such refund/ return of the already available Security Deposit is permitted up to two times and in a contract of value equal to or more than Rs. 50 Crore, such refund / return of the already available Security Deposit is permitted up to three times.

44.3 Refund of Security Deposit:

- i) Security Deposit mentioned above shall be returned to the Contractor along with or after the following:
  - a) Final Payment of the Contract as per clause 51.(1) of the GCC- (Part-II)-2022 and
  - b) Execution of Final Supplementary Agreement or Certification by Engineer that Railway has No Claim on Contractor and
  - c) Maintenance Certificate issued, on expiry of the maintenance period as per clause 50. (1) of the GCC- (Part-II)-2022
- ii) Forfeiture of Security Deposit: Whenever the contract is rescinded as a whole under clause 62 (1) of GCC, the Security Deposit already with railways under the contract shall be forfeited. However, in case the contract is rescinded in part or parts under clause 62 (1) of GCC, the Security Deposit shall not be forfeited.

44.4 No interest shall be payable upon the Bid Security and Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited in terms of Sub- Clause 16.(4)(b) of GCC will be payable with interest accrued thereon.

45.0 PERFORMANCE GUARANTEE (PG)

The procedure for obtaining Performance Guarantee is outlined below:

- (a) The successful bidder shall have to submit a Performance Guarantee (PG) within 21 (Twenty one) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 21 (Twenty one) days and upto 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 21(Twenty one) days, i.e. from 22nd day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day.

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit Bid Security and other dues payable against that contract, subject to maximum of PG amount. In case a tenderer has not submitted Bid Security on the strength of their registration as a Startup recognized by Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect.

Failed Contractor shall be debarred from participating in re-tender for that work.

- (b)-1 The successful bidder shall submit the Performance Guarantee (PG) amounting to 5% of the original contract value and a additional Performance Guarantee as mentioned below in clause (b)-2 in any of the following forms:
  - i A deposit of Cash.
  - ii Irrevocable Bank Guarantee (e-BG is also acceptable).
  - iii Government Securities including State Loan Bonds at 5% below the market value.
  - iv Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India;
  - v Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
  - vi Deposit in the Post Office Saving Bank:

- vii Deposit in the National Savings Certificates.
- viii Twelve years National Defence Certificates.
- ix Ten years Defence Deposits.
- x National Defence Bonds and
- xi Unit Trust Certificates at 5% below market value or at the face value whichever is less. Also, FDR in favour of FA&CAO/CON, N. F. Railway, Maligaon (free from any encumbrance) may be accepted.
- xii Insurance Surety Bond as per Annexure-XVII.

Note: In case of extension of Date of Completion, selected bidder needs to submit extended Insurance Surety Bond/ Fresh Insurance Surety Bond/ Fresh Performance Security, in any form as given above, before expiry of existing Insurance Surety Bond. (ACS-11)

- (b)-2 If a tender is accepted on the quoted rates of bidder which is below the advertised tender value, an additional Performance Security shall be submitted by the bidder as tabulated below: (ACS-11)

Bid quoted in % of advertised cost	Additional Performance Guarantee (%)
1. Below 0 – 5% (inclusive)	NIL
2. Below 5%	5%

- c) The Performance Guarantee shall be submitted by the successful bidder after the Letter of Acceptance (LOA) has been issued, but before signing of the contract agreement. This P.G. shall be initially valid upto the stipulated date of completion plus 60 days beyond that. In case, the time for completion of work gets extended, the Contractor shall get the validity of P.G. extended to cover such extended time for completion of work plus 60 days.
- d) The value of PG to be submitted by the Contractor is based on original contract value and shall not change due to subsequent variation(s) in the original contract value.
- e) The Performance Guarantee (PG) shall be released after physical completion of the work based on 'Completion Certificate' issued by the competent authority stating that the Contractor has completed the work in all respects satisfactorily.
- f) Whenever the contract is rescinded, the Performance Guarantee already submitted for the contract shall be encashed.
- g) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the President of India is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:
  - i Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee.
  - ii Failure by the Contractor to pay President of India any amount due, either as agreed by the Contractor or determined under any of the Clauses/Conditions of the Agreement, within 30 days of the service of notice to this effect by Engineer.
  - iii The Contract being determined or rescinded under clause 62 of the GCC- 2022.

#### 46. BANKERS CERTIFICATE OF BANKGUARANTEE ON SFMS

The Bank hereby confirms that it is on the SFMS (Structured Financial Messaging System) and shall invariably send the advice of this Bank Guarantee to the following bank details –

IFSC CODE	SBIN000RAIL
IFSC TYPE	BRANCH
BANK NAME	STATE BANK OF INDIA
BRANCH NAME	RAIL
CITY NAME	NAVI MUMBAI
ADDRESS	SECTOR-11, CBD BELAPUR, NAVI MUMBAI
DISTRICT	NAVI MUMBAI
STATE	MAHARASHTRA
BG ENABLED	YES

The Bank guarantee (BGs) to be submitted by Suppliers/Contractors should be sent directly to the concerned authorities by the issuing Bank under Registered post A.D.

#### 47.0 ADVANCESTOCONTRACTORS:

If specifically provided in Tender Documents of tender having advertised value more than Rs 50 Crores, Railway shall make payment, as an Interest bearing advances, as per Contractor's request. These advances shall carry a simple interest as indicated in Annexure - MA of the Tender documents. The payment and recovery of such advances shall be made as per manners prescribed in Clause 46.4 of the Standard General Conditions of Contract-2022.

If payment(s) of Advances are applicable in the contract, as mentioned in the Tender Documents, Railway shall make payment(s) of Interest bearing advances, on the request of contractor. The payment and recovery of such Advances shall be made as under:

#### 47.1. MOBILIZATION ADVANCE: (Applicable to Tender of value of Rs. 50.00 Crs. and above)

47.1.1 This shall be limited to 10% of the contract value and shall be payable in 2 Stages as indicated below:

Stage-1st: - 5% of contract on signing of the contract agreement after fulfilling the conditions specified there for.

Stage-2nd: - 5% on Mobilization of site-establishment, setting up offices, bringing in equipment and actual commencement of work to the satisfaction of Railway whose decision in this regard will be final and conclusive.

The stage 1 of advance shall be payable immediately after signing of contract agreement.

The stage 2 of advance shall be payable at the time of mobilization, only after submission of an utilization certificate by the contractor that the Stage 1 advance has been properly utilized in the contract.

#### 38.1.2: Advance Against Machinery and Equipment –

This advance shall be limited to a maximum of 10% of the contract value against new Machinery & Equipment, involving substantial outlay, brought to site and essentially required for the work. This advance shall not exceed 75% of the purchase price of such Equipment and shall be payable when hypothecated to the President of India by a suitable bond or alternatively covered by an irrevocable Bank Guarantee for full cost of the Plant & Equipment from a Nationalized bank in India in a form acceptable to Railways. The Plant & Equipment shall be insured for the full value and for the entire

period, they are required for the work. This Plant & Equipment shall not be removed from the site of work without prior written permission of the Engineer. No advance should be given against old Plant & Machinery.

47.1.5 The above advances are subject to the following conditions-

- i. The advance shall carry an interest at the rate to be decided by the Railway Board and communicated at the beginning of every financial year, to be applicable for the tenders to be opened in that financial year.
- ii. Advances except those against machinery and equipment, shall be payable against irrecoverable guarantee (Bank Guarantee, FDRs, KVPs/NSCs) of at least 110% of the value of the sanctioned advance amount (covering principal plus interest). The Bank Guarantee shall be from a Nationalised Bank in India or State Bank of India in a form acceptable to the Railways.
- iii. The recovery shall commence when the value of contract executed reaches 15% of original contract value and shall be completed when the value of work executed reaches 85% of the original contract value. The instalments on each "on account bill" will be on pro-rata basis;
- iv. That the grant of advance is primarily in Railway's own interest;
- v. That a contractor does not receive advances for same work from different officers;
- vi. That arrangements are made with the Accounts Officer for proper accounts being kept with regard to payment and recovery of these advances; and
- vii. That all necessary precautions are taken to secure Government from the possibility of loss and for preventing the system becoming more general or continuing longer than what may be absolutely necessary for proper progress of the work.

*(Authority: Railway Board's L/No. 2022/CE-I/CT/GCC-2022/POLICY Dt. 27.04.2022)*

47.3. Method of recovery of interest

Interest shall be recovered on the advance outstanding for the period commencing from the date of payment of advance till date of particular on-account bill (through which recovery of principal is effected) and adjusted fully against on-account bill along with pro-rata principal recovery. In the event of any short-fall, the same shall be carried forward to the next on-account bill and shall attract interest.

The Bank Guarantee for such advances shall clearly cover at least 110% of the value of the sanctioned advance amount (covering principal plus interest).

48. STAGE PAYMENT ON SUPPLY OF STEEL: Applicable for Contract value more than Rs. 15.00 Crs only)

48.1 The material shall be strictly in accordance with the contract specifications.

48.2 The tender schedule shall provide for individual NS rate to be quoted by the tenderers for steel separately. The material shall be delivered at site and properly stored under covered sheds in measurable stacks.

48.3 The quantities of materials shall be brought to the site only in such installments that would facilitate smooth progress of work and consumed in reasonable time.

48.4 Proper accountal in the material register to be maintained in the prescribed format at the site for the receipt and use of the material.

48.5 Ownership of such material shall be deemed to vest with the Railways for which the contractor should submit an indemnity bond in prescribed format.



- 48.6 Before releasing the stage payment, the contractor shall insure the material at his own cost in favour of Railway against theft, damages, fire etc.
- 48.7 Stage payment in all such cases shall not be more than 75% of the rate of steel awarded in the contract. The balance payment shall be released only after the material is actually consumed in the work.
- 48.8 The price variation claim for steel would continue to be governed as per extant PV clause with reference to delivery at site.
- 49 Provision of vehicle for supervision: The successful tenderer will be required to provide well maintained vehicle with licensed driver and fuel for supervision and inspection of works by Railway field Engineers on day to day basis.
- 50 Photograph, site record and video film of work during execution of works for important bridges etc.
- 50.1 The successful tenderer will be required to prepare video film recording of entire construction and edit the same with proper commentary. The same shall cover the whole work in duration of about 90 minutes. This film shall pictorially represent the entire construction of foundation, substructure and superstructure starting from beginning to end of work. Two copies of video film in CD shall be handed over to the Railway along with the necessary details, instructions, literature etc. The rates for works of foundation, substructure and superstructure will be inclusive of the cost of such filming.
51. Assignment or Subletting of Contract: The Contractor shall not assign or sublet the contract or any part thereof or allow any person to become interested therein in any manner whatsoever without the special permission in writing of the Chief Engineer, save as provided below. Any breach of this condition shall entitle the Railway to rescind the contract under Clause 62 of these Conditions and also render the Contractor liable for payment to the Railway in respect of any loss or damage arising or ensuing from such cancellation; provided always that execution of the details of the work by petty Contractor under the direct and personal supervision of the Contractor or his agent shall not be deemed to be sub-letting under this clause.

In case Contractor intends to subcontract part of work, he shall submit a proposal in writing seeking permission of Chief Engineer for the same. While submitting the proposal to railway, Contractor shall ensure the following:

- (a)
- (i) The Contractor shall not sub- contract the Works comprising more than 40% (forty per cent) of the Contract Price and shall carry out Works for at least 60% (sixty per cent) of the total Contract Price directly under its own supervision and through its own personnel. The Parties expressly agree that for the purposes of computing the value of sub-contracts under this Clause 3.2.1, the Contract Price shall exclude any sub-contract for the procurement of goods and equipment like [rails, sleepers and track fittings, signaling and telecommunication & Power supply equipment]. The Parties agree that all obligations and liabilities under this Agreement for the entire Railway Project shall at all time remain with the Contractor. {The Parties agree that works equal to at least 30% (thirty per cent) of the Contract Price shall be discharged solely by the Lead Member.} \$ **ACS-11**

Procurement of material, hire of equipment or engagement of labour by prime contractor or procuring entity will not mean sub-contracting.

\$ May be deleted if the Contractor is not a Consortium/Joint Venture.

- (ii) The subcontractor shall have successfully completed at least one work similar to work proposed for subcontract in last 5 years, ending date of submission of proposal by Contractor to Railway, costing not less than 35% value of work to be subletted, in last 5 years through a works contract. For fulfilment of above, Work Experience Certificate issued by a Govt. Department/Organisation shall be considered. Further, Work Experience Certificate issued by a Public listed company shall be considered provided the company is having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, registered at least 5 years back from the date of submission of proposal by Contractor to Railway and work experience certificate issued by a person authorised by the Public Listed Company to issue such certificates.

Note: For subletting of work costing up to Rs 50 lakh no previous work experience shall be asked for by the Railway.

In case contractor submits subcontractor's work experience certificate issued by public listed company, the contractor shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

- (iii) There is no banning of business with the sub-contractor in force over IR.

(b) The Contractor shall provide to the Engineer a copy of the agreement to be entered into by Contractor with subcontractor. No subcontractor shall be permitted without a formal agreement between Contractor and subcontractor. This agreement shall clearly define the scope of work to be carried out by subcontractor and the terms of payment in clear & unambiguous manner.

(c) On receipt of approval from Chief Engineer, Contractor shall enter into a formal agreement legally enforceable in Court of Law with subcontractor and submit a copy of the same to the Engineer.

(d) The Contractor shall intimate to the Engineer not less than 7 days in advance, the intended date of commencement of subcontractor's work.

(e) Once having entered into above arrangement, Contractor shall discontinue such arrangement, if he intends to do so at his own or on the instructions of Railway, with prior intimation to Chief Engineer.

(f) The Contractor shall indemnify railway against any claim of subcontractor.

(g) The Contractor shall release payment to the Sub-contractor(s) promptly and shall endeavour to resolve all issues amicably and speedily with the Sub-contractor(s), so that the execution of work is not affected in any manner whatsoever.

- (h) In addition to issuance of work experience certificate to Contractor, the Engineer, when, based on documents, is satisfied that subcontracted work has been carried out by subcontractor, shall issue work experience certificate to the subcontractor also for the portion of work subcontracted and successfully completed by the sub-contractor. *Note: Work Experience Certificate to the subcontractor shall be issued only when the contractor's work is complete and contractor is entitled for the issuance of Work Experience Certificate. However, in the same contract, when the Chief Engineer, based on documents, is satisfied that the subcontractor has successfully carried out subletted work; without issuance of work experience certificate to subcontractor at this stage, the Chief Engineer can, only once, consider the successfully completed subletted work for the fulfillment of eligibility for further subletting of work to the subcontractor in the same contract. When the contractor's work is complete and contractor is entitled for the issuance of work experience certificate, the subcontractor shall be issued one Work Experience Certificate for the total scope of work executed by the subcontractor in the contract*
- (i) The responsibility of successful completion of work by subcontractor shall lie with Contractor. Subcontracting will in no way relieve the Contractor to execute the work as per terms of the Contract.
- (j) Further, in case Engineer is of the view that subcontractor's performance is not satisfactory, he may instruct the Contractor to remove the subcontractor from the work and Contractor has to comply with the above instructions with due promptness. Contractor shall intimate the actual date of discontinuation of subcontract to Engineer. No claim of Contractor whatsoever on this account shall be entertained by the Railway and this shall be deemed as 'excepted matter' (matter not arbitrable).
- (k) The permitted subcontracting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the Railway and shall not relieve the Contractor of any responsibility under the Contract.

ADDITIONAL SPECIAL CONDITIONS OF CONTRACT  
(SAFETY RULES)

- 1.1 Suitable scaffolds should be provided for workmen for all works that cannot be safely done from the ground or from solid construction except for such short periods work as can be done safely from ladders. When a ladder is used an extra labour shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable foot holds and handholds shall be given an inclination not steeper than 1 to 4 (1 Horizontal to 4 Vertical).
- 1.2 Scaffolding or staging more than 3.5 meter above the ground or floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached, bolted, bracketed and otherwise secured at least 1 meter high above the floor or platform of such scaffolding or staging and extending along the entire length thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be fastened as to prevent it from swaying from the building or structure.
- 1.3 Working platform gangways and stairways should be so constructed that they should not sway unduly or unequally and where the height of the platform or the gangway or the stairway is more than 3.5 meter above ground level or floor level they should be closely boarded, should have adequate width and should be suitably fastened as described in the para above.
- 1.4 Safe means of access shall be provided to all working platform and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 10 meter in length while the width between side rails in swung ladder shall in no case be less than 300 mm. for ladder up to and including 3.5 meter in length.
  - 1.4.1 For longer ladders this width should be increased by at least 20 mm. each additional meter of length. Uniform steps spacing shall not exceed 300 mm. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of work shall be so stacked or placed so as to cause danger or inconvenience to any persons or the public. The Contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defenses of every suit, action or other proceedings at law that may be brought by any persons for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person shall be paid by the Contractor to compromise any claim by any such person. In case the Contractor fails to settle such problems, the Railway Administration will make payments arising on account of the conditions given above to the concerned parties and recover the same from Contractor's dues without any delay. Contractor will not have any claim on this account at any stage.
- 1.5 Demolition: Before any demolition work is commenced and also during the process of work:
  - A) All roads and open area adjacent to the work site shall either be closed or suitably protected.
  - B) NO ELECTRIC CABLE OR APPARATUS WHICH IS LIABLE TO BE A SOURCE OF DANGER OVER A CABLE OR APPARATUS USED BY THE OPERATOR SHALL REMAIN ELECTRICALLY CHARGED.
  - C) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosives or flooding. No floor, roof or other part of the building shall be so over loaded with debris or materials as to render it unsafe.
- 1.6 All necessary personal safety equipment as considered adequate by the Engineer in Charge should be kept available for the use of the persons employed in the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by these concerned.
  - a) Workers employed on mixing asphaltic materials cement and mortar shall be provided with protective goggles.

- b) Those engaged in white washing and mixing or stacking of cement bags or any materials which are injurious to the eye shall be provided with protective goggles.
  - c) Those engaged in welding works shall be provided with welder's protective eye sight lids.
  - d) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- 1.7 When the work is done near any place where there is risk of drowning, all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any persons in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
- 1.8 Use of hoisting machines and tackles including their attachment anchorage and supports shall conform to the following standards of condition.
- a) i) These shall be of good mechanical construction, sound materials and adequate strength and free from defects and shall be kept in good repair and in good working order.
  - ii) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength and free from defects.
  - b) Every crane driver or hoisting appliances operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffolding.
  - c) In case of every hoisting machine and every cable ring, hook, shackle, swivel and pulley block used in hoisting or as means of suspension safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of hoisting machine having a variable safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machinery or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
  - d) In case of departmental machine, the safe working load shall be notified by the Technological Engineer-in-Charge. As regards to Contractor's machines, the contractors shall notify the safe working load of machine to the Engineer-in-charge whenever he brings any machinery to site of work, get it verified by the Engineer concerned.
- 1.9 Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safe guards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental decent of the load; adequate precautions should be taken to reduce the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on Electrical installations which are already energized, insulating mats wearing apparel, such as gloves, sleeves and both as may be necessary should be provided. The workers should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.
- 1.10 All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate warning facilities should be provided at or near places of work.
- 1.11 These safety provisions should be brought to the notice of all concerned by display on a notice board, at a prominent place at the work spot. The persons responsible for compliance of the safety code shall be named therein by the Contractor.
- 1.12 To ensure effective endorsement of the rules and regulations relating to safety precautions, the arrangements made by the contractor shall be open to inspection by the Labour Officer, Engineer-in-charge of the Department or their representative.
- 1.13 Notwithstanding the above clause from 7.1 to 7.12, there is nothing in these to exempt the contractor from the operations of any other act or rule in force in the Republic of India.
- 1.14 PRECAUTION TO BE TAKEN WHILE PLYING OF VEHICLES ADJACENT TO RUNNING

## LINES TO PREVENT ACCIDENT TO TRAINS

- 1.14.1 Whenever a Lorry or any other Form of Road transport is required to ply along or in the vicinity of a running line or any other Railway track where Railway Engines or Trains are liable to move, the Contractor shall inform the Engineer in writing, of such requirement specify in the locations and duration of time over which such specified Road Vehicles have to operate in the area (for loading, leading or unloading of earth, ballast or any other materials, or plants or equipment) without any obstruction or dislocation to the running Trains.
- The Contractor shall also furnish the particulars of Vehicles and the names and Photographs of Driver and attendant retained for each Vehicle to enable the Engineer to issue necessary permits allowing the holder to operate the Vehicles, with such restrictions regarding duration and /or location as are considered necessary. Such permit shall be returned to the Engineer as soon as the work for which it is issued is over.
- 1.14.2 The Engineer-In-Charge or his Authorized Representative will personally counsel, examine and certify the road Vehicle Drivers, Contractor's Flag Man and Supervisor and will give written permission giving names of Road Vehicle Drivers, Contractor's Flag Man 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:
- (a) The Road Vehicles will ply only between sunrise and sunset.
  - (b) Nominated Vehicles and Drivers will be utilized for the work in presence of at least one Flag Man and on Supervisor certified for such work.
  - (c) The Vehicle shall ply 6 meter clear of track. Any movement / work at less than 6 meter and up to minimum 3.5 meter clear of track centre, shall be done only in presence of Railway Employee authorized by the Engineer-In-Charge. No part of the Road Vehicle will be allowed at less than 3.5 meter from track centre. Cost of such Railway Employee shall be the Railway
  - (d) The Contractor shall remain fully responsible for ensuring safety and in case of any accident shall bear the cost of all damages to this equipment and crew and also damages to Railway and its Passengers. Engineer-In-Charge may impose any other condition necessary for a particular work of site. Such permit shall be returned to the Engineer, as soon as the work for which it is issued is over.
- 1.14.3 The Contractor shall execute a Bond undertaking to ply the Road Vehicles in a safe and satisfactory manner and strictly in accordance with the stipulation and other conditions specified by the Engineer and to engage and retain only the permit Holder to be the Contractor's Agent In-Charge of the Vehicle and the attendance shall at all time, be vigilant and on the lookout for signals from the Look Out Man, Flag Man or other personnel available at Site with a view to stop or late the road movement so as to ensure adequate margin of safety for the timely passage of an approaching Train or a Railway Engine, without any delay or detention.
- 1.14.4 The Contractor shall also be bound by the provisions of this Agreement to ply the Road Vehicles only with adequate margin of safety, well clear of the fixed structure profile of infringement, as stipulated in the rules laid under the Indian Railway's Act and to seek and be guided by the signals and other directions of any Look Out Man or other personnel retained for the purpose of ensuring safety, and to ensure extra care and vigilance while turning, reversing or moving the Road Vehicles in any other manner at an inclination to the running Railway track or the siding as the case may be. The Contractor shall employ necessary Look Out Man also at his own cost, irrespective of any other arrangements that Railway may make in this regard.
- 1.14.5 The Contractor also undertakes to make good at his cost, any inconvenience, loss, damage or other expenses, cause incurred by the Railway Administration and to pay such amount as are determined by the Engineer to be recoverable from Contractor as penalty



or damages from any omission, negligence, carelessness, oversight or accident on the part of any Contractor's Agent, Drivers or Attendant or any other person to whom the services of the Holder of the permit (issued by the Engineer) has been lent or otherwise made accessible available.

- 1.14.6 Suitable gates/barriers should be installed across the new embankment, preferably adjoining the manned/unmanned level crossings. The entry for the vehicles shall be regulated by an authorized representative of the Engineer-in-charge during the working hours.
- 1.14.7 Any breach of these conditions by the Contractor and his Agents affecting the safety of movement of Trains, Engines, or other rolling stock of the Railway, shall constitute a breach of contract by the Contractor entitling liability termination of contract for the fault on the part of the contract.

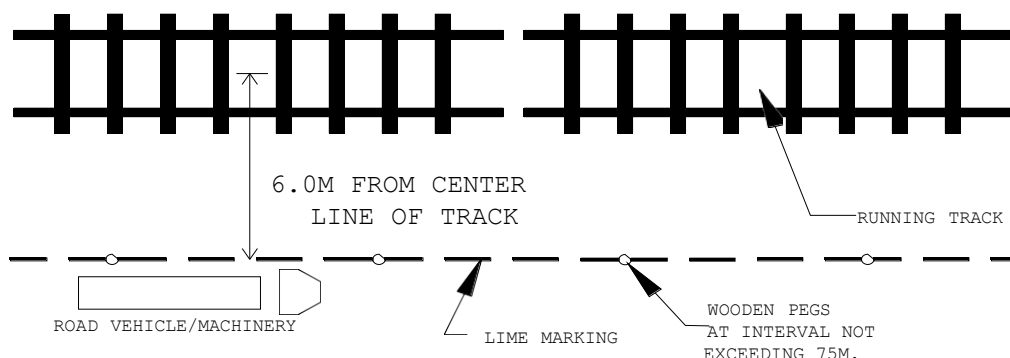
### **1.15 Safe working of contractors (Extract of para 826 of IRPWM) :-**

- 1.15.1 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 without 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 shall be so carried out that there is no infringement to the Railway's schedule of dimensions. For this purpose, the area where road vehicles and/or machinery are required to ply, shall be demarcated and acknowledged by the contractor. Special care shall be taken for turning/ reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions.
  - (iii) The look out and whistle caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable 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 contractor's supervisor as per Performa annexed shall be issued by AXEN/XEN, 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 moving dimensions and stacked as per the specified heights and distance from the running track.

Supplementary site specific instructions, wherever considered necessary shall be issued by the Engineer in Charge

### **1.16 PLYING OF ROAD VEHICLES AND WORKING OF MACHINERIES CLOSE TO RUNNING TRACKS**

- (i) Normally, the road vehicles shall be run or machinery shall be worked so as not to come closer than 6.0m from centre line of nearest running track.
- (ii) The land strip adjacent to running tracks, where road vehicle is to ply or machinery is to work, shall be demarcated by lime in advance in consultation with the Railway's Supervisor. The road vehicles shall ply or machinery shall work so as not to infringe the line of demarcation.



- (iii) If a road vehicle or machinery is to work closer to 6.0m due to site conditions or requirement of work, following precautions shall be observed.
- (iv)
- (v) In no case the road vehicle shall run or machinery shall work at distance less than 3.5m from centre line of track.
- (vi) Demarcation of land shall be done by bright colored ribbon/nylon chord suspended on 75cm high wooden/bamboo posts at distance of 3.5 m from centre line of nearest running track.
- (vii) Presence of an authorized Railway's representative shall be ensured before plying of vehicle or working of machinery.
- (viii) Railway's Supervisor shall issue suitable caution order to Drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train. Whistle boards shall be provided wherever considered necessary.
- (ix) Lookout men shall be posted along the track at a distance of 800m from such locations who will carry red flag and whistles to warn the road vehicle/machinery users about the approaching trains.
- (x) On curves where visibility is poor, additional lookout men shall be posted.
- (xi)

**If vehicle/machinery is to be worked closer to 3.5m from running track.**

- (i) Under unavoidable conditions, if road vehicles is to ply or machinery is to work closer to 3.5m due to site conditions or requirement of work, following precautions shall be observed:
- (ii) Plying of vehicles or working of machinery closer to 3.5m of running track shall be done only under protection of track. Traffic block shall be imposed wherever considered necessary. The site shall be protected as per provisions of Para No. 806 & 807 of P-Way Manual as case may be.
- (iii) Presence of a Railway's Supervisor shall be ensured at worksite.
- (iv) Railway's Supervisor shall issue suitable caution order to Drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train.

**Precaution to be taken while reversing road vehicle alongside the track.**

- (i) The location where vehicle will take a turn shall be demarcated duly approved by Railway's representative. The road vehicle driver shall always face the Railway track during the course of turning/reversing his vehicle. Presence of an authorized Railway representative shall be ensured at such location.
- (ii) Road vehicle shall not be allowed to run along the track during night hours generally. In unavoidable situations, however, vehicles shall be allowed to work during night hours only in the presence of an authorized Railway's representative and where adequate lighting arrangements are made and where adequate precautions as mentioned earlier have been ensured.
- (iii)
- (iv) Road vehicles/machinery/plant etc. when stabled near running tracks shall be properly secured against any possible roll off and always be manned even during off hours.

**1.17 EXECUTION OF WORKS CLOSE TO OR ON RUNNING LINES**

Any work close to or on running tracks shall be executed under the presence of a Railway's Supervisor only.

**Precaution to be taken to ensure safety of trains while execution of work close to the running line or on running lines.**

- (i) Such works shall be planned and necessary drawings particularly with regard to infringement to moving dimensions shall be finalized duly approved by competent authority before execution of work. The work shall be executed only as per approved procedure and drawings.
- (ii) All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimension do not infringe.
- (iii) Suitable speed restriction shall be imposed or Traffic block shall be ensured as required.
- (iv) The site shall be protected as per provisions of Para No. 806 & 807 of Indian Railway P-Way Manual as case may be
- (v) Necessary equipment for safety of trains during emergency shall be kept ready at site.

**Precaution to be taken to ensure safety of electrical/signal/ telephone cables while excavating near tracks.**

- (i) Particular care shall be taken to mark the locations of buried electrical/signal/telephone cables on the plans jointly with S & T/Electric supervisor and also at site so that these are not damaged during excavation.
- (ii) Copy of the cable plan should be given to the contractor's authorized representative before handing over the site to start the work.
- (iii) Due care shall be taken to ensure that any part of the equipment or machinery or temporary arrangement does not come close to cables while working.

**Precaution to be taken during execution of works requiring traffic blocks.**

- (i) Any work, which infringes the moving dimensions, shall be started only after the traffic block has been imposed.
- (ii) Before closing the work, the track shall be left with the proper track geometry so that the trains run safely.
- (iii) After completion of work the released sleeper and fittings should be properly stacked away from the track to be kept clear of moving dimensions.
- (iv) Block shall be removed only when all the temporary arrangement, machineries, tools, plants etc. have been kept clear of moving dimensions.

**Precaution to be taken during execution of works during night.**

- (i) The work close to running line, generally, shall be carried out only during day hours. At locations, however, where night working is unavoidable, proper lighting arrangement should be made. The engineering indicator boards shall be lighted during night hours as per the provisions of IRPWM. The staff deputed for night working should have taken adequate rest before deploying them in night shift. We can specify duration of night shift from 20.00 hrs to 04.00 hrs. All other safety precautions applicable for day time work should be strictly observed during night working.

**Precautions to be taken to ensure safety of workers while working close to running lines.**

- a. Necessary lookout men with red flags and whistles shall be provided to warn the workmen about the approaching train.
- b. Railway's supervisor shall issue suitable caution order to Drivers of approaching train for whistling to warn the workers about the approaching train. Whistle boards shall be provided wherever considered necessary.
- c. A "First aid kit" shall always be kept ready at site.

**Precaution shall be taken for safety of public or passengers ,while executing works at locations, used by passengers and public,.**

The worksite shall be suitably demarcated to keep public and passengers away from work area. Necessary signage boards such as "Work in progress. Inconvenience is regretted" etc. shall be provided at appropriate locations to warn the public/ passengers. Adequate lighting arrangement of worksite wherever required shall be done to ensure safety of public/passengers during night.

**Precaution to be taken before stacking materials along side the track to ensure that safety of trains is not affected.**

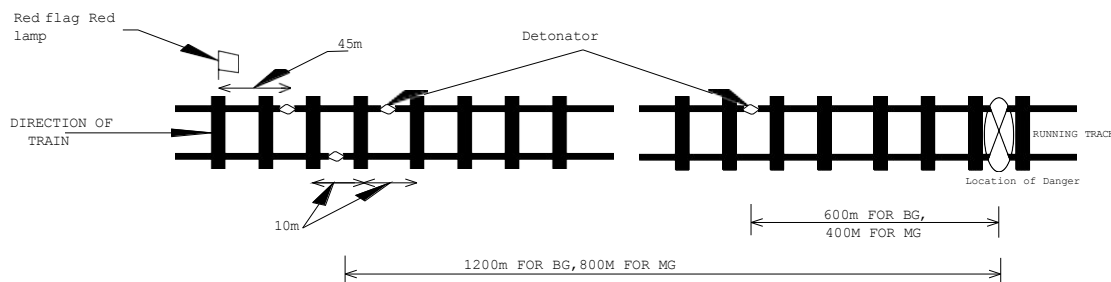
The following precautions shall be taken before stacking the materials along the track for stacking of ballast, rails, sleepers etc.

- The sites for material stacking should be selected in advance in such a manner as to ensure that no part of the material to be stacked is infringing the Standard Moving Dimensions. A plan of proposed stacking locations be made and signed jointly by an authorized Railway's representative and contractor's representative.
- The selected locations shall be marked by lime in advance.
- Presence of an authorized Railway's representative while unloading and stacking shall be ensured.
- The material shall be stacked in such a height so as to not to infringe SOD in case of accidental roll off.

### 1.18 PROTECTION OF TRACK DURING EMERGENCY

- Action to be taken when a contractor's supervisor or vehicle operator apprehends any unusual circumstances likely to infringe the track and endanger safe running of trains. At any time if a contractor's supervisor or vehicle operator observes any unusual circumstances likely to infringe the track and apprehend danger to safe running of track, he shall take immediate steps to advise a Railway official of such danger and assist him in protection of track.

The track shall be protected as under. One person shall immediately plant a red flag (red lamp during night) at the spot and proceed with all haste in the direction of approaching train with a red flag in hand (red lamp during night) and plant a detonator on rail at a distance of 600m from the place of obstruction of BG track (400m for MG track) after which he shall further proceed for not less than 1200m from the place of obstruction from BG track (800m for MG track) and plant three detonators at 10m apart on rails. After this he shall display the red flag (red lamp during night) at a distance of 45m from the detonators. Attempts shall also be made to send an advice to nearest Railway station about the incident immediately.



- Action to be taken if train is seen approaching to site of danger and there is no time to protect the track as per guidelines mentioned above.**

In such a case the detonators shall be planted on rails immediately at distance away from place of danger as far as possible and attention of driver of approaching train shall be invited by whistling, waving the red flag vigorously, gesticulating and shouting.

- What action shall be taken if more than one track is obstructed.**

- In case of single line protection as above shall be done in both the directions from place of danger.
- In case of double line or multiple lines, if other tracks are also obstructed, the protection as above shall be done for other track also.
- The protection shall be done in that direction and on that track first on which train is likely to arrive first.
- The Contractor's Supervisors, Operators and lookout men shall be properly explained about the direction of trains on running tracks.

(iv) **Equipment required for protection of track.**

Minimum compliment of protection equipment i.e. 10 detonators, 4 red hand flags, 4 red hand lamps, 4 banner flags and whistles etc. shall always be kept ready at worksites for use in case of emergency. Railway will arrange to provide detonators, whereas Contractor shall arrange other equipment at his own cost.

(v) **Arrangement of lookout men and competency required for lookout man to warn labour about approaching train.**

- a. Contractor will provide lookout men.
- b. The lookout men shall be properly trained in warning to staff at worksite about approaching train.
- c. Only those lookout men shall be provided at site who have been issued with a competency certificate by the Railway's Supervisor.
- d. In case, it is felt necessary to provide lookout men by Railway, the charges for the same as fixed by Railway Administration shall be recovered from Contractor.

**1.19 Training to Supervisors and Operators of Contractor.**

The Supervisors and Operators of the contractor proposed to be deployed at work site, which is close to the running track, shall be imparted mandatory training by the Railway at site free of cost about the safety measures to be adopted while working in the vicinity of running track. Engineer of the work shall decide the scale, extent & adequacy of training. In case training is imparted at a recognized Railway training institute, the charges for the same, as decided by Railway, shall be recovered from contractor. A competency certificate to this effect to the individual Supervisor/Operator shall be issued as given below, by a Railway Officer not below the rank of Assistant Officer. No Supervisor/Operator of the Contractor shall work or allowed to work in the vicinity of running track that is not in possession of valid competency certificate.

**Competency Certificate**

Certified that Shri \_\_\_\_\_ Supervisor/Operator of M/s. \_\_\_\_\_ has been trained and examined in safety measures to be followed while working in the vicinity of running railway track for the work \_\_\_\_\_. His knowledge has been found satisfactory and he is capable of supervising the work safely.

This certificate is valid only for the work mentioned in this certificate only.

**Signature and designation of the officer**

**1.19 Cost of safety measures:**

All the labour, materials, tools, plants etc. except detonators, required for ensuring safe running of trains shall be provided by Contractor at his own cost. Wherever lookout men are provided by Railway, charges at the rate of Rs. 2000/-per man day shall be recovered from Contractor.

**2.0 Special Conditions for working of Road Cranes:**

To ensure safe working of road cranes used in works in connection with provision of ROB/RUB/Subways, following items shall invariable be ensured before putting the cranes to use :-

- i) No machine shall be selected to do any lifting on a specific job until its size and characteristics are considered against the weights, dimensions and lift radii of the heaviest and largest loads.
- ii) The contractor shall ensure that a valid Certificate of Fitness is available before use of Road Cranes.
- iii) Contractors should utilize the services of any competent person as defined in Factories Act, 1948 and approved by Chief Inspector of Factories.

- iv) The laminated photocopies of fitness certificate issued by competent persons, the operators' photo, manufacturer's load chart and competency certificate shall always be either kept in the operator cabin or pasted on the visible surface of the lifting appliances.
- v) All lifting appliances including all parts and gears thereof, whether fixed or movable shall be thoroughly tested and examined by a competent person once at least in every six months or after it has undergone any alterations or repairs liable to affect its strength or stability.

### **3.0 Dismantling Works:**

- (a) The dismantling of structure should be done under proper supervision and as per approved scheme of dismantling.
- (b) At major dismantling sites minimum level of supervision shall be Senior Sectional Engineer (In-charge), who should be nominated by Sr.DEN/C in writing.
- (c) The dismantling Plan should be scrutinised by the Drawing Office and approved by Sr. Divl. Engineer in case of Open Line Organisation. The dismantling equipments to be used for dismantling, area likely to be affected by debris, any adjacent likely to be affected and action to be taken thereof.
- (d) Proper barricading Plan should be done to stop access of unauthorized personnel near the dismantling area. Wherever necessary assistance of RPF should be taken to prevent people from coming closed to dismantling area. Signage warning people not to enter the danger zone should also be displayed.
- (e) Proper announcement through Public Address System should be done at intervals to keep the onlookers away from the major dismantling affected zone.
- (f) The adjacent buildings likely to be affected by dismantling should also be evacuated.
- (g) In area where law and order is likely to be affected, assistance of local Police should be taken to keep people away from dismantling area.

- 4.0** Contractor shall indemnify Railways against any loss/damage to public property, travelling public, railway or his own staff due to his (contractor's) negligence. In case there is any mishap, a fact finding inquiry will be conducted by Railway. A show cause notice will be issued to the contractor, in case he is prima-facie held responsible. Contractor's reply to show cause notice will be considered by the Engineer before taking final decision. In case contractor is found responsible for the mishap, recovery from him will be affected for only tangible direct losses.

### **5.0 Storage of Inflammable Articles:**

No inflammable materials, such as petroleum, oil etc. within the meaning of the Indian Petroleum Act and Indian Explosives Act shall be stored at site or adjacent land until the approval of the Railway and necessary licenses under the Acts have been obtained by the Contractor.





The background of the page features a large, faint watermark of the Indian Railways logo. It is a circular emblem with a blue border containing the text "INDIAN RAILWAYS" in English and "भारतीय रेल" in Hindi. Inside the circle, there is a central figure of a person in a uniform, possibly a railway official, standing on a platform with a train in the background.

# CHAPTER-III

## PRICE VARIATION & ARBITRATION

**Applicable as per Clause-46A of GCC-2022 (Part-II) updated with latest Advanced Correction Slip issued upto date of tender publication.**

**MAINTENANCE PERIOD**

- 2.1 On the completion of work to the satisfaction of the Engineer it will be taken over from the contractor from the date of taking over the contractor shall be responsible for the maintenance of all works for further period of 6 (Six) months but it must cover the period of one monsoon from 1st June to 30 November.
- 2.2 To cover up monsoon period, the maintenance period will be extended in cases when required and contractor shall remain responsible for maintenance for this extended period also. The contractor shall make good and remedy at his own expense within such period as may be stipulated by the Engineer, any defect which

may develop or may be before the expiry of this period of twelve months and intimation of which has been sent to contractor within seven days of the expiry of the said period by a letter, sent by hand delivery or by registered post. In case the contractor fails to make adequate arrangements to rectify the defects within seven days of the receipt of such notices, the Engineer without further notice may make his own arrangement to rectify the defects and the cost of such rectification shall be recovered from the Security Deposit of the contractor or from any other money due to the contractor under this or may other contract.

**3.0 CONTRACT LABOUR ACT**

- 3.1 The Contractor shall comply with the provision of the contract labour (Regulation and Abolition) Act, 1970 and the Contract labour (Regulation and Abolition) Central Rules 1971 as modified from time to time, wherever applicable and shall also indemnify the Railway from and against any claims under the aforesaid Act and the Rules.
- 3.2 The Contractor shall obtain a valid license under the aforesaid Act as modified from time to time before the commencement of the work and continue to have a valid license until the completion of the work. Any failure to fulfill the requirement shall attract the penal provision of the Act.
- 3.3 The Contractor shall pay to the labour employed by him directly or through subcontractors the wages as per provision of the aforesaid Act and the Rules wherever applicable. The Contractor shall notwithstanding the provisions of the contract to the contrary, cause to be paid the wages to labour, indirectly engaged on the works including any engaged by sub-contractors in connection with the said work, as if the labour had been immediately employed by him.
- 3.4 In respect of all labour directly or indirectly employed in the work for performance of the Contractor's part of the contract, the Contractor shall comply with or cause to be complied with the provisions of the aforesaid Act and Rules wherever applicable.
- 3.5 In every case in which, by virtue of the provisions of the aforesaid Act or the rules, the Railway is obliged to pay any amount of wages to a workman employed by the Contractor or his sub-contractor in execution of the work or to incur any expenditure on account of the contingent, liability of the Railway due to the Contractor's failure to fulfill his statutory obligations under the aforesaid Act or the rules, the Railway will recover from the Contractor, the amount of wages so paid or the amount of expenditure so incurred and without prejudice to the rights of the Railway under the Section 20, Sub-Section (2) and Section 2, Sub-Section (4) of the aforesaid Act, the Railway shall be at liberty to recover such amount or part thereof from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India. The Railway shall not be bound to contest any claim made against it under Sub-Section (1) of Section 20 and Sub-Section (4) of Section 21 of the

aforesaid Act except on the written request of the Contractor and upon his giving to the Railway full security for all costs for which the Railway might become liable in contesting such claim. The decision of the Chief Engineer regarding the amount actually recoverable from the Contractor as stated above shall be final and binding on the Contractor.

- 3.6 The attention of the tenderer is drawn to the Contract Labour (Regulation & Abolition) Act, 1970. Contract Labour (Regulation & Abolition) General Rules 1971 and Clause 55 (A) Standard General conditions of Contract. Successful tenderer(s) shall comply with the provisions of the said Act and Rules, the Executive Engineers/Dy. Chief Engineers being the principal employers under the said Act and Rules.
- 3.7 The attention of the tenderer is also drawn to the rules of the Inter State Migrant Workman (Regulation of employment conditions of service) Central rules 1980. The successful tenderers should comply with these rules as per the said Act/1979 (ACF NO. 30 of 1979) with central rules 1980.
- 3.8 Provided that if any dispute arises as to the expenditure incurred by the Railway in the provision of amenities under the said Act, the decision of the Engineer thereon shall be final and binding.
- 4.0 Provisions of “The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996” and “The Building and Other Construction Workers’ Welfare Cess Act, 1996”:  
The tenderers, for carrying out any construction work, shall get themselves registered with the Registering Officer under Section-7 of the Building and Other Construction Workers Act, 1996 and Rules made thereto by the concerned State Govt., and submit Certificate of Registration issued by Registering Officer of the concerned State Govt. (Labour Dept.). The Cess shall be deducted from contractor’s bills as per provisions of the Act.
- 5.0 ANTI-MALARIA PRECAUTIONS.
- 5.1 Every precaution shall be taken by the contractor to prevent the breeding of mosquitoes at the site of work during construction and all reacceptance used for the storage of water must be suitably protected for this purpose or must be emptied at the close of the work every day. As a precautionary measure against Malaria all water used for curing the concrete and masonry works must contain specified creosol in solution, which must not be less than 1:200 or more than 1:100 so that the solution will have markedly cloudy appearance and will give a reasonably strong odour.
- 5.2 As a precaution to any measure against Malaria the contractor will be responsible to take up anti-larval work at his own expense during the currency of the contract. In case of contractor’s failure to undertake the job, the expenditure incurred if any by the Railway on this account is recoverable from the defaulting contractor without any reference.
- 6.0 SETTLEMENT OF DISPUTES – INDIAN RAILWAY ARBITRATION RULES.
- 6.1 Arbitration and settlement of disputes shall be governed vide clause 63, 64 of Indian Railways Standard General Conditions of Contract-2022 edition which are reproduced below subject to any correction made prior to the opening of this tender.

7.0 Clause of GCC

Clause 26: Provision of efficient and competent staff at work sites by the contractor.

- 26.1 The Contractor shall place and keep on the works at all times efficient and competent staff to give the necessary directions to his workmen and to see that they execute their work in sound & proper manner and shall employ only such supervisors, workmen & labourers in or about the execution of any of these works as are careful and skilled in the various trades.
- 26.2 The Contractor shall at once remove from the works any agents, permitted sub- contractor, supervisor, workman or labourer who shall be objected to by the Engineer and if and whenever required by the Engineer, he shall submit a correct return showing the names of all staff and workmen employed by him.

26.3 In the event of the Engineer being of the opinion that the Contractor is not employing on the works a sufficient number of staff and workmen as is necessary for proper completion of the works within the time prescribed, the Contractor shall forthwith on receiving intimation to this effect deploy the additional number of staff and labour as specified by the Engineer within seven days of being so required and failure on the part of the Contractor to comply with such instructions will entitle the Railway to rescind the contract under Clause 62 of GCC-2022.

**26A. Deployment of Qualified Engineers at Work Sites by the Contractor:**

26A.1 The Contractor shall also employ qualified Graduate Engineer(s) or equivalent or qualified Diploma Engineer(s), as prescribed in the tender documents.

26A.2 In case the Contractor fails to employ the Engineer, as aforesaid in Para 26A.1, he shall be liable to pay liquidated damages at the rates, as prescribed in the tender documents.

26A.3 No. of qualified Engineers required to be deployed by the Contractor for various activities contained in the works contract shall be specified in the tender documents as 'Special Condition of Contract' by the tender inviting authority."

7.1 In terms of provisions of Clause 26A.1 to the General Conditions of Contract (GCC), contractor shall also employ following Qualified Engineers during execution of the allotted work:

(a) One Qualified Graduate Engineer when cost of work to be executed is Rs. 200 lakh and above, and

(b) One Qualified Diploma Holder Engineer when cost of work to be executed is more than Rs. 25 lakh, but less than Rs. 200 lakh.

7.2 Further, in case the contractor fails to employ the Qualified Engineer, as aforesaid in Para 7 above, he, in terms of provisions of Clause 26A.2 to the General Conditions of Contract, shall be liable to pay an amount of Rs.40,000 and Rs.25,000 for each month or part thereof for the default period for the provisions, as contained in Par 7(a) and 7(b) above respectively.

(a) Should a tenderer

- i) be a retired Engineer of the gazetted rank or any other gazetted officer working before his retirement, whether in the executive or administrative capacity or whether holding a pensionable post or not, in the Engineering or any other department of any of the railways owned and administered by the President of India for the time being, OR
- ii) being partnership firm / joint venture (JV) / registered society / registered trust etc have as one of its partners/members a retired Engineer of the gazetted rank or any other gazetted officer working before his retirement, OR
- iii) being an incorporated company have any such retired Engineer of the gazetted rank or any other gazetted officer working before his retirement as one of its directors

AND

in case where such Engineer or officer had not retired from government service at least 1 year prior to the date of submission of the tender

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the tenderer will give full information as to the date of retirement of such Engineer or gazetted officer from the said service and as to whether permission for taking such contract, or if the Contractor be a partnership firm or an incorporated company, to become a partner or director as the case may be, has been obtained by the tenderer or the Engineer or officer, as the case may be from the President of India or any officer, duly authorized by him in this behalf, shall be clearly stated in writing at the time of submitting the tender.

- b) In case, upon successful award of contract, should a tenderer depute for execution of the works under or to deal matters related with this contract, any retired Engineer of gazetted rank or retired gazetted officer working before his retirement in the Engineering or any other department of any of the railways owned and administered by the President of India for the time being, and now in his employment, then the tenderer will ensure that retired Engineer or retired gazetted officer had retired from government service at least 1 year prior to the date of his employment with tenderer and in case he had retired from service within a year then he possesses the requisite permission from the President of India or any officer, duly authorized by him in this behalf, to get associated with the tenderer.
- c) Should a tenderer or Contractor being an individual, have member(s) of his family or in the case of partnership firm/ company / joint venture (JV) / registered society / registered trust etc. one or more of his partner(s)/shareholder(s) or member(s) of the family of partner(s)/shareholder(s) having share of more than 1% in the tendering entity employed in gazetted capacity in the Engineering or any other department of the railway, then the tenderer at the time of submission of tender, will inform the authority inviting tenders the details of such persons.

Note:-If information as required as per 16.a), b), c) above has not been furnished, contract is liable to be dealt in accordance with provision of clause 62 of Standard General Condition of contract, 2022.

7.4 Clause 59.(9): **Restrictions on the Employment of Retired Engineers of Railway Services Within One Year of their Retirement:** The Contractor shall not, if he is a retired Government Engineer of Gazetted rank, himself engage in or employ or associate a retired Government Engineer of Gazetted rank, who has not completed one year from the date of retirement, in connection with this contract in any manner whatsoever without obtaining prior permission of the President and if the Contractor is found to have contravened this provision it will constitute a breach of contract and administration will be entitled to terminate the contract and forfeit his Performance Guarantee as well as Security Deposit.

#### 8.0. Clause-52– **Withholding and Lien in Respect of Sums Claimed:**

Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the Contractor, the Railway shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the Contractor and for the purpose aforesaid, the Railway shall be entitled to withhold the said cash Security Deposit or the Security if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the Contractor, the Railway shall be entitled to withhold and have a lien to the extent of the such claimed amount or amounts referred to supra, from any sum or sums found payable or which at any time thereafter may become payable to the Contractor under the same contract or any other contract with this or any other Railway or any Department of the Central Government pending finalization or adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above, by the Railway will be kept withheld or retained as such by the Railways till the claim arising out of or under the contract is determined by the arbitrator (if the contract



governed by the Arbitration Clause) or by the competent court as the case may be and that the Contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to supra and duly notified as such to the Contractor. For the purpose of this clause, where the Contractor is a partnership firm or a company, the Railway shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner / company, as the case may be whether in his individual capacity or otherwise.

#### **8.1 Clause 52-A Lien in Respect Of Claims in Other Contract:**

- (i) Any sum of money due and payable to the Contractor (including the Security Deposit returnable to him) under the contract may be withheld or retained by way of lien by the Railway, against any claim of this or any other Railway or any other Department of the Central Government in respect of payment of a sum of money arising out of or under any other contract made by the Contractor with this or any other Department of the Central Government.
- (ii) However, recovery of claims of Railway in regard to terminated contracts may be made from the Final Bills, Security Deposits and Performance Guarantees of other contract or contracts, executed by the Contractor. The Performance Guarantees submitted by the Contractor against other contracts, if required, may be withheld and encashed. In addition, 10% of each subsequent 'on-account bill' may be withheld, if required, for recovery of Railway's dues against the terminated contract.
- (iii) It is an agreed term of the contract that the sum of money so withheld or retained under this Clause by the Railway will be kept withheld or retained as such by the Railway till the claim arising out of or under any other contract is either mutually settled or determined by arbitration, if the other contract is governed by Arbitration Clause or by the competent court as the case may be and Contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this Clause and duly notified as such to the Contractor.

**9.1. Clause 63.1 Matters finally determined by the Railway** – All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during the progress of the work or after its completion and whether before or after the determination of the contract, shall be referred by the Contractor to the GM and the GM shall, within 120 days after receipt of the Contractor's representation, make and notify decisions on all matters referred to by the Contractor in writing provided that matters for which provision has been made in Clauses 7(j) 8, 18, 22(5), 39.1, 39.2, 40A, 43(2), 45(i)(a), 55, 55-A(5), 57, 57A, 61(1), 61(2), 62(1) ), 63(iv) and 63.2.11 of Standard General Conditions of Contract or in any Clause of the Special Conditions of the Contract shall be deemed as 'excepted matters' (matters not arbitrable) and decisions of the Railway authority, thereon shall be final and binding on the Contractor; provided further that 'excepted matters' shall stand specifically excluded from the purview of the Dispute Adjudication Board (DAB) and Arbitration.

**9.2. Clause 63.2 Dispute Adjudication Board (DAB):** This clause is applicable in the tender having advertised value more than Rs 50 Crore.

63.2.1 Any dispute/s if not settled with the Engineer, shall be referred to DAB.

The DAB shall consist of a panel of three Retired Railway Officers, retired not below senior administrative grade (SAG). The DAB shall be formed within 90 days of signing of Contract Agreement. For this purpose, a panel of DAB members shall be maintained in the General Manager's office. The complete panel, which shall not be less than five members, shall be sent by Chief Engineer to the Contractor to nominate one member of the DAB from the panel as Contractor's nominee within two weeks of receipt of the panel. On receipt of Contractor's nominee, the Chief Engineer shall nominate one member from the same panel as Railway nominee for the DAB. Both above nominees shall jointly select presiding member of the DAB from the same panel.

63.2.2 The appointment of DAB shall be effectuated by way of a tri-partite agreement among the Railway, Contractor and the respective DAB members. The terms of the remuneration of each member shall be as fixed by Ministry of Railways from time to time. Each party shall be responsible for paying one-half of this remuneration.

63.2.3 If one or more of the members appointed refuses to act as DAB member, or is unable or unwilling to perform his functions as DAB member for any reason whatsoever or dies or in the opinion of the Chief Engineer fails to act without undue delay, the parties shall terminate the mandate of such DAB member and thereupon new DAB member shall be appointed in the same manner, as the outgoing DAB member had been appointed.

63.2.4 The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Railway or the Contractor acting alone. Unless otherwise agreed by both the Parties, the appointment of the DAB (including each member) shall expire upon expiry of this Contract Agreement.

63.2.5 Before start of DAB proceedings, each DAB member shall give the following certificate to the Railway and the Contractor:

"I have no any past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind. Further, I have no any past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality."

63.2.6 DAB proceedings shall be conducted as decided by the DAB. The DAB shall give its decision within 90 days of a Dispute referred to it by any of the Parties, duly recording the reasons before arriving at the decision. The DAB shall decide the issue within terms and conditions of the contract. This time limit shall be extendable subject to the Parties mutual agreement.

63.2.7 The DAB decision shall not be binding on both the Parties. In case any party is not satisfied by the decision of DAB, then the aggrieved party may approach Arbitral Tribunal for arbitration proceedings.

63.2.8 No dispute shall be referred to Arbitral Tribunal unless the same has been referred to DAB for adjudication. However, in case DAB is not formed due to any reason, the disputes can be directly referred to Arbitral Tribunal to adjudicate the dispute.

63.2.9 In the specific cases of any misconduct by any of the members of the DAB, the parties shall have the right to specifically bring it to the notice of the DAB such conduct, through a statement filed with necessary documents in proof of such misconduct and the DAB, after taking NOTICE of such conduct initiate the replacement of the member concerned, in the same manner the member to be replaced was appointed.

63.2.10 Once the decision is given by DAB, DAB cannot review the decision at its own or on the request of one party, unless both parties agree for review of decision by DAB.

63.2.11 In case DAB decision is not challenged by either party within 180 days of receipt of decision of DAB, the decision shall be considered as final and parties would be barred for referring the same to Arbitral Tribunal for adjudication.

63.2.12 The obligation of the Railway and the Contactor shall not be altered by reasons of issue being or under reference to DAB.

63.2.13 The DAB shall conduct the proceedings at any convenient venue which shall be decided by DAB in consultations with parties.

63.2.14 It is a term of this contract that the Parties shall not approach any Court of Law for settlement of such disputes or differences unless an attempt has first been made by the parties to settle such disputes or differences through DAB and Arbitral Tribunal.

**10.1. Clause 64(1)      Demand for Arbitration:**

- 64(1)(i)(a) In the event of any dispute or difference between the parties hereto as to the construction or operation of this contract, or the respective rights and liabilities of the parties on any matter in question, dispute or difference on any account or as to the withholding by the Railway of any certificate to which the Contractor may claim to be entitled to, or if the Railway fails to make a decision within 120 days, then and in any such case, but except in any of the "excepted matters" referred to in Clause 63.1 of these Conditions, the Contractor, after 120 days but within 180 days of his presenting his final claim on disputed matters shall demand in writing that the dispute or difference be referred to arbitration.
- 64(1)(i)(b) Arbitration as a method of dispute resolution should not be routinely or automatically included in procurement contacts/tenders, especially in large contracts.
- 64(1)(i)(c) As a norm, arbitration as a method of dispute resolution may be restricted to disputes with a value less than Rs. 10 crore. This figure is with reference to the value of the dispute (not the value of the contract, which may be much higher).
- 64(1)(i)(d) Inclusion of arbitration clauses covering disputes with a value exceeding Rs. 10 crore, should be based on careful application of mind and recording of reasons and with the approval of an officer not below the rank of Senior Administrative Grade (SAG) or the Accepting Authority of the tender whichever is higher.
- 64(1)(ii)(a) The demand for arbitration shall specify the matters which are in question, or subject of the dispute or difference as also the amount of claim item-wise. Only such dispute or difference, in respect of which the demand has been made, together with counter claims or set off, given by the Railway, shall be referred to arbitration and other matters shall not be included in the reference.
- 64(1)(ii)(b) The parties may waive off the applicability of sub-section 12(5) of Arbitration and Conciliation (Amendment) Act 2015, if they agree for such waiver, in writing, after dispute having arisen between them, in the format given under Annexure XV of Standard General Conditions of contract, 2022.

- 64(1)(iii)(a) The Arbitration proceedings shall be assumed to have commenced from the day, a written and valid demand for arbitration is received by the Railway.
- 64(1)(iii)(b) The claimant shall submit his claim stating the facts supporting the claims along with all the relevant documents and the relief or remedy sought against each claim within a period of 30 days from the date of appointment of the Arbitral Tribunal.
- 64(1)(iii)(c) The Railway shall submit its defense statement and counter claim(s), if any, within a period of 60 days of receipt of copy of claims from Tribunal, unless otherwise extension has been granted by Tribunal.
- 64(1)(iii)(d) Place of Arbitration: The place of arbitration would be within the geographical limits of the Division of the Railway where the cause of action arose or the Headquarters of the concerned Railway or any other place with the written consent of both the parties.
- 64(1)(iv) No new claim shall be added during proceedings by either party. However, a party may amend or supplement the original claim or defense thereof during the course of arbitration proceedings subject to acceptance by Tribunal having due regard to the delay in making it.
- 64(1)(v) If the Contractor(s) does/do not prefer his/their specific and final claims in writing, within a period of 90 days of receiving the intimation from the Railways that the final bill is ready for payment, he/they will be deemed to have waived his/their claim(s) and the Railway shall be discharged and released of all liabilities under the contract in respect of these claims.

**10.2. Clause 64(2) Obligation during pendency of Arbitration:**

Work under the contract shall, unless otherwise directed by the Engineer, continue during the arbitration proceedings, and no payment due or payable by the Railway shall be withheld on account of such proceedings, provided, however, it shall be open for Arbitral Tribunal to consider and decide whether or not such work should continue during arbitration proceedings.

**10.3. 64.(3) : Appointment of Arbitrator:**

- 64.(3)(a) : The Arbitral Tribunal shall consist of a panel of three arbitrators. General Manager/Additional General Manager will appoint two arbitrators, one railway nominee and other from among the contractor's nominee. Contractor can recommend his nominee either from approved panel of Railways or from approved panel of Indian Council of Arbitration (ICA) within 30 days from the date of dispatch of approval of written and valid acceptance of demand for arbitration by the General Manager/Additional General Manager.
- 64.(3)(a)(i): If contractor wants to choose his nominee from Railway panel, the Railway will send a panel of at least four (4) names of retired Railway Officers empanelled to work as Arbitrator within 30 days from the day when a written and valid demand for arbitration is received by the General Manager/Additional General Manager. Contractor will be asked to suggest to General Manager/Additional General Manager at least 2 names out of the panel for appointment as Contractor's nominee within 30 days from the date of dispatch of the request by Railway. The General Manager/Additional General Manager shall appoint at least one out of them as the Contractor's nominee within 30 days from the receipt of the names of Contractor's nominees. The railway panel shall be provided free of cost to the contractor.



- 64.(3)(a)(ii): If contractor wants to choose his nominee from Indian Council of Arbitration panel, Contractor will send at least 2 names of Arbitrators from the ICA panel for appointment as Contactor's nominee within 30 days from the date of dispatch of the request by Railway. The General Manager/Additional General Manager shall appoint at least one out of them as the Contactor's nominee within 30 days from the receipt of the names of Contractor's nominees. Nomination and appointment of arbitrators from ICA panel shall be as per the ICA Rules for Domestic Commercial Arbitration and amended from time to time.

Some general guidelines of ICA Rules for Domestic Commercial Arbitration are as under :-

i. Contractor may access the ICA's panel of arbitration through ICA's official webpage: <https://icaindia.co.in/pdf/Engineers.pdf>.

ii. A formal request for nomination shall be submitted to ICA, accompanied by :-

- a. A brief Statement of Claim outlining the nature and quantum of the disputes.
- b. A copy of the relevant contract and any supporting documents.
- c. A copy of the notice intimating the other party of the initiation of arbitration proceedings, with proof of delivery (if any).

iii. Ad-hoc appointment fees for the nomination and appointment of arbitrators shall be as per the ICA Rules for Domestic Commercial Arbitration and revised from time to time and shall be submitted along with the request.

- 64.3.(a).iii: The serving railway officer working in arbitral tribunal in the ongoing arbitration cases as per clause 64.(3)(a)(i) and clause 64.(3)(a)(ii) above, can continue as arbitrator in the tribunal even after his retirement.

- 64.(3)(b): Two selected arbitrators are free to select presiding arbitrator (3rd arbitrator) within thirty (30) days from the date of their appointment. The presiding arbitrator may be selected from approved panel of Railways or approved panel of Indian Council of Arbitration (as per mutual agreement), which will be approved by General Manager/ Additional General Manager. General Manager/Additional General Manager shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of all the three arbitrators.

- 64.(3)(c)(i): If one or more of the arbitrators appointed as above refuses to act as arbitrator, withdraws from his office as arbitrator, or vacates his/their office/offices or is/are unable or unwilling to perform his functions as arbitrator for any reason whatsoever or dies or in the opinion of the General Manager/Additional General Manager fails to act without undue delay, the General Manager/Additional General Manager shall appoint new arbitrator/arbitrators to act in his/their place in the same manner in which the earlier arbitrator/arbitrators had been appointed. Such re-constituted Tribunal may, at its discretion, proceed with the reference from the stage at which it was left by the previous arbitrator (s).

- 64.(3)(c)(ii): (a) The Arbitral Tribunal shall have power to call for such evidence by way of affidavits or otherwise as the Arbitral Tribunal shall think proper, and it shall be the duty of the parties hereto to do or cause to be done all such things as may be necessary to enable the Arbitral Tribunal to make the award without any delay. The proceedings shall normally be conducted on the basis of documents and written statements.

(b) Before proceeding into the merits of any dispute, the Arbitral Tribunal shall first decide and pass its orders over any plea submitted/objections raised by any party, if any, regarding appointment of Arbitral Tribunal, validity of arbitration agreement, jurisdiction and scope of the Tribunal to deal with the dispute (s) submitted to arbitration, applicability of time 'limitation' to any dispute, any violation of agreed procedure regarding conduct of the arbitral proceedings or plea for interim measures of protection and record its orders in day to day proceedings. A copy of the proceedings duly signed by all the members of tribunal should be provided to both the parties.

- 64.3(c)(iii): (i) Qualification of Railway Empanelled Arbitrator (s):
- (a) Retired Railway Officers not below SA Grade level, one year after his date of retirement.
  - (b) Age of arbitrator at the time of appointment shall be below 70 years.
  - (c) Persons not involved in any current vigilance/CBI cases or against whom disciplinary or prosecution proceedings are not in process.
  - (d) Persons who had not been imposed a major penalty or two or more minor penalties or against whom administrative action has not been taken three times or more or
  - (e) Persons who have not been imposed one minor Penalty and against whom two administrative actions have not been taken as a result of vigilance/CBI action while in service on Railways.
- (ii) An arbitrator may be appointed notwithstanding the total number of arbitration cases in which he has been appointed in the past.
- (iii) While appointing arbitrator(s) under Sub-Clause 64.(3)(a), 64.(3)(a)(i), 64.(3)(a)(ii) & 64.(3)(b) above, due care shall be taken that he/they is/are not the one/those who had an opportunity to deal with the matters to which the contract relates or who in the course of his/their duties as Railway servant(s) expressed views on all or any of the matters under dispute or differences. A certification to this effect as per annexure- XVI shall be taken from Arbitrators also. The proceedings of the Arbitral tribunal or the award made by such Tribunal will, however, not be invalid merely for the reason that one or more arbitrator had, in the course of his service, opportunity to deal with the matters to which the contract relates or who in the course of his/their duties expressed views on all or any of the matters under dispute.
- 64.(3)(d)(i): The arbitral award shall state item wise, the sum and reasons upon which it is based. The analysis and reasons shall be detailed enough so that the award could be inferred there from.
- 64.(3)(d)(ii): A party may apply for corrections of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award of a Tribunal and interpretation of a specific point of award to Tribunal within 60 days of receipt of the award
- 64.(3)(d)(iii): A party may apply to Tribunal within 60 days of receipt of award to make an additional award as to claims presented in the arbitral proceedings but omitted from the arbitral award.
- 10.4. 64.(4):** Any ruling on award shall be made by a majority of members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.
- 10.5. 64.(5):** Where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period till the date on which the award is made.
- 10.6. 64. (6):** The cost of arbitration shall be borne by the respective parties. If all the three arbitrators are selected from the Railway Panel, the fee of the arbitrators shall be determined as per the rates fixed/revised by Railway Board from time to time and the fee shall be borne equally by both the parties, provided parties sign an agreement in the format given at Annexure XV to these conditions after/ while referring these disputes to Arbitration. However, if any of the three arbitrators is selected from the Panel of Indian Council of Arbitration (ICA), the fee of the arbitrators shall be determined as per the rates fixed/revised by the Indian Council of Arbitration from time to time and the fee shall be borne equally by both the parties, provided parties sign an agreement in the format given at Annexure XV to these conditions after/ while referring these disputes to Arbitration.



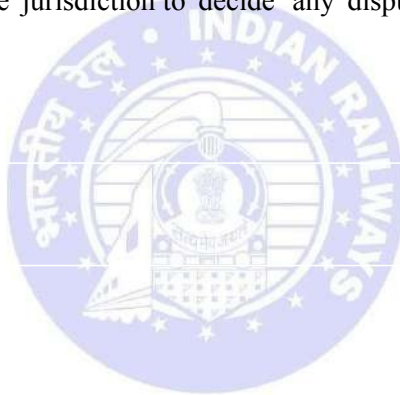
- 10.8. 64.(7) Subject to the provisions of the aforesaid Arbitration and Conciliation Act 1996 and the rules there under and relevant para of the Standard General Conditions of Contract (GCC) and any statutory modifications thereof shall apply to the appointment of arbitrators and arbitration proceedings under this Clause.
- 10.8. 64.(8) In case arbitration award is challenged by a party in the Court of Law, 75% of award amount, pending adjudication by Court of Law, shall be made by party to other party. In case payment is to be made by Railway to Contractor, the terms & conditions as incorporated in the Ministry of Railways letter No. 2016/CE(I)/CT/ARB/3(NITI Aayog)/Pt. dated 08th Mar,2017 as amended from time to time, shall be followed. In case Contractor has to pay to the Railway, then 75% of the award amount shall be deducted by the Railway from the Contractor's bills, Performance Guarantee/ Security Deposit or any other dues of Contractor with the Government of India.

11.0 LAWSGOVERNING THECONTRACT

This contract shall be governed by the Laws of India for the time being in force. Irrespective of place of working, the place of performance or place of payment under the contract, the contract shall be deemed to have been made at the place from which the acceptance of the tender has been issued.

12.0 JURISDICTIONOFCOURT.

- 12.1 The courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of the contract.



The logo of the Indian Railways is a circular emblem. It features a central shield with a steam locomotive and a train. The shield is flanked by two stars. The text "INDIAN RAILWAYS" is written in a semi-circle at the top, and "भारतीय रेल" (Bharatiya Rail) is written in Devanagari script at the bottom. The entire emblem is surrounded by a border of stars.

## CHAPTER –IV

### Employees' Provident Fund

## CHAPTER – IV

### 1.0 Employees' Provident Fund:

Clause 55-B to GCC: Provisions of Employees Provident Fund and Miscellaneous Provisions Act, 1952.

The Contractor shall comply with the provisions of Para 30 and 36-B of the Employees Provident Fund Scheme, 1952; Para 3 and 4 of Employees' Pension Scheme, 1995; and Para 7 and 8 of Employees Deposit Linked Insurance Scheme, 1976; as modified from time to time through enactment of Employees Provident Fund & Miscellaneous provisions Act. 1952 wherever applicable and shall also indemnify the Railway from and against any claims under the aforesaid Act and the Rules”.

### 2.0 Employees' Provident Fund Scheme, 1952:

#### 30. Payment of Contributions:

- (i) The employer shall, in the first instance, pay both the contribution payable by himself (in this Scheme referred to as the employer's contribution) and also, on behalf of the member employed by him directly or by or through a contractor the contribution payable by such member (in this Scheme referred to as the member's contribution).
- (ii) In respect of employees employed by or through a contractor, the contractor shall recover the contribution payable by such employee (in this Scheme referred to as the member's contribution) and shall pay to the principal employer the amount of member's contribution so deducted together with an equal amount of contribution (in this Scheme referred to as the employer's contribution) and also administrative charges.
- (iii) It shall be the responsibility of the principal employer to pay both the contribution payable by himself in respect of the employees directly employed by him and also in respect of the employees employed by or through a contractor and also administrative charges.

{Explanation : For the purposes of this paragraph, the expression “ administrative charges” means such percentage of the pay (basic wages, dearness allowance, retaining allowance, if any, and cash value of flood concessions admissible thereon) for the time being payable to the employees other than an excluded employee, and in respect of which Provident Fund Contribution are payable as the Central Government may, in consultation with the Central Board and having regard to the resources of the Fund for meeting its normal administrative expenses fix.}

### 3.0 36-B: Duties of Contractors:

Every contractor shall, within seven days of the close of every month, submit to the principal employer a statement showing the recoveries of contributions in respect of employees employed by or through him and shall also furnish to him such information as the principal employer is required to furnish under the provisions of the Scheme to the Commissioner.

#### Employees' Pension Scheme, 1995:

- Para 3(1) : From and out of the contributions payable by the employer in each month under Section 6 of the “Act” or under the rules of the Provident Fund of the establishment which is exempted either under clauses (a) and (b) of sub-section (1) of Section 17 of the Act or whose employees are exempted under either paragraph 27 or paragraph 27-A of the Employees' Provident Fund Scheme, 1952, a part of contribution representing 8.33 per cent of the Employee's pay shall be remitted by the employer to the Employees' Pension fund within 15 days of the close of every month by separate bank draft or cheque on account of the Employees' Pension Fund contribution in such manner as may be specified in this behalf by the Commissioner. The cost of the remittance, if any, shall be borne by the employer.

Para 3(2): The Central Government shall also contribute at the rate of 1.16 per cent of the pay of the members of the Employees' Pension Scheme and credit the contribution to the Employees' Pension Fund:

Provident that where the pay of the member exceeds Rs. 6,500 (Rupees Six thousand and five hundred) per month, the contribution payable by the employer and the Central Government be limited to the amount payable on his pay of Rs.6,500 (Rupees Six thousand and five hundred) only.

**4.0 Para 4: Payment of Contribution :**

- (1) The employer shall pay the contribution payable to the Employees' Pension Fund in respect of each member employed by him directly or by or through a contractor.
- (2) It shall be the responsibility of the principal employer to pay the contributions payable to the Employees' Pension Fund by himself in respect of the employees directly employed by him and also in respect of the employees employed by or through a contractor.

**5.0. Employees' Deposit Linked Insurance Scheme, 1976:**

**5.1 Para 7: Contribution :**

- (1) The contribution payable by the employer and the Central Government under sub-section (2) and sub-section (3) of Section 6-C of the Act, shall be calculated on the basis of the basic wages dearness allowance (including the cash value of any food concession) and retaining allowance, if any, actually drawn during the whole month whether paid on daily, weekly, fortnightly or monthly basis.
- (2) Provided that where the monthly pay of an employee exceeds six thousand five hundred rupees, the contribution payable in respect of him by the employer and the Central Government shall be limited to the amounts payable on a monthly pay of six thousand five hundred rupees including dearness allowance, retaining allowance (if any) and cash value of food concession.

**5.2 Para 8: Mode of Payment of Contribution :**

- (1) The contribution by the employer shall be remitted by him together with administrative charges at such rate as the Central Government may fix from time to time under sub-section 4 of Section 6-C of the Act, to the Insurance Fund within fifteen days of the close of every month by a separate bank draft or cheque or by remittance in cash in such manner as may be specified in this behalf by the Commissioner. The cost of remittance, if any, shall be borne by the employer.
- (2) It shall be the responsibility of the employer to pay the contribution payable by himself in respect of the employees directly employed by him and also in respect of the employees employed by or through a contractor.

Clause of GCC-2022.

**6.0. Clause-55-C(i)** Contractor is to abide by the provisions of various labour laws in terms of above clause 54, 55, 55-A and 55-B of Indian Railways Standard General Conditions of Contract. In order to ensure the same, an application has been developed and hosted on website 'www.shramikkalyan.indianrailways.gov.in'. Contractor shall register his firm/company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation in Portal shall be done as under:

- a) Contractor shall apply for onetime registration of his company/firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of Letter of Acceptance. Engineer shall approve the contractor's registration in the portal within 7 days of receipt of such request.
- b) Contractor once approved by any Engineer, can create password with login ID (PAN No.) for subsequent use of portal for all Letter of Acceptances (LoAs) issued in his favour.
- c) The contractor once registered on the portal, shall provide details of his Letter of Acceptances (LoA) / Contract Agreements on shramik kalyan portal within 15 days of issue of any LoA for approval of concerned Engineer. Engineer shall update (if required) and approve the details of LoA filled by contractor within 7 days of receipt of such request.
- d) After approval of LoA by Engineer, contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on shramikkalyan portal on monthly basis.
- e) It shall be mandatory upon the contractor to ensure correct and prompt uploading of all salient details of engaged contractual labour & payments made thereof after each wage period.

**7.0. Clause-55-C(ii)** While processing payment of any 'On Account bill' or 'Final bill' or release of 'Advances' or 'Performance Guarantee / Security deposit', contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at 'www.shramikkalyan.indianrailways.gov.in' till Month, Year."



# CHAPTER-V

## Special Specification(General)

### NORTHEAST FRONTIER RAILWAY (CONSTRUCTION ORGANISATION) SPECIAL SPECIFICATION

#### 1. GENERAL

- 1.1 These specifications shall apply to all such works as are required to be executed under the contract or otherwise directed by the Engineer. In every case the work shall be carried out to the satisfaction of the Engineer and shall conform to grades and cross sections shown on the drawings or as indicated by the Engineer. The quality of the work and materials shall comply with the requirements set forth in the succeeding sections. Where the drawings and specifications describe of portion of the work only general terms and not in complete details, it shall be understood that only the best general practice is to prevail. Materials and workmanship of the best quality are to be employed and that the instructions of the Engineer are to be fully complied with and shall be binding on the contractor. The contractor shall be fully responsible to ensure that the finished works are free from any defects, weakness, cracks etc.

#### 1.2 CODES OF PRACTICE AND SPECIFICATIONS :

- 1.2.1 The abbreviations mentioned elsewhere for standard specifications and code of practices shall be considered to have the following meaning.

IS: Indian Standard of the Indian Standards Institution.

IRS: Indian Railway Standard Specifications and Code of Practices.

GCC: Indian Railways Standard General Condition of contract-2022.

Indian Railway Unified Standard Specification 2021 edition.

IRC: Indian Roads Congress.

RDSO: Research, Designs and Standards Organisations (Ministry of Railways).

- 1.2.2 Wherever a reference is made to any of the standard specifications and code of practice it shall be taken as a reference to the latest versions/revision of the same and shall include all the ERRATA/corrections made in the same from time to time.

#### 1.3 MEASUREMENTS

- 1.3.1 All measurements shall be made in the metric system. Different items of works shall be measured in accordance with the procedures set forth in the relevant sections read in conjunction with G.C.C. and special conditions of the contract.

- 1.3.2 All measurements and computations, unless otherwise indicated shall be carried nearest to the following limits.

- |  |           |
|--|-----------|
| i) Length and breadth                                  | 10 mm     |
| ii) Height, depth or thickness of earthwork, C.C. work | 5 mm      |
| iii) Area  | 0.01 Sqm. |
| iv) Cubic contents                                     | 0.01 Cum. |

- 1.4 Site clearance wherever involved shall be undertaken and the same shall be considered incidental to the earthwork items and rates for the same shall be deemed to be inclusive of all clearing operations.

- 1.5 Specifications not specified in the tender documents for this work, shall be in accordance with Indian Railway Unified Standard Specification 2021/CPWD Specification (Vol. I & Vol. II) edition corrected up-to-date and the contractor shall be bound by them for the performance of the contract.



2.0 EARTHWORK

- 2.1 The changes mentioned in the tender documents are field changes are meant guidance only. For the purpose of payment, actual lengths will be measured on ground.
- 2.2 It shall be the responsibility of contractor to ensure that no work on the embankment or cutting is commenced until the existing ground levels at different cross sections have been recorded and such records of levels have been jointly signed and dated by the contractor and the Engineer or his authorized representative. Cross-sectional profiles plotted on the basis of the recorded ground levels shall also be jointly signed by the contractor(s) and the Engineer. The points at which the cross sectional ground levels are to be recorded and the extent of levelling work to be done shall be decided by the Engineer. The contractor may bring to the notice of the Engineer such additional cross-sections that in his opinion should be taken for proper assessment of quantities. Such representation, however, should be made before the commencement of any earthwork. The Engineer's decision thereon shall, however, be final and binding on the contractor.
- 2.2.1 Contractor shall sign every page of the level book and cross section sheets where original ground and final level of completed work are recorded in token of his acceptance of these levels and cross sections for the purpose of computation of quantities of payments. No dispute whatsoever shall be entertained on this account.
- 2.3 Contractor shall clear all shrubs and jungles on the existing ground up to a distance of 3m from the proposed toe of the embankments. All tree stumps will have to be uprooted from the area to be covered by the embankment will not be paid for separately and the rate of earthwork includes such uprooting of tree stumps.
- 2.3.1 No extra payment will be admissible for filling up the hollows left after uprooting of tree stumps in the area covered by the embankment. Initial ground levels as represented by the cross sections taken before commencement of work will not be deemed to be vitiated, and will hold good for the assessment of the earthwork quantities, even though there may be some loss of earth in marshy/bed area due to shrinkage.
- 2.4 Benching has to be done on the existing banks where embankment is to be formed. No extra payment for benching in either case will be admissible.
- 2.5 The type of soil to be used in the embankment which will be brought from outside the railway land will be got approved from the Engineer in advance. Organic clay, silts, peat and shrinkable soils of low bearing capacity shall not be used for making the embankment.
- 2.6 Contractor should set out the work according to the plan and as directed by the Engineer or his representative. Reference pegs are to be made permanent and kept clear of all obstructions. He should obtain the approval in writing from the Engineer, for the correctness of the setting out and the reference marks, before commencing the actual execution of the works.
- 2.6.1 All over 12.5 m along the proposed embankment, profiles shall be erected to enable smooth execution of the earthwork in layers. No extra payment will be admissible for this.
- 2.7 While carrying out the filling work the contractor will take all necessary precautions to see that no infringement is caused, with signalling and other installations and structures for the smooth movement of traffic along the Railway track in and outside station limits. In course of doing work if infringements are likely to arise he shall intimate the Engineer in advance of his/their programme in writing so that necessary arrangements can be provided for carrying out such items.

- 2.8 The side slopes will be as designs and drawings approved by the Engineer.
- 2.8.1 If any blasting operations are necessary, they are to be carried out in accordance with the provisions under Standard Special Conditions for blasting and explosive as contained in General Conditions of Contracts, and Indian Railway Unified Standard Specification 2021 edition with up-to date corrections.
- 2.9 No extra payment towards cost of bailing or pumping out water from borrow pits or cutting or foundations excavation will be made. In case the embankment is to be made for such work, it should be clearly understood that the rates quoted are inclusive of all charges for such items incidental to earth work.
- 2.9.1 SPECIFICATIONS FOR FORMING EMBANKMENT WITH MECHANICAL COMPACTION.
- 2.9.2 After site clearance all pockets and depressions left in the soil, if any, shall be made and compacted.
- 2.9.3 Earthwork shall be done in layers not exceeding 300 mm in thickness in the loose state, and compacted preferably at or near the optimum Moisture Content (OMC) with suitable rollers to obtain the density specified in para 2.11.3(a) & 2.11.3(b). The number of passes of the rollers and the optimum thickness of such layer will be fixed after carrying out field trials with the roller proposed to be used, from time to time, and from location to location, the main criteria being to obtain the maximum density achievable uniformly.
- 2.10.1 (a) Coarse grained soils shall be compacted to get a maximum density Index (relative density) of 70% as obtained in accordance with IS: 2720 (Pt.XIV-1983).
- 2.10.2(b) All other types of soils when compacted shall attain at least 98% of the Maximum Dry Density as determined using heavy compaction in accordance with IS: 2720 (Pt.VIII) 1983 followed by field trials as per IS: 10379-1982 which shall form the basis for actual densities with the approval of the Engineer.
- 2.10.3 Where the moisture content of the borrow soil in any layer is above OMC, it shall be left for drying for a suitable period to bring down the moisture content very near to OMC before rolling is commenced. If the soil is dry, water shall be sprinkled either in the borrow pit or over spread layer, as per convenience, in order to attain a moisture content near to OMC, before rolling is commenced. Where the natural moisture content of the borrowed soil is high, compaction at higher moisture contents up to plastic limit can be allowed with the permission of Engineer. However, its effect on the design must be analysed and, if necessary, bank profile should be revised.
- 2.10.4 Each layer shall be compacted to the desired density over the entire width commencing from the two sides, before another layer is started.
- 2.10.5 While compacting, it shall be ensured that there is a maximum overlap of 15 cm before each run of the roller.
- 2.10.6 Care shall be taken during the compaction operation to slope the surface of the bank to facilitate the siding and to minimize the absorption of rainwater, particular attention being given to prevention of pounding.
- 2.10.7 The density of each layer of compacted soil shall be ascertained by testing an adequate number of soil samples as decided by the Engineer.
- 2.10.8 The quality of works shall be determined by considering the mean density of the samples in each layer. The mean density shall be equal to or exceed the minimum specified density. If the density is found to be less than the minimum specified by a margin of more than 2% further rolling shall be done at the appropriate location.
- 2.10.9 The contractor shall be allowed to pay a further layer of soil only after compaction of preceding layer has been satisfactory.

- 2.10.10 The top of the formation shall be finished to a slope of 1 in 30 away from the centre.
- 2.10.11 In bank filling above or against structures such as bridges, the materials shall be deposited in layers not more than 200 mm in thickness sloping away from the structure with each layer carefully tamped. Only the best available materials approved by the Engineer shall be used for this purpose.
- 2.10.12 Beyond the theoretical profile of bank an extra width of 50 cm shall be rolled either side which after finishing the bank up-to final height shall be dressed by removing the loose earth on account of rollers not able to compact the soil at the edge of the formation width.
- 2.10.13 The additional earth, after finishing the bank up-to final height shall be removed and spread at the toe of the bank with proper slope for drainage. No extra payment will be made for providing and subsequent removal of this extra earth and contractor is to quote his rates accordingly.
- 2.11 No hand roller or hand ramming is permitted. However, where it is physically not possible to use the mechanical roller, the compaction maybe done by using hand roller or hand hammer/tamper with prior written permission of the Engineer, in which case thickness of layer to be restricted to 150 mm in loose state, so as to achieve the prescribed degree to compaction.
- 2.12 Necessary arrangement for the will testing at site will have to be organised by the contractor in accordance with these specifications as directed by the Engineer and no extra payment will be made to him on this account. The contractor shall also establish a self- sufficient laboratory for soil testing and quality control testing.
- 2.13 SETTING UP SOIL TESTING LABORATORY AT SITE
- In each contract section field soil testing laboratory should be set up (Contractor should purchase equipment for soil testing) to carry out soil testing.
- 2.1 Under mentioned soil tests should be carried out:-
- i) MDD & OMC of soil.
  - ii) Liquid limit and plastic limit test (for classification of soil),
  - iii) Sieve analysis to classify soil as coarse grained or fine grained soil,
  - iv) Field density of compact soil in each layer at an interval of 50 m this should be minimum 98% of MDD as determined using heavy compaction in accordance with is IS: 2720 (Pt.VIII) 1983.
  - v) In each of coarse grained soil density index (relative density) of compacted soiling accordance with IS: 2720 (Pt.XIV) – 1983.
  - vi) CBR test.
- 2.15 List of equipment required for soil testing
- i) Equipment for liquid limit and plastic limit test,
  - ii) Modified proctor test mould,
  - iii) Tube reamer weight 4.90 kg. Drop height 450 mm.
  - iv) Infra-red lamp and torsion balance meter,
  - v) IS sieve Nos. IS 100, 63, 20, 10 and 4.75 for coarse grain sieve analysis and 2mm, 1.0 mm, 600 micron, 800 micron, 425 micron, 212 micron, 150 micron & 76 micron IS sieves for fine grain sieve analysis.
  - vi) Chemical balance with weight box.
  - vii) Physical balance with weight box.
  - viii) Knife,

- ix) Tray,
- x) Crucibles,
- xi) Weight,
- xii) Measuring cylinder,
- xiii) CBR testing equipments.

2.16 List of Equipment for Field Compaction Test.

- i) Core cutter with Dolly-Volume 10 (x) cum,
- ii) Reamer,
- iii) Moisture meter (Complete set)
- iv) Physical balance with weight, v)  
Knife,
- vi) Tray.

2.17 Soil should be used on embankment only after passing by AEN/XEN after conducting tests. Soil testing should be done from borrow pits and graph should be plotted. Test results should be signed by IOW/AEN/SEN.

2.1 Under mentioned registers should be maintained at site and contractor's signature obtained.

- i) MDD & OMC of soil
- ii) Sieve analysis of soil
- iii) Plastic limit and liquid limit of soil,
- iv) Record of passing soil by XEN
- v) Field compaction result layer-wise at 50 m interval.
- vi) Earthwork calculation registers
- vii) Site order book.
- viii) Log book of daily work done.
- ix) CBR test results.
- ix) Any other register required for work.

All above register should be submitted to Dy.CE/CON along with each CC bill.

2.19 PEGGING OUT OF ALIGNMENT

- 2.19.1 The alignment should be marked on the ground from apex to apex of adjoining curves, so that there is no possibility of having lateral shift in alignment produced from two ends. On straight pegs should be fixed at 50 m interval and on curve it should be fixed at 25 m interval and at all TPs.
- 2.19.2 Top of sub-bank should normally be 30 cm above HFL but depending to the site conditions the height of sub-bank should be decided by XEN in charge of the work. The top level of sub-bank should be decided before starting the work so that toe line can be marked correctly.
- 2.19.3 Earthwork should not be started in bank and sub-bank till dag belling at toe line is done and it is checked by XEN. Dag belling of toe line should be done at a distance of 1 meter from actual toe of bank/sub-bank. Height of sub-bank should be decided before dug belling is done so that toe line (including sub-bank) can be marked correctly. Dag belling

of toe should be done considering 50 cm. Extra width for main bank (which is to be dressed later on), in case of sub-bank extra width should be considered for main bank as well as for sub-bank i.e. total extra width of 100 cm.

2.20 MEASUREMENT AND PAYMENT.

2.20.1 It should be clearly noted that the payment for earth filling shall be made on the basis of net quantity after deduction of shrinkage from the Gross quantity.

2.20.2 The percentage of deductions due to shrinkage shall be made as under unless otherwise stated in the description of the works:

for earth filling with mechanical compaction. 5% (Five percent)

for earth filling without mechanical compaction. 10% (Ten percent)

2.20.3 The gross quantity will be arrived from the cross sectional areas after plotting the final formation levels of finished formation over the original ground levels. The total height of filling (including the shrinkage) to be done shall be decided by the Engineer. Extra quantity of earth filling beyond the required width and height (including the shrinkage) and beyond the toes will not be paid. The toes of the bank shall be as per final slope for a required profile on the basis of formation levels shown in the longitudinal section. The contractor should quote his rate accordingly.

2.20.4 In case earthwork is done under water in isolated locations rates quoted by the tenderer must take into account all possibilities of base settlement in marshy area etc. after making necessary investigation and payment shall be made only on final cross sections. No additional payment or any claim will be accepted.

2.20.5 If bandelling etc. is required for earthwork under water to be contained, the rate for earthwork would cater for this.

2.21 The "Turfing of bank" will not be commenced before slopes are dressed to the specific section and without the written permission of the Engineer. It will consist of sods not less than 7.5 cm in thickness and 23 cm square, well beaten into the slope of the bank, and laid in manner so that their edges are in close contact and form a level and compact surface. The contractor shall be responsible to ensure that the turf grows properly. In the event of its not doing so, he will replace such parts, as have not grown at his own expenses.

2.22 When the earth for making of formation is borrowed from adjacent private lands contractor must ensure that minimum distance of borrow pit in private land from the toe of new bank is at least equal to the height of bank plus 3.0 meter.

2.23 Under no circumstances incomplete work will be taken over by the department. The contractor shall notify sufficiently in advance his intention of handing over a particular stretch of completed/finished work so as to enable recording final levels.

3 EXCAVATION FOR STRUCTURES.

3.1 Pits trenches for foundations of bridges, culvert wells, apron and other structures shall be taken out to the levels and dimensions shown on the approved drawings or to such other levels and dimensions as the Engineer may direct. The bottom of all excavations shall be carefully levelled and stopped on benches as directed by the Engineer. Any pocket of soft or loose materials and fissures in the bottom pits and trenches shall be removed and the cavities so formed filled or grouted with concrete as directed by Engineer. When any excavation has been done and trimmed to the required levels and dimensions, the Engineer shall be informed accordingly so that he may inspect the complete pit or trench and no excavation shall be filled in and covered with concrete until it has been inspected and the contractor has been authorised to proceed with work. All surplus excavation not required for refilling shall be deposited in embankments, or otherwise disposed of as directed. The work shall include all necessary sheeting, shoring, bracing, drawing and pumping



out water, removal of all logs, stumps, grubs and other deleterious matters, obstructions, necessary for placing the foundations.

- 3.2 When required by the Engineer, materials in the last 500 mm of depth of the excavations shall not be removed until immediately before the concrete is to be placed.
- 3.3 All excavation for structures shall generally be as small as practicable, consistent with the proper construction of work. Any excavation taken out to a greater depth than that required shall be back filled with concrete of the foundation grade at the cost of the contractor.
- 3.4 Where water is met with during excavation due to stream flow, seepage, storing, rain or other reasons, the contractor shall take adequate measures such as bailing, pumping, constructing diversion channel, drainage channel, bonds and other necessary works to keep the foundation trenches dry and other necessary and to protect the green concrete against damage by eruption or sudden rising of water level. Approval of the Engineer to any method adopted for the adequacy of dewatering and protection arrangements and for the sound safety of the work shall be required.
- 3.5 Refilling of foundation pits and trenches shall be carried out only after the foundation and structure works within the excavation have been inspected and approved by the Engineer. Unless otherwise directed by the Engineer all fillings shall consist of approved materials. All space between foundation concrete and the sides of excavation shall be refilled to the original surface, using approved plant, in single layers not exceeding 250 mm loose thickness which shall be watered and completed to a dry density not less than that of the adjoining soil strata. Timber sheeting and other excavation support shall be carefully removed as the filling proceeds but the removal of such supports will not relieve the contractor of his responsibility for the stability of the works.

### 3.6 MEASUREMENTS OF PAYMENT

- 3.6.1 Excavation for structures shall be measured in cubic meters, limited to the dimensions shown in the approved drawing or as directed by the Engineer keeping in view practical necessity for proper execution of the work. Foundation sealing, dewatering including pumping shall be deemed to be incidental to the work and no extra payment shall be payable for this work.
- 3.6.2 For any special treatment of foundation such as grouting of cavities and fissures, extra payment will be made at mutually agreed rates.

### 3.7 RATES

The contract unit rate for the item of earthwork in excavation for structures shall be paid in full for carrying out the required work including full compaction to –

- i) Setting out including all ancillary works like pegging and supply of pegs etc.
- ii) Construction of necessary sheeting, shoring and bracing and then subsequent removal.
- iii) Removal of all logs, stumps, grubs and other deleterious matters and obstructions for placing foundations including trimming of bottom of excavations.
- iv) Foundation sealing, de-watering including pumping.
- v) Back filling upto the top of foundation clearing up the site and disposal of all surplus materials within leads upto 200 m inclusive of all leads, descents etc.
- vi) All labour, materials, tools, constructions plants, safe guards and incidental necessary to complete the work as per specification.

#### 4.0 MATERIALS FOR STRUCTURES

All materials to be used in the work shall be in conformity with the requirement laid down hereunder. All other materials not specified herein fully are required to be used in the work conforming to the appropriate code described under clause 1.2.1. These materials shall only be used on being approved by the Engineer or his representative and in case being rejected shall be removed from site and replaced at his own expenses by the Contractor.

##### 4.1 BINDING WIRE

Binding wires used for binding the reinforcement shall be of approved quality soft annealed iron wire not less than 1 mm (18 SWG) size, conforming to IS: 280.

##### 4.2 REINFORCEMENT STEEL

4.2.1 All structural steel for bridges shall conform to IS: 2062 –2011

4.2.2 Reinforcement to be used in RCC/ PSC bridge works shall conform to IS: 1786, 1979

4.2.3 High Tensile pre-stressing steel (strands) used for PSC girders shall conform to IS: 6006-2014 class-I type.

##### 4.3 TIMBER

The timbers used for structural purpose whether permanent/semi-permanent or temporary work shall conform to IS: 883.

##### 4.4 WATER FOR CONCRETE AND MORTAR

Water shall be clean and free from injurious amount of deleterious materials. Normally portable water from an approved source may be considered satisfactory for washing aggregates, mixing and curing concrete, and shall comply with the provision of IS: 456.

##### 4.5 AGGREGATE FOR CONCRETE

4.5.1 General – The aggregates (coarse and fine) for concrete shall comply in all respects with IS: 383 and shall be obtained from a source approved by the Engineer.

4.5.2 Aggregate which are not clean are to be washed to the satisfaction of the Engineer or his representative in water of quality as described in Clause 4.4. If the Engineer so directs, the contractors shall provide and operate a washing plant to ensure adequate supply of clean aggregates within the approved grading limit. All such washed aggregates shall be stored and drained for at least 24 hours before being used for concreting.

4.5.3 The coarse aggregate, unless otherwise specified or authorized by the Engineer shall not be delivered to the site. All aggregates shall be protected from dust contamination by methods approved by and to the satisfaction of the Engineer or his representative.

##### 4.6 SAMPLES AND TESTS

4.6.1 GENERAL : The samples of all the materials proposed to be used by the contractor in the work shall be got tested by the contractor in an approved laboratory and necessary test certificates including manufacturers certificates of tests, proof sheets, mill sheets etc. showing that the materials have been tested in accordance with and conform to the requirements of the appropriate IS Codes and other relevant Standard Specifications or these specifications, shall be supplied in original free of charges on request to the Engineer or his representative.

4.6.2 Samples of the following materials shall be submitted to the Engineer or his representatives free of charge for testing and approval.

- i) Coarse and fine aggregate,
- ii) Any other materials as directed by Engineer.



- 4.6.3 Samples provided to the Engineer or his representatives for their retention are to be kept in levelled boxes suitable for storage. Materials or workmanship not corresponding in character and quality with approved samples shall be rejected.
- 4.6.4 Samples required for testing and approval must be supplied giving sufficient time to allow for such testing and approval, due allowance being made to the fact that if samples are rejected further samples shall be required. Delay to the works arising from the late submission of samples shall not be acceptable as a reason for delay in the completion of the work.
- 4.6.5 The testing of the materials may be carried out by the Railway in any laboratory of its choice if required. If the materials are not found to comply with the various provisions laid down in the relevant IS Codes. Other relevant Standard Specifications or these specifications, the same shall be rejected irrespective of the test certificate submitted by the contractor.
- 4.6.6. In addition the Engineer shall have the right to require the contractor at any time to draw samples of aggregates or any other materials from stock piles on the site or any other locations to be drawn in accordance with IS-2386 and tested in laboratory approved by the Engineer in accordance with the appropriate clause of IS: 2386 at the cost of the contractor.
- 4.6.7 Tests for the determination of impurities in the sand shall be made once daily until the Engineer is satisfied that the specified compression strength is being regularly obtained, such tests shall be made once weekly and at other times as directed by the Engineer.
- 4.6.7.1 The cement and steel brought by the contractor will also be tested from each lot as directed by the Engineer or his representative. The contractor will also furnish original purchase bills. Random samples shall also be taken to assess the weight per meter of steel. The payment shall be on the actual weight basis taking advantage of tolerance in the IS: Code.
- 4.6.8 ADDITIONAL TESTS
- In addition to the tests required under clause hereof the Engineer or his representative may order tests to be carried out by an independent person appointed by him at such place or in such laboratory as he may determine in accordance with the appropriate clause of IS:2386 or IS: 2586 and the cost of such tests shall be borne by the contractor.
- 4.6.9 The results of all such tests as described herein above and later or in succeeding paras shall be forwarded to the Engineer or his representative for his retention as record.
- 4.6.10 INSPECTION OF MATERIALS
- 4.6.10.1 Wherever the Engineer or his representative gives notice to the contractor that materials are to be inspected off the site, the contractor shall, having regard to the location of the materials and the nature of the inspection, test or examination required, give to the Engineer or his representative at least one week's notice of such materials being ready for inspection, test or examination.
- 4.6.10.2 Delay to works arising from the late submission of such notice will not be acceptable as reason for delay in the completion.
- 4.6.11 REJECTION OF MATERIALS
- 4.6.11.1 Materials shall be tested before leaving the manufacturer's premises, where appropriate. Materials may as well be tested on the site and they may be rejected if found not suitable or not in accordance with the specifications notwithstanding the results of tests at manufacturer's works or elsewhere or test certificates.
- 4.6.11.2 The Engineer or his representative shall have the right to order at any time, that any aggregate or other construction materials which do not meet with his approval shall not be used in the works and such rejected materials shall be removed from the site by the contractor at his own expenses, notwithstanding any prior approval which might have been given earlier.

4.6.11.3 In case of default on the part of the contractor in removing rejected materials within the time specified in notice, the Engineer shall be at liberty to have them removed by other means at the cost of the contractor.

#### 4.6.12 STORAGE OF MATERIALS

4.6.12.1 All materials to be used in permanent works shall be stored on rocks, supports, stock piles in bins under cover etc. as appropriate, to prevent deterioration or damage from any cause whatsoever to the satisfaction of the Engineer or his representative.

4.6.12.2 The contractor shall at all times maintain on the site such quantities of each type of aggregates as are considered by the Engineer or his representative to be sufficient to ensure continuity of works.

4.6.12.3 Each type and grading of aggregate shall be stored in separate tacks on a hard floor having sufficient slope to ensure adequate drainage of surplus water. Wet and washed aggregate shall be kept in storage for at least 24 hours to ensure adequate drainage before being used for concreting.

#### 4.7 CEMENT

4.7.1 In general, for all mass and reinforced concrete works, ordinary port-land cement conforming to IS: 269 shall be used. However, Railway reserves the right to ask the contractor at any time for using other varieties of Standard cement complying with the relevant IS Codes or any other Standard Specifications and the contractor shall use the same. Two or more types of cement in one member of the structure shall not be allowed.

#### 5.0 CEMENT CONCRETE WORKS

##### 5.1 GRADE OF CONCRETE

5.1.1 Nominal mix concrete is to be used where it is shown in the drawings or as directed by the engineer.

##### 5.2 STRENGTH REQUIREMENT OF CONCRETE

5.2.1 In designation of concrete mix, letter 'M' refers to mix and the number of the specified 28 days work cube compressive strength of that mix on 150 mm cubes expressed in N/mm sq.

5.2.2 The compressive strength requirements for various grades of concrete shall be as given in table below :-

S/N	Grade of concrete	Compressive work test strength in N/mm sq. Of 150mm cubes after mixing conducted in accordance with IS: 516	
		<u>Min. at 7 days</u>	<u>Min. at 28 days</u>
i)	M10 (Nominal mix. 1:3:6)	7	10
ii)	M15 (Nominal mix 1:2:4)	10	15
iii)	M20 (Nominal mix 1:1 ½ :3)	13	20
iv)	M25 (Controlled mix 1:1:2)	17	25
v)	M30 (Controlled mix)	20	30
vi)	M40 (Controlled mix)	27	40
vii)	M45 (Controlled mix)	30	45

5.2.1 Where the strength of a concrete mix as indicated by tests, lies in between the strength of any two grades specified in table above, such concrete shall be classified for all purpose as concrete belonging to the lower of the two grades between which its strength lies.

### 5.3 TESTS AND STANDARDS OF ACCEPTANCE

#### 5.3.1 PRELIMINARY TESTS FOR CONTROLLED CONCRETE

5.3.1.2 Trial mixes shall be made using samples of the aggregates cement and water, typical of those to be used in the works.

5.3.1.3 Should the strength shown by the preliminary tests prove to be below the figures specified in para 5.2.2 the contractor shall make such changes in proportions as are required to bring the concrete upto the required strength.

5.3.1.4 Wherever mix has been approved, no variations shall be made in the proportions, the original course of the cement and aggregates or in the type, size and grading zone including water cement ratio without the consent of the Engineer who may require further tests to be made.

5.3.1.5 For controlled concrete, the concrete mix shall be so designed as to attain in preliminary tests strength of at least 35 percent higher than that required on work given in table under Clause 5.2.2.

#### 5.3.1.6 WORKS STRENGTH TESTS FOR CONCRETE

5.3.2.1 The contractor shall be held responsible for ensuring that the crushing strength of the concrete as placed is not less than the designed strength as per approved plans.

#### 5.3.2.2 SAMPLING AND STRENGTH OF DESIGNED CONCRETE MIX

##### GENERAL

Samples from fresh concrete shall be taken as per IS 1199 and cubes shall be made cured and tested at 28 days in accordance with IS 516.

In order to get a relatively quicker idea of the quality of concrete, optional tests on beams for modulus of rupture at  $7 \pm 2$ h or at 7 days or compressive strength test at 7 days may be carried out in addition to 28 days compressive strength test, For this purpose the values should be arrived at based on actual testing. In all cases the 28 days compressive strength specified in Table 2 shall alone be the criterion for acceptance or rejection of the concrete

##### FREQUENCY OF SAMPLING

##### Sampling Procedure

A random sampling procedure should be adopted to ensure that each concrete batch shall have reasonable chance of being tested that is, the sampling should be spread over the entire period of concreting and cover all mixing units.

##### Frequency

The minimum frequency of sampling of concrete of each grade shall be in accordance with the following:

<u>Quantity of concrete in the work, cum</u>	<u>Number of samples</u>
1-5	1
6-15	2
16-30	3
31-50	4
51 and above	4 plus one additional sample for each additional 50 cum or part thereof.

##### Note

At least one sample shall be taken from each shift. Where concrete is produced at continuous production unit such as ready mixed concrete plant, frequency of sampling may be agreed upon mutually by suppliers and purchasers.

### TESTSPECIMEN

Three test specimens shall be made for each sample for testing at 28 days. Additional samples may be required for various purposes such as to determine the strength of concrete at 7 days or at the time of striking the form work, or to determine the duration of curing, or to check the testing error. Additional samples may also be required for testing samples cured by accelerated methods as described in IS 9103. The specimen shall be tested as described in IS 516.

### TESTRESULTSOFSAMPLE

The test results of the sample shall be the average of the strength of three specimens. The individual variation should not be more than  $\pm 15$  percent of the average. If more the test results of the sample are invalid.

- 5.3.2.3 The contractor shall provide at his own expense all necessary labour, materials including cement moulds, equipment for sampling and all other ancillaries required in preparing specimens etc. as given in clause 5.3.2.2 and arrange to carry out test on these specimens in his own field laboratory. The contractor shall test these specimens in presence of the representative of the Engineer. Duplicate results shall be maintained under the joint signature of the contractor and the Engineer's representative. One set of the result being kept with the contractor and the other with the Engineer's representative.
- 5.3.2.4 All work shall be carried out under the supervision of a qualified and competent Engineer of the contractor who shall supervise proportioning, placing and compacting of concrete at all stages.
- 5.3.2.5 The Engineer reserves the right to take samples of concrete test cubes independently at his own discretion. The contractor shall provide all facilities at his own expense in preparation of such samples and concrete test tubes such as labour materials including concrete moulds, equipment for sampling and all other ancillaries required in their preparation. Contractor shall also arrange to transport this specimen to the laboratory selected by Railway at his own cost. Contractor shall depute his representative during testing who shall sign the test results as a token of contractor's acceptance.

### 5.4 STANDARD OF ACCEPTANCE

The average strength of the group of cubes cast for each day shall not be less than the specified work cubes strength. 20 percent of the cubes cast for each day may have values less than the specified strength, provided the lowest is not less than 85 percent of the specified.

### 5.5 PROPORTIONINGCONCRETE

- 5.5.1 Ordinary concrete mix shall generally be specified by volume. Volume of ingredients shall be worked out taking 50 kg. Of cement as 0.035 cum in volume. While measuring aggregates by volume, shaking, ramming or hammering shall not be done. Allowance for bulking of damp sand be made as IS: 2386 (Part-III).
- 5.5.2 Proportion of ingredients required for ordinary concrete containing one 50 kg bag of cement for different grades of concrete is given below :-

Grade of concrete		Mix by volume
M	10	1:3:6
M	15	1:2:4
M	20	1:1.5:3
M	25	1:1:2

## 5.6 WORKABILITY OF CONCRETE

Optimum quantity of water shall be mixed just to produce a design concrete of required workability. Workability shall be such that the concrete surrounds and properly grips all reinforcement. The degree of consistency, which shall depend upon nature of work and method of vibration of concrete, shall be determined by regular slump tests to be carried out by the contractor at his cost. Usually for mass concrete in R.C.C. works where vibrations are used the slumps shall be within 10 mm to 25 mm. The frequency of such tests and the nature of slumps shall be maintained within the limits specified by the Engineer. The Engineer also reserves the right to carry out slump tests independently at his own discretion.

## 5.7 CONTROLLED CONCRETE

5.7.1 The proportions of the ingredients shall be taken by weight from the stock piles collected at site and already approved on the basis of preliminary tests. Care shall be taken that the supply of properly graded aggregate of uniform quality is maintained till the completion of works except where it can be shown to the satisfaction of the Engineer that the supply of properly graded aggregate of uniform quality cannot be maintained till the completion of works. Grading of aggregate shall be controlled by obtaining them in the right proportions as required. Grading of coarse and fine aggregate shall be checked as frequently as possible and as determined by the Engineer.

5.7.2 Cement shall have to be weighed from bulk stocks at site and not by bags, it shall be weighed separately from the aggregates.

5.7.3 Water shall either be measured by volume in calibrated buckets or weighed. All necessary equipment shall be maintained in a clean and serviceable condition. Their accuracy shall be periodically checked.

5.7.4 To maintain the specified water cement ratio constant and at its correct value, moisture contents in both fine and coarse aggregates shall be determined with reference to IS: 2386 (Part-III) and amount of mixing water shall then be adjusted suitably.

## 5.8 MIXING CONCRETE

5.8.1 All concrete shall be mixed at site in a drum type mechanical mixer in first class working condition. Mixing shall be continued till materials are uniformly distributed and a uniform colour of the entire mass is obtained and each individual particle of the coarse aggregate shows complete coating of cement mortar. The mixing shall in no case be less than 2 minutes after all the ingredients have been put into the mixer.

5.8.2 Mixer which has been out of use for more than 30 minutes shall be thoroughly cleaned before putting in a new batch. Mixing plant shall be thoroughly cleaned before and after use. A standby mixing plant equivalent to that in use, shall be provided and maintained ready for immediate use during any break down.

## 5.9 FORMWORK

5.9.1 The term form work includes all temporary or permanent form essential for forming the concrete, together with all temporary construction props, bracings required for the support. In general the erection and removal of form work shall be in accordance with the provision given under clause 9.2 of I.R.S. Concrete Bridge Code (April, 1982 edition).

### 5.9.2 CONSTRUCTION & PREPARATION OF FORMWORK FOR BRIDGES

5.9.2.1 Forms for concrete shall be made of either metal or timber suitably lined and of substantial and rigid construction true to shape, alignment and dimensions as shown on the approved drawings.

5.9.2.2 Forms shall be mortar tight and shall be made sufficiently rigid by the use of ties and bracings to prevent any displacement, deflection or movement of any kind. They shall be

strong enough to withstand of the construction, all pressure, ramming and vibration, movement of persons, materials and plant during and after placing the concrete. Special measures shall be taken to ensure that the form work does not hinder the shrinkage of concrete because without this cracking could occur before the form work is removed.

- 5.9.2.2.1 When the forms are ready for commencing concreting, the contractor shall inform the Engineer or his representative to inspect and accept the forms as to their strength, alignment and general fitness. Being satisfied with the form work Engineer then may allow the contractor for pouring concrete but such inspection and permission shall not relieve the contractor of his responsibility for safety of men, machinery, materials and for results obtained.

### 5.9.3 REMOVAL OF FORMWORK

- 5.9.3.1 The consent of Engineer or his representative shall be obtained in all cases before removing any form work but such permission shall not relieve the contractor of his responsibility in respect of any injury or damage to the concrete work arising from the removal of the forms.
- 5.9.3.2 Forms shall be so constructed and fitted as to be removable in sections in the desired sequence without damaging the surface of concrete or disturbing other sections.
- 5.9.3.3 Due consideration shall be given to the local conditions, character of structure, the weather, climate and temperature and other conditions that influence the setting of concrete before removal of form work.
- 5.9.3.4 Where internal metal ties are permitted, they shall be extracted or cut without causing any damage to concrete and remaining holes filled with mortar. No permanently embedded metal part shall have less than 25 mm clear cover to the finished concrete surface. The contractor shall make good, at his own expense, any injury or damage to the concrete work arising from removal and striking of forms and supports.
- 5.9.3.5 The form works shall be cleaned and made good to the satisfaction of the Engineer before reuse. The cost of all form work shall be deemed to have been included in the rate for cement concrete items of work and shall not be paid separately.

### 5.10 TRANSPORT, PLACING AND COMPACTION OF CONCRETE

- 5.10.1 The method of transporting and placing concrete shall be approved by the Engineer or his representative. All concrete shall be so transported and placed that no contamination segregation or losses of its constituent materials take place.
- 5.10.2 All form work and reinforcement, contained in it shall be cleaned and made free from standing water, dust, snow or ice immediately before placing of concrete. No concrete shall be placed in any part of the structure until the approval of the Engineer or his representative has been obtained. Concrete shall be compacted in its final position within 30 minutes of its discharges from the mixer. Concrete when deposited shall have a temperature of not less than 4.5 degree C and not more than 38 degree C.
- 5.10.3 Except when otherwise agreed to by the Engineer or his representative, concrete shall be deposited in horizontal layers to a compacted thickness of not more than 450 mm when internal vibrators are used and not exceeding 300 mm in all other cases. In no case concrete shall be allowed to be dropped from a height of more than 2 meters.
- 5.10.4 When concrete is conveyed by chutes the plant shall be of such size and design so as to ensure practically continuous flow. Slope of the chute shall be so adjusted that the concrete flows without the use of excessive quantity of water and without segregation of its ingredients. The delivery end of chute shall be as close as possible to the point of deposit. The chute shall be thoroughly flushed with water before and after each working period and the water used for this purpose shall be discharged outside the form work.



5.10.5 All concrete shall be compacted to produce a dense homogeneous mass with the help of vibrators except in case of concrete poured under water, where vibrator cannot be used. To ensure thorough and properly compacted concrete the contractor shall carry out a necessary compacting factor tests at his own cost at such frequency and the value of compacting factor to be maintained as decided by the Engineer. The contractor shall have to carry out other tests like Penetrometer and Vee Bee Consist meter tests or any other tests as directed by the Engineer at his own cost. The Engineer, however, reserves the right to carry out such tests, independently at his own discretion. Sufficient vibrators in serviceable condition shall be kept at site so that spare equipment is always available in the event of break-downs. Internal vibrators shall be capable of producing not less than 10,000 cycles per minute, and external or form vibrator not less than 3,000 cycles per minute. Vibration shall not be applied through reinforcement, and where vibrator of the immersion type are used, contact with reinforcement and all inserts shall be avoided as far as practicable.

#### 5.11 CONCRETING UNDERWATER

5.11.1 The methods, equipment, materials and proportions of the mix to be used shall be got approved by the Engineer or his representative before concreting under water. Greatest care shall be taken to prevent the cement being washed out and the concrete shall be deposited by means of a tremie or using the skip boxes system. Pumping shall not be done while concrete is being placed or until 24 hours thereafter.

5.11.2 The deposition of concrete should be done continuously until it has been brought to the required height. The top surface shall always be kept as nearly level as possible to prevent formation of scum.

#### 5.12 FINISHING

5.12.1 Immediately after the removal of forms, all exposed bars or bolts passing through RCC member and used for shuttering or any other purpose shall be cut inside the RCC member to a depth of atleast 25 mm below the surface of the concrete and resulting holes be closed by cement mortar.

5.12.2 If in the opinion of the Engineer, the pockets/honey comb in the structure are found to such an extent or character as to affect the strength of the structure materially or endanger the life of the reinforcement, he may declare such concrete defective and order for its removal and replacement at the expense of the contractor.

#### 5.13 CURING

5.13.1 All concrete shall be protected immediately after compaction and during hardening from harmful effects of rain, funning water, sunshine, frost and driving winds, shocks, vibrations, traffic and rapid temperature changes. All exposed faces of concrete shall be kept continuously wet by applying water or covering with wet sacking, hessian etc. for a period of not less than 14 days from the date of deposition.

#### 5.14 CONSTRUCTION JOINTS

5.14.1 All construction joints horizontal or vertical shall be at predetermined position according to approved drawing or as directed by the Engineer. Prior to commencement of fresh concreting over any construction joint which has set but not hardened, the removal of laitance and roughening shall be done by wire brushing and washing and care shall be taken to avoid dislodgement of coarse aggregates.

5.14.2 At construction joints where the concrete has et hard, any skin or laitance shall be thoroughly hacked, swept cleaned and washed with clean fresh water. The surplus water shall be removed immediately before depositing fresh, concrete. The neat cement, grout shall be followed by 13 mm thick layer of cement mortar of same proportion as in concrete and the concreting resumed immediately thereafter. The first batch of fresh concrete



shall be forced hard on to the mortar layer and the set faces, angles and corners by means of compacting tools, vibrators etc. and the damping effect on vibration in such position shall be allowed for.

- 5.14.3 Construction joints shall be avoided as far as possible in case of structure, especially at tensile zones. Where unavoidable, concreting shall be carried out continuously upto such joints which shall preferably be transverse to the line of main compression. However, in all cases, the position of construction joints shall be predetermined and got approved by the Engineer.

5.15 REINFORCEMENTS

- 5.15.1 All reinforcement shall be cleaned thoroughly by removing loose scales, oil, grease or other deleterious materials. The contractor shall obtain the approval of the Engineer or his representative to the reinforcement when fixed in position before any concrete is deposited in the forms.

- 5.15.2 Bars shall be bent cold or straightened in a manner to the satisfaction of the Engineer or his representative. Bars bent during transport or handling shall be straightened before using on work. They shall not be heated to facilitate bending. Welding shall be done as per IS Code of practice or IRS Concrete Bridge Code as applicable.

5.15.3 PLACING AND MAINTENANCE OF REINFORCEMENT IN POSITION

- 5.15.3.1 All reinforcement bars shall be cut and Standard hooks for M.S. rounds made at ends and accurately placed in position as shown on the approved drawings and shall be securely held in position before and during concreting by annealed binding wire (as specified in Clause 4.1) and by using dense concrete spacer blocks prepared and cured as directed by the Engineer or his representative, or metal chairs, metal spacers, supporting wires or other approved device at sufficiently close intervals. Bars representative, or metal chairs, metal spacers, supporting to get displaced during concreting or any other operation over the work. Metal supports shall not extend to the surface of the concrete, except where shown on the drawings, pieces of broken stone or brick and wooden blocks shall not be used.

- 5.15.3.2 As far as possible, bars of full length shall be used. Where bars are required or permitted to be lapped by the Engineer, or his representative, the over laps shall be staggered for different bars and located at points, along the span where neither shear nor is bending moment maximum. The concrete cover measured over the reinforcing bars shall be in accordance with the approved drawings.

5.16 MEASUREMENT FOR PAYMENT

- 5.16.1 The work of cement concrete shall be measured in cubic meters. The volume occupied by reinforcement shall not be deducted in R.C.C. works. The measurement shall also be for the purpose of computing cement consumption. Reinforcement shall be measured in length (running meter) separately for different diameters as actually used in work including overlaps, hooks ends and inclusive of chairs, supports as actually placed and incorporated in the work. From the length so measured the weight the reinforcements shall be calculated in quintals on the same basis on which steel is supplied to the contractor by the Railway.

The weight of binding wire shall not be taken into account in computing the reinforcement quantity. This measurement shall be only for the purpose of working out reinforcement consumed in the work.

5.17 SETTING OF FIELD LABORATORY BY CONTRACTOR

- 5.17.1 The contractor shall set up a field laboratory of his own at work site as a part of concrete work and shall be kept open for use and inspection by the Railway at any time.

- 5.17.2 All the pressure gauge and other machines, equipment and measuring instruments shall be got checked and calibrated regularly as directed by the Engineer, by an independent agency and the adjustment certificate furnished to the Engineer. The contractor shall

render all reasonable assistance and help in making such checks and tests etc. The cost of all checks and calibrations shall be borne by the contractor. The cost of all tests for materials and cubes shall also be borne by the contractor. Alternatively, the contractor shall arrange to get the cubes and their materials, as required tested at his own cost, in approved laboratory to the satisfaction of the Engineer.

6.0 ABUTMENTS, PIERS AND R.C.C. BOXES

6.1 The abutments, piers, pier caps are to be constructed of concrete grades as mentioned in the approved drawing. The individual members are to be monolithic with the parent member

6.2 WEEP HOLES

Sufficient Nos. of weep holes including provision of Asbestos pipes (in the weep hole portion only) in abutments, wing and return walls is to be provided as shown in the approved drawing or as directed by the Engineer with contractor's own labour, materials etc. No extra payments will be admissible for provision of the weep holes in the bridges and no deduction from quantity of concrete shall be made for weep holes.

7.0 SLOPE PITCHING AND APRON

For pitching the slopes of banks, bridge floors, and apron on bridge approaches, hand packed rough stones weighing between 30 kg and 50 kg with not less than 150 mm size shall be used in such a manner as to provide maximum interlocking amongst the individual stones. The size to be adopted should suit the total thickness required as per drawings. The work should be carried out as to provide uniform slopes and curvature around abutments. The rates also include provision of steps shown in plan and pitching work under water wherever required.

8.0 PACKING BEHIND ABUTMENT

Boulders to be used behind abutment, wing and return walls, shall be collected from approved quality of stone to angular shape and shall not be less than 150 mm size in any direction and shall have its maximum dimension not less than 250 mm and shall weigh not less than 12 kg and not more than 55 kgs. The hand packing should be done in sections as shown in the drawing or as directed by the Engineer.

9.0 R.C.C. HUME PIPE (Heavy Duty)

9.1 ~~Relevant item of the schedule of items and approximate quantities include supply at the contractor's cost of reinforced concrete pipes as per RDSO's Drawing No. RDSO/B-16-09-RI and shall be in accordance with specifications mentioned below. Cost should include the cost of reinforcement steel and cement.~~

9.1.1 The pipes will be of flush joint, design as shown in above stated plan.

9.2 The rates shall include all charges to be incurred in supplying, loading at the manufacturer's premises and transporting upto the site of work, all cost of materials and labour incidental to loading, unloading, handling etc. together with the cost of transport, handling at the site of work placement in position aligning and joining the pipes with cement mortar of (1:2) proportion, curing etc. complete. Cement as per requirement for joining pipes also will be supplied by the contractor unless otherwise specified.

9.3 The contractor will have to advise Railway of the source of the supply of the R.C.C. pipes including the name of the manufacturer and location of the manufacturer's premises.

9.4 METHOD OF MANUFACTURE

The methods of manufacture of R.C.C. pipes will be such so as to conform to the dimensions, specifications etc. as stated in the RDSO's plan. In addition the specification as per IS: 458 – 1971 shall be the guiding factor for manufacture of the pipes. Where there is any discrepancy between the two, the specification mentioned in drawing will prevail.

- 9.5 During manufacture, tests on concrete shall be carried out as detailed in IS: 456 – 2000 and the contractor will furnish results of compressive tests of concrete cylinders or cubes made from the concrete used for the pipes duly certified by the manufacturer, concrete shall be mixed in a mechanical mixer.
- 9.6 The following information shall be clearly marked in each pipe by the manufacturer :-
- i) Drawing No.
  - ii) Date of manufacture and
  - iii) Name of the manufacturer or his registered trade mark, if any or both.
- 9.7 Sampling, inspection and testing of pipes shall be at the cost of contractor in accordance with the provision in IS: 458 – 1971 and IS: 3597 – 1985 at the manufacturer's premises before these are dispatched to the site. Further inspection of all pipes will be carried out at the site of work before being placed in position.
- 9.8 If the Railway desires, edge bearing test is to be conducted by the manufacturer on samples selected as per IS: 458 – 1974 and is to be carried out as per IS: 3597 – 1985 and the test results supplied. Cost of such tests is to be borne by the contractor.
- 9.9 The reinforcement provided in the pipe as per drawing, can be checked and approved by the Railway's representative before concreting is done. The contractor shall obtain from the manufacturer and submit to the Railway a certificate indicating the details relating to quantity, quality and dispersion of steel in the pipes.
- 9.10 Subsequent to the initial inspection of the pipes at the manufacturer's premises, damages caused to the pipes in the course of handling and transporting of pipes to the site of work will make the pipes liable to be rejected. The decision of the Engineer in this regard shall be final and binding.
- 10.0 Laying of the pipes will conform to the provision of IS: 783 – 1985 or as shown in the approved general arrangement drawing.
- 11.0 PATENTED ITEMS
- 11.1 In case, the agency supplying the patented item is not the contractor to whom the work is assigned and these items are being procured by the Contractor, the concerned contractor will obtain prior approval from the Engineer-in-charge of the work (Min. JA Grade Officer), who will ensure that all design and safety aspects are taken care of. For any specific requirement concerning execution, warranty etc., an agreement/MOU is to be entered between the main contractor and the party supplying the patented items, clearly bringing out the responsibility of party supplying such patented items. A copy of such MOU will be furnished to the Engineer-in-charge by the main contractor to whom work has been assigned by the Railway and after the approval of Engineer-in-charge, such item can be used in work.
- 11.2 The agency supplying the patented item shall provide complete details/specifications/drawings of the items including the manner in which it is to be used.
- 11.3 During the installation of such patented items, authorized representative of the firm supplying such patented/propriety items shall be present and after the execution of work, a certificate to be issued by the firm supplying the patented item indicating its proper installation. Such certificate will have to be kept in record by the concerned Engineer-in-charge executing the contract, before releasing payment for the work done".

# CHAPTER –VI

## Quality Control



## CHAPTER-VI

### QUALITYCONTROL

#### 1 GENERAL

All materials incorporated, all methods adopted and all works performed shall be strictly in accordance with the requirement of these technical specifications. The contractor shall maintain an approved quality assurance programme and have necessary procedure manuals and documentation, various provision in this section are only indicative and not exhaustive.

##### 1.1 FieldLaboratory

###### (i) Scope

The work covers the provision and maintenance of an adequately equipped field laboratory as required for site control on the quality of materials and the works. The lab should be manned, managed & maintained by suitable qualified personnel from the contractor.

###### (ii) Description

The contractor shall arrange to provide fully furnished and adequately equipped field laboratory. The field laboratory shall preferably be located adjacent to the site office of the Engineer and provided with amenities like water supply, electric supply etc.

The laboratory should have space for the installation of equipment, laboratory tables and cupboards, working space for carrying out various laboratory tests, besides a washbasin and a curing tank for the curing of samples, around 4m x 2m x 1m in size. Wooden/ concrete working platform shall be provided against the walls, with adequate storage/ furniture.

#### Laboratory Equipment

(iii) The following items of laboratory equipment shall be provided.

##### General

i.	Oven-Electrically operated, thermostatically controlled, range up to 200 C sensitivity 1 C	1 No.
ii.	Platform balance 300kg capacity	1 No.
iii.	Balance 20kg capacity self-indicating type Electronic	1 No.
iv.	Balance 5kg capacity accuracy 0.5 gm	2 No.
v.	Water-bath electrically operated and thermostatically Controlled with adjustable shovels, sensitivity 1 C.	1 No.
vi.	Thermometers: Mercury-in-glass thermometer range 0 to 250 C	2 No.
vii.	Kerosene or gas stove or electric hot plate	1 No.
viii.	Glass wares, spatulas, wire gauzes, steel scales, measuring casseroles, karahis, enamelled trays of assorted sizes, pestle-porcelain dishes, gunny bags, plastic bags, chemicals, digging tools pickaxes, shovels etc.	As required
ix.	Set of IS sieves with lid and pan :	
	450mm diameter, 63mm, 53mm, 37.5mm, 26.5mm, 13.2mm, 6.7mm and 4.75mm size	1 set
	200mm diameter 2.36mm, 2.0mm, 1.18mm, 900micron, 425micron, 300micron, 150micron and 75micron	1 set
x.	Water testing kit	1 set
xi.	First aid box	1 set

#### For cement and cement concrete

- |      |  |         |
|------|--|---------|
| i.   | Vicat apparatus for testing times                        | 1 No.   |
| ii.  | Slump testing apparatus                                  | 4 set   |
| iii. | Compression strength testing machine of 100 ton capacity | 1 No.   |
| iv.  | Needle Vibrator  | 1 No.   |
| v.   | Concrete cube moulds(for each site)                      | 12 Nos. |

The contractor shall set up a laboratory at a location approved by Engineer and equip the same with adequate equipment and personnel in order to carry out all required tests and quality control work as per standard specifications and/ or as otherwise directed by Engineer. Internal layout of the laboratory and list of equipment shall be got approved by Engineer in advance. In case same contractor is doing work in more than one package, more number of laboratories may be required to be provided as directed by Engineer.

The contractor's laboratory should be manned by a qualified quality control Engineer assisted by experienced technicians and the set up should be got approved by Engineer. The contractor shall carry out quality control test on materials and work at the frequency stipulated in sub clauses of this section. In the absence of clear indications about method and/or frequency of tests for any item in different codes/ standards or as given in these specifications, the direction of Engineer shall be followed.

For satisfying himself about quality of materials and work, quality control tests will also be conducted by Engineer (by himself, his quality control units or any other agencies deemed for client or Engineer), generally at the frequency set forth here in under. Additional tests may also be conducted where, in the opinion of Engineer, need for such test exists.

The contractor shall provide necessary co-operation and assistance in obtaining samples for test and carrying out field tests as required by Engineer from time to time. This may include provision of labour, attendance, assistance in packing and dispatching and any other assistance considered necessary in connection with tests. Alternatively, it may require inspectors to carry necessary instruments to site and carrying out tests at site. The contractor will arrange for such visits and tests at no extra cost to employer.

The contractor shall carry out modifications in the procedure of work, if found necessary, as directed by Engineer during inspection. Works falling short of quality shall be rectified or replaced. If necessary by the contractor at his own cost as directed by Engineer.

The cost of setting up and operating laboratory including building with services, essential supplies like water, electricity, sanitary arrangements and their maintenance and cost of all equipment, tools, materials, labour and incidentals to perform tests and other operations of quality control according to specifications shall be deemed to be incidental to work and no extra payment shall be made therefore. If, however, there is a separate item in the bill of quantities for setting up of a laboratory and installing testing equipment, such work shall be paid for separately.

Source of materials for embankment construction shall be arranged by the contractor and got approved by Engineer. The responsibility for arranging and obtaining land for borrowing or exploitation in any other way shall rest with the contractor, who shall ensure smooth and uninterrupted supply of materials for the quantity required in construction during the construction period.



Similarly, supply of aggregates for construction of bridges and various concrete works and stone of large sizes for protection work, etc. shall be from quarries approved by Engineer. Bricks for building works shall be obtained from approved kilns and samples of supply frequently tested for ensuring uniform good quality. Supply of sand should be from approved river beds or crushed sand from approved quarries.

Steel produced by following manufacturers only shall be supplied by the Contractor and used for construction.

- a. SAIL
- b. TISCO/TATA/TISCON
- c. RINL
- d. JSW/JSPL
- e. Any other Steel Producers having Integrated Steel Plant (ISP) and using iron ore as the basic raw material and having in-house iron rolling facilities, followed by production of steel through the process of DRI-EAF, BF-BOF and Corex-BOF only.

Note: The Contractor shall produce the certificate issued by Plant manufacturer/Plant consultant (with documentary proof of process) establishing process being used at plant is either of DRI-EAF, BF-BOF and Corex-BOF route only, for manufacturing TMT reinforcement bar using iron ore as basic raw material.

For testing of samples of soil, soil mix, granular material mix, bituminous mix, aggregates, cores, tiles, stone, bricks, timber, paints, admixtures, water and other building materials, samples in the required quantities and form shall be supplied to Engineer by the contractor at his own cost.

For cement, bitumen, mild steel, castings, pipes, bearings and other similar materials for which essential tests are to be carried out at the manufacturer's plants or at laboratories other than the site laboratory, the cost of samples, sampling, testing and the furnishing of test certificates shall be borne by the contractor. Contractor shall also furnish test certificates to Engineer.

For testing cement concrete works at site during construction, arrangements for supply of samples, sampling, testing and supply of test results shall be made by the contractor as per frequency and number of tests specified in the Handbook of quality control for construction of Roads and Runways (IRC-Special Publication No.11 & IRS Concrete Bridge & Structure Code) and relevant IS Codes or relevant clauses of these specifications. The cost for this shall be borne by the contractor as included in rates quoted for the work.

The method of sampling and testing of materials shall be as required by the Handbook of quality control for Construction of Road and Runways (IRC special publication No.11), the specifications for road and bridge works of the Ministry of Surface transport (Road Wing) and IRS steel bridges and concrete bridge Codes of ASTM or DIN standard. Where they are contradicting the provisions of IRS, IRC codes or IS Codes shall prevail. Where they are silent or are not specific sound engineering practices shall be adopted as approved by Engineer and his decision will be final and binding on the contractor.

For the work of embankment (including filling and back filling), sub grade and pavement construction of subsequent layer of same or other material over the finished layer shall be done after due tests and obtaining permission from Engineer. Similar permission from Engineer shall be obtained in respect of other items of works prior to proceeding with the next stage of construction as stipulated in different codes/ standards. These specifications are as required by Engineer.

#### DEFECTIVE MATERIALS

All materials which Engineer or his representative has determined as not conforming

to requirement of the contract will be rejected, whether in place or not. They shall be removed immediately from site as directed. Materials, which have been found defective and which have been subsequently corrected shall not be used in the work unless approval is accorded in writing by Engineer. Upon failure of the contractor to comply with any order of Engineer/ his representative given under this clause. Engineer/ his representative shall have authority to cause the removal of rejected material and to recover the removal cost thereof from any money due to the contractor.



## IMPORTED MATERIALS

At the time of submission of tenders, the contractor shall furnish a list of materials/ finished products manufactured, produced or fabricated outside India, which he proposes to use in the work. The contractor shall not be entitled to extension of time for delays caused in supply due to acts or events occurring outside India and it shall be the contractor's responsibility to make timely delivery to the job site of all such materials obtained from abroad.

Materials imported from outside India shall conform to relevant specifications and tests indicated in the specifications or standards referred to in the contracts and approved by Engineer. Tenderers should list such materials in their tenders.

In case where materials finished products are not covered by specifications in the contract, the details of specifications proposed to be followed and the testing procedure as well as laboratories/ establishments where tests are to be carried out shall be specifically brought out in the offer and agreed to by Engineer.

The contractor shall furnish a certificate of compliance of the tests carried out to Engineer. In addition, certified mill test reports clearly identifying the lots of materials shall be furnished at the contractor's cost.

The contractor shall engage a quality graduate Civil Engineer for supervision of the work and quality control at site failing which a penalty of Rs.10,000.00 (Ten thousand only) per month will be recovered from on account bills payable to him).



**SPECIAL CONDITIONS OF CONTRACT**  
**QUALITY CONTROL FOR CONCRETE**

- 1.1 28 days strength of various grades of concrete referred in various schedules shall be as under.
- 1.2 Test during actual execution of Work (Works Tests):
- 1.2.1. Minimum frequency of samples of concrete and criteria for acceptance shall be as per Table given below :

Minimum No. of specimens taken from same shift work		Minimum frequency		Criteria for acceptance
7 days Compressive strength an optional test if desired	28 days compressive strength test	Qty. of concrete in the Work M <sup>3</sup>		
3	3	1-50 51 & above	1. 1 plus one sample for each additional 50 M3 or part there of Note : I) At least one sample shall be taken from each shift or as directed by Engineer. II) For each sample 6 cubes shall be cast, 3 for testing at 7 days & 3 at 28 days.	As per clause 8.7.6 of IRS concrete Bridge Code, 1997, with all up to date correction slips.

1.2 **ACCEPTANCE CRITERIA FOR CONCRETE**

Acceptance criteria for concrete has been stipulated vide clause 6 & 15 of IS-456/2000 (CODE OF PRACTICE FOR PLAIN & REINFORCED CONCRETE). Therefore for all concreting works, the acceptance criteria should be followed as per IS-456/2000

NORTHEASTFRONTIERRAILWAY

\_\_\_(Construction Organisation)

ANNEXURE-I

----- RAILWAY

CONTRACT AGREEMENT OF WORKS

CONTRACT AGREEMENT NO. \_\_\_\_\_ DATED \_\_\_\_\_

ARTICLES OF AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_  
20\_\_\_\_ between President of India acting through the Railway Administration  
hereafter called the "Railway" of the one part and \_\_\_\_\_ herein  
after called the "Contractor" of other part.

WHEREAS the Contractor has agreed with the Railway for performance of the  
works \_\_\_\_\_ set forth in the Bill(s) of Quantities hereto annexed upon  
the Standard General Conditions of Contract, updated with correction slips issued up to  
date of inviting tender or as otherwise specified in the tender documents and the  
Specifications of \_\_\_\_\_ updated with correction slips issued up to date of  
inviting tender or as otherwise specified in the tender documents and the applicable  
Standard Schedule of Rates (SSOR) of \_\_\_\_\_ updated with correction slips issued  
up to date of inviting tender or as otherwise specified in the tender documents and the  
Special Conditions and Special Specifications, if any and in conformity with the drawings  
here-into annexed AND WHEREAS the performance of the said works is an act in which  
the public are interested.

NOW THIS INDENTURE WITNESSETH that in consideration to the payments  
to be made by the Railways, the Contractors will duly perform the said works in the said  
Bill(s) of Quantities set forth and shall execute the same with great promptness, care and  
accuracy in a workman like manner to the satisfaction of the Railway and will complete  
the same in accordance with the said specifications and said drawings and said conditions  
of contract on or before the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_ and will maintain the said  
works for a period of \_\_\_\_\_ Calendar months from the certified date of their  
completion and will observe, fulfill and keep all the conditions therein mentioned (which  
shall be deemed and taken to be part of this contract, as if the same have been fully set  
forth herein), AND the Railway, both hereby agree that if the Contractor shall duly  
perform the said works in the manner aforesaid and observe and keep the said terms and  
conditions, the Railway will pay or cause to be paid to the Contractor for the said works  
on the final completion thereof the amount due in respect thereof at the rates specified in  
the Bill(s) of Quantities hereto annexed.

Contractor \_\_\_\_\_ (Signature)      Railway: Designation \_\_\_\_\_

Address \_\_\_\_\_ (For President of India)

Date \_\_\_\_\_

Date \_\_\_\_\_

Signature of **Witnesses** (to Signature of Contractor) with address:

**Witnesses:**

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_