



**NORTH EASTERN RAILWAY**

**IZZATNAGAR**

**START OF TENDER DOCUMENT**

**ELECTRICAL (G.) DEPARTMENT**

**E-TENDER DOCUMENT**

**of**

**e-Tender No. IZN-Elect-OT-21-2026**

**NAME OF WORK: - General Electrification work in connection of construction of S&T service building at interlocked LC gate (Total = 19 Nos. LC).**

***Office of the  
Senior Divisional Electrical Engineer (G.)  
N.E. Railway, Izzatnagar***

**TENDER DOCUMENT FOR THE ABOVE e-TENDER CONSISTS OF FOLLOWING:-**

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**From:- Senior Divisional Electrical Engineer (G.),  
NORTH EASTERN RAILWAY, IZZATNAGAR**

## TOP SHEET

1	E- Tender No.:	IZN-Elect-OT-21-2026
2	Bidding System:	Single Packet
3	Description of Work:	General Electrification work in connection with Provision of 16 bedded RPF Barrack at Hathras City (HTC), Raising of Medium level PF to High level PF at MEU & MSN stations under ADEN/MRT, Raising of Medium level PF to High level PF at MHA, AUL & RKN stations under ADEN/MRT and Extension of PF-1 & 2 at MRT station of IZN Division.
4	Approximate Value of Tender:	As per IREPS NIT
5	Bid Security	As per IREPS NIT
6	Payment of Bid Security	<p>In respect of e-tendering, payment of Bid Security shall be deposited either in cash through e-payment gateway or submitted as Bank Guarantee bond from a scheduled bank of India. The bank guarantee bond shall be as per Annexure- 3 of Chapter-2 and shall be valid for a period of 90 days beyond the bid validity period. The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document before closing date for submission of bids (i.e. excluding the last date of submission of bids). Tender must be accompanied by a Bid Security as mentioned in tender documents, failing which the tender shall be summarily rejected.</p> <p>The stamp duty payable in Bank Guarantee for Bid Security and Performance Guarantee differs from State/Union of Territory to State/Union of Territory as per the provisions of stamp duty Act applicable in that particular State/Union of Territory on the date of execution of Bank Guarantee. The value of Non Judicial Stamp paper for execution of the BG to be submitted shall be higher of the following two values: - (a) Stamp value as applicable in State/Union Territory from where Stamp paper is purchased. (b) Stamp value as applicable in the state of Uttar Pradesh. Stamp Duty applicable in the state of Uttar Pradesh for submission of Bank Guarantee for Bid Security and Performance Guarantee is Rs. Five per thousand or part thereof, subjected to maximum value of Rs. Ten Thousand (Rs.10,000.00).</p>
7	Senior Divisional Electrical Engineer (G.),Unit	Senior Divisional Electrical Engineer (G.)/IZN/NER
8	Izzatnagar unit	Divisional Railway Manager/IZN/NER
9	Permissibility of Participation of Joint Venture Firms	No
10	Applicability of Price Variation Clause	No
11	Similar Nature of work	Mentioned in Chapter-03
12	Completion period	<b>As per Published tender NIT</b>
13	Maintenance period	12 Months except specified items as per clause 1.6 of Chapter-08
14	Mobilization advance	No
15	Incentive bonus	No
16	Stage payment on supply of steel	Not applicable
17	Estimate No. and Allocation No.	(1) Estimate No. C/DRM/Elect/IZN/01 of 2026-27 as per memorandum No. E/218/PH-29/E-3 Dt.24.04.2026 (26-2946)
18	Location of work [District/State]	Izzatnagar Division {Uttar Pradesh}
19	Special Instructions, if any	-
20	Date and Time of closing	As per IREPS NIT
21	Pre-Bid Conference date & venue	--
22	Postal Address for correspondence	Office of the Senior Divisional Electrical Engineer (G.), North Eastern Railway, Izzatnagar (U.P.)- 243122.

## CHAPTER-1

### GENERAL OBLIGATIONS

- 1.0 All mandatory fields marked with [\*] have to be filled in by the bidders.**
- 2.0** The E-Tender documents shall consist of: -
- (a) Annexed Document to the Tender Document which includes [i] Top Sheet], [ii] General Obligations [Chapter-1], [iii] Instructions to Tenderer[s] for the Guidance of Engineers and Contractors [Chapter-2], [iv] Tender Form first Sheet [Annexure- 1 of Chapter-2], [v] Format for Certificate to be submitted by Tenderer along with the Tender document [Annexure 2 of Chapter-2], [vi] Bank guarantee proforma for Bid Security [Annexure-3 of Chapter-2], [vii] Eligibility Criteria [Chapter-3], [viii] Compliance of Technical Eligibility criteria [Annexure 1 of Chapter-3],[ix] Compliance of Financial Eligibility criteria [Annexure-2 of Chapter-3], [x] Tender's Credentials (BID CAPACITY) [Annexure 3 of Chapter-3], [xi] Experts of Conditions For Participation Tenders [Chapter-4], [xii] Guidelines for participation of Joint Venture Firms [Chapter-5], [xiii], Memorandum of Understanding (MOU) for Joint Venture Participation [Annexure 1 of Chapter-5], [xiv] Joint Venture Agreement for Joint Venture Participation [Annexure 2 of Chapter-5], [xv] Standard General Conditions of Contract [Chapter-6], [xvi] Additional Conditions of Contracts [Chapter-6A], [xvii] Document of Authorization [Annexure 4 of Chapter-6], [xviii] Request letter from Executive Branch to Accounts office for opening of LC [Annexure 5 of Chapter-6], [xix] Proforma of Guarantee Bond [Annexure 1 of Chapter-6], [xx] Proforma of Indemnity Bond [Annexure 2 of Chapter-6], [xxi] Agreement of Works [Annexure 3 of Chapter-6], [xxii] Final Supplementary Agreement [Annexure 6 of Chapter-6], [xxiii] Details of Annexure – A to M [Chapter-7 [xxiv] Additional Special Conditions of Contract i.e. (Technical Conditions) [Chapter-8] and [xxv] Schedule of Items (Rate to be quoted in this rate sheet only [Chapter-9].
  - (b) Indian Railways Standard General Conditions of Contract-2022 (Latest) with correction slips up to the date of uploading of tender.
  - (c) Indian Railways Unified Standard Specification (IRUSS-2019)/CORE SOR-2016 updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
  - (d) Techno- Commercial Offer Form.
  - (e) Financial Offer Form.
- 3.0** Before submitting the offer, please read carefully complete e-tender document including Instructions to Tenderers, Indian Railways Standard General Conditions of Contract, Special Conditions of Contract, Additional Special Conditions of Contract i.e. Technical Conditions etc. as available on the page of North Eastern Railway, Izzatnagar on the web site [www.ireps.gov.in](http://www.ireps.gov.in).
- 4.0** Your digital signature on the e-tender form will be considered as your confirmation that you have read and accepted all the conditions laid down in the documents referred in Para 3.0 above as well as schedule of tender consisting of techno-commercial offer form [including special conditions attached to E-Tender] and Financial offer form, unless specific deviation is quoted in the techno-commercial offer form.
- 5 (a) Bid Security:** In respect of e-tendering, payment of Bid Security shall be deposited either in cash through e-payment gateway on [www.ireps.gov.in](http://www.ireps.gov.in) or submitted as Bank Guarantee bond from a scheduled bank of India. The bank guarantee bond shall be as per **Annexure-3 of Chapter-2** and shall be valid for a period of 90 days beyond the bid validity period. The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document before closing date for submission of bids (i.e. excluding the last date of submission of bids). **Tender must be accompanied by a Bid Security as mentioned in tender documents, failing which the tender shall be summarily rejected.**
- (b) **Tender Form:** Tender Forms shall embody the contents of the contract documents either directly or by reference and shall be as per specimen form uploaded on [www.ireps.gov.in](http://www.ireps.gov.in). **e-Tender Forms shall be issued free of cost to all tenderers.**
- 6.0 Time of availability of tender document on website: [www.ireps.gov.in](http://www.ireps.gov.in) is divided into two parts viz, Advertisement period and offer submission period as detailed below:-**
- a) **Advertisement Period :-**Time during which all information pertaining to tender shall be available but offers cannot be submitted.
  - b) **Offer submission period: -** Fifteen days prior to opening of tender, during which tenderers can submit their offer.

- c) The prospective tenderers are advised to revisit the website: [www.ireps.gov.in](http://www.ireps.gov.in) within advertisement period to look for any changes/corrigendum issued for the tender. In the offer submission period, no changes will be issued for the tender.
- 7.0 No Manual Offers sent by Post/FAX or in person shall be accepted against such e-tenders, even if these are submitted on the firm's letter head and received in time. The manual offer uploaded as attached document shall also not be considered. All such manual offers shall be considered as in-valid offers and shall be rejected summarily without any consideration.
- 8.0 e-tender is not transferable and the same is to be submitted with digital signature by the pre-authorized personnel of the tenderer, already registered with the site.
- 9.0 If the required information asked for in the tender document is not furnished, the tender will be otherwise treated incomplete and hence may not be considered.
- 10 The on-line bidding doesn't permit submission of offer after stipulated date and time of the e-tender. Hence there is no scope for late/delayed tenders.
- 11.0 **Tender Bidding System:**  
 (i) For Works tender valuing up to Rs10 Crore, Single packet bid system shall be adopted. Suitability of lowest eligible bidder shall be evaluated in accordance to minimum eligibility/Qualifying criteria specified in Chapter-3 of Tender document  
 (ii) In case of Two Packet of bidding, after scrutinising the Techno-Commercial offer and short listing the tenderers, the Financial Bid shall be opened on a subsequent date only for those tenderers who will be qualifying Techno-Commercial Offers as per eligibility /qualifying criteria laid down. The date of opening of Financial Bid will be advised online. The Railway's decision in this regard will be final.
- 12.0 **INSTRUCTIONS TO THE TENDERER FOR TWO PACKET SYSTEM OF TENDERING**
- 12.1 The tenderer shall visit the site of work and ascertain himself the conditions of work viz. approach roads and accessibility, nature of soil/rock, availability of materials, electric power, water for work and drinking purposes, site for labour camps, stores, godown, extent of lead/lift in work, availability of skilled and unskilled labour etc. that may be encountered in the course of execution of work. In short, he/they should familiarize himself fully with the conditions at site and FURNISH A CERTIFICATE TO THIS EFFECT, in the proforma appended as **Annexure-K**.
- 12.2 Pre-bid conference will be held as per schedule mentioned in the Tender Notice of the tender. The intended bidders are advised to attend the pre-bid conference and discuss their points/clarifications etc. if any. Railway reserves the right to modify the tender documents as per the discussions held in Pre-bid conference. In that case tenderer will have to submit their bids as per the modified tender conditions as per the minutes of pre-bid conference, which would form part of tender documents, which will be available on IREPS.
- 12.3 The tender submitted by the tenderer/s will consist of TWO BIDS i.e. 'TECHNO-COMMERCIAL OFFER' and 'FINANCIAL BID'. Tenderers to note that Techno-Commercial offer and financial bid will be filled in the given proforma through IREPS only.
- 12.4 **"TECHNO-COMMERCIAL OFFER"** will be opened as per specified schedule. This bid shall contain the documents as listed below. Tenderers are requested to ensure that all such documents as listed are submitted duly filled in all respect in their technical bid failing which his/their offer is likely to be summarily rejected.
- 12.4.1 **Tenderers are compulsorily required to enclose a copy of certificate stating that all their statements/documents submitted along with bid are true and factual as per Annexure-2 of Chapter-2 of tender document. Non submission of above certificate by the bidder shall result in summarily rejection of his/their bid.**
- 12.4.2 Techno-Commercial offer shall include various documents mentioned in the tender conditions some of which are as under:-
- 12.4. Bid security in the proper form as prescribed in tender Conditions.
- 12.4.4 The documents confirming the fulfilment of eligibility criteria is laid down in the tender conditions. The document submitted as proof of fulfilling the eligibility criteria will be initially evaluated and offers not meeting the requisite eligibility criteria will be **summarily rejected** without evaluating the technical portion.  
**Documentary proof in support of Eligibility criteria financial capability.**
- (i) Compliance of Technical Eligibility criteria by the tenderer regarding execution of similar single work as per Proforma given in Annexure-1 of Chapter-3.
- (ii) Compliance of Financial Eligibility criteria by the Tenderer regarding contractual payments received during

the qualifying period i.e. during the current financial year plus previous three financial years as per Proforma given in Annexure-2 of Chapter-3.

- (iii) History Sheet of tenderer as per proforma given in Annexure –A
- (iv) Details of construction machineries, tools and plants, vehicle etc. available on hand and proposed to be utilised in work as per Proforma given in Annexure-B.
- (v) Details of technical and other personnels available on hand and proposed to be engaged as per Proforma given in Annexure-C
- (vi) Details of works completed during previous seven financial years and current year by the tenderer (s) as per Proforma given in Annexure-D.
- (iii) Details of works on hand of the tenderer(s) as per Proforma given in Annexure-E
- (iv) Declaration regarding association of railway officer(s) with tenderer(s) as per Proforma given in Annexure-F
- (v) List of court cases during previous three years as per Proforma given in Annexure-G.
- (vi) List of arbitration cases during previous three years as per Proforma given in Annexure-H.
- (vii) Broad plan of execution of this work within the stipulated completion period as per Proforma given in Annexure-I.
- (viii) Other credentials/facilities of the firm/contractor in Annexure-J.
- (ix) Declaration regarding visiting site of the work Proforma as given in Annexure-K
- (x) Constitution of Firm, Proforma given in Annexure-L.
- (xi) Details of Real Time Gross Saving (RTGS)/National Electronic Fund Transfer (NEFT) Proforma as given in **Annexure-M.**

## **12.5 (FINANCIAL BID):**

- 12.5.1 The price bid of only that tenderer/s will be opened whose technical bids are found acceptable by the Railway.
- 12.5.2 The time, date and venue of opening of price bid shall be notified to successful tenderer/s after evaluation of technical bid.
- 12.5.3 If after the scrutiny of the TECHNO-COMMERCIAL OFFER, it is found necessary to have some revision in scope and/or content, to bring the same at par with one another and in conformity with the tender conditions and specifications and such other condition as found necessary, the tenderers will be advised accordingly to clarify their technical bids to bring all the technical bids at par.
- 12.5.4 It shall also be binding on the tenderer to keep the original Techno-Commercial offer and Financial bid open and the Railway have the right to accept the original or revised technical bid and original price bids. The Railway's decision in this regard shall be final and binding on the tenderer/s.
- 12.5.5 The 'Original Financial Bids' and/or 'Revised Financial Bids' will be opened on the time, date and venue as notified in advance and advised to tenderer/s.
- 13.0 The tenderer/s may note that Railway reserve the right to either accept or reject any bid/s without assigning any reasons whatsoever and tenderer/s shall have no claim/s on this account.
- 14.0 Legal jurisdiction shall be Civil Court Bareilly.
- 15.0 All the payments for this work will be made only in Indian Rupees. Thus, Rates are to be quoted in Indian rupees only.
- 16.0 Prospective tenderer/s may contact Senior Divisional Electrical Engineer (G.), Izzatnagar, N. E. Railway for obtaining further clarifications, if required.
- 17.0 The tenderer/s is/are advised to submit all documents in one go with the offer i.e. technical bid.

## **18.0 Tender To Be Digitally Signed By Authorized Person:-**

- a) If the tender is submitted on behalf of a partnership firm, he should submit the certified copy of the partnership deed and authorization to sign the tender on behalf of partnership firm. If copies of these documents are not enclosed along with tender, the tender will be treated as having been submitted by the vender signing the tender.
- b) The tenderer whether sole proprietor, a limited company or a partnership firm if they want to act through agent or individual partner(s) should submit along with the tender, a power of attorney duly stamped and authenticated by a Public Notary or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person specifically authorizing him/them to submit the tender, sign the agreement, receive money, witness measurements, sign measurement books, compromise, settle, relinquish any claim(s) preferred by the firm and sign "No claim Certificate" and refer all or any disputes to arbitration.
- c) The Railway will not be bound by any Power of Attorney granted by the tenderer or by changes in the

composition of the firm made subsequent to the execution of the Contract. It may, however, recognize such power of Attorney and changes after obtaining proper legal advice to the satisfaction of the Railway, the cost of which will be borne by the Contractor.

Tenderer[s] should upload a scanned attested BAR CHART, activity-wise detailed programme to complete the work.

19.0 **No correspondence shall be entertained after opening of tender and any suo-moto letters or submission in regard to tender, except specifically mentioned to be submitted as per the terms of the tender or sought for by the Railway, shall be treated as Null and Void.**

20.0 **The tenderer[s] must fulfil/satisfy the following mandatory requirements:**

**MANDATORY REQUIREMENTS:**

(a) **Bid Security:** In respect of e-tendering, payment of Bid Security shall be deposited either in cash through e-payment gateway on [www.ireps.gov.in](http://www.ireps.gov.in) or submitted as Bank Guarantee bond from a scheduled bank of India. The bank guarantee bond shall be as per Annexure-3 of Chapter-2 and shall be valid for a period of 90 days beyond the bid validity period. **Tender must be accompanied by a Bid Security as mentioned in tender documents, failing which the tender shall be summarily rejected.**

**Fixed deposit receipt (FDR) will not be accepted as Bid Security for tenders invited on IREPS (e-tender portal).**

(b) **Regarding technical and financial (eligibility criteria as mentioned in Chapter -3), scanned copies of supportive documents/certificates from competent officials are to be submitted along with their offer.**

(c) **Certified copies of Partnership Deed, Power of Attorney duly stamped and authenticated by Public Notary, documents related to Joint Venture/MOU/ Consortium duly notarized should be submitted along with their offer.**

**Scanned copies of documents in support of formation/registration of the company/ firm/legal authorization of the person to deal with the tender/notarized/registered wherever required as per tender conditions are to be submitted.**

22.0 **Indian Railways Unified Standard Specification (IRUSS-2019) updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.**

23.0 **The tenderers, for carrying out any construction work must get themselves registered from the Registering Officer under Section-7 of the Building and other Construction workers' Welfare Cess Act, 1996 and rules made there to by the concerned State Govt. and submit certificate of Registration issued from the Registering Officer of the concerned State Govt.[Labour Dept]. The cess shall be deducted from the contractor's bills as per provisions of the Act. Building and other construction workers cess is applicable on the total cost of construction including the cost of material.**

24.0 **False/incomplete statement:**

Any statement/declaration made by the tenderer while uploading tender or submitted later as specifically required in the tender, if proved wrong or false or incomplete or such as to withhold any information relevant to the award of the tender, at any stage of the tender or in the event of his tender having been accepted, at any stage the contract, shall render his/their tender[s]/contract[s] liable to be cancelled /rescinded, in addition to the following:

a) If such statement is found at the tender stage, his total Earnest Money shall be forfeited.

b) In case such a statement is found at the contract stage, the conditions/rights available to the Railways under Clause 62 of the G.C.C. shall be applicable.

c) In addition to above, action of banning of business may also be taken against such tenderers including prosecution under law.

25.0 **Special Conditions:**

a. The copies of the various letters/documentary proof/statement etc. must be uploaded with e-Tender and shall be properly indexed by indicating the Annexure Nos. like Annexure-I, Annexure-2 etc. on the right hand side top corner of the same and this Annexure No. shall also be indicated in relevant column of the Annexure-A to Annexure-M supplied to the tenderer.

- b. The bidders are expected to obtain, on their own responsibility and expenses, all information which will be necessary for submitting the bid. Intending bidders may obtain clarification, if any, with regard to the tenders from the office of the concerned Divisional Railway Manager, N.E. Railway, Izzatnagar[as mentioned in the Top Sheet] on any working day during the working hours. For any further information in regard to site conditions, facilities available at the work spot etc., the bidder may contact the office of the Senior Divisional Electrical Engineer (G.), Izzatnagar, N.E. Railway, [as mentioned in the Top Sheet], on any working day during the working hours.
  - c. In addition to the information given in the prescribed form of the Technical Commercial Offer, the tenderer may also submit any additional relevant information connected with this tender if considered necessary, uploading copies of the documents relied upon.
  - d. Submission of Tender does not bind the Railway Authority for any claim of any nature whatsoever.
- 26.0** The tenderer has to submit QAP (As desired by Railway) within 15 days of issue of LOA for approval of Railway. The tenderer will have to follow the same and submit monthly statement/test report duly test checked by the Railway.
- 27.0** **Multiple L-1:** In case of more than one L1 bidders, tender may be awarded to tenderer having higher Bid Capacity. In case Bid Capacity is also the same or there is no requirement of bid capacity as per tender conditions, tenderer having done more value of similar work in last three previous financial years and the current financial year up to the date of publishing of a tender, may be selected for the award. Instructions with respect to Bid Capacity will be followed as per **Annexure-3 of chapter-3**.
- 28.0** **Tender notice:-**Sufficient notice shall be given for the submission of tenders, which in the case of large works will not be less than 21 days. The above prescribed tender notice period will be reduced from 21 days in the exceptional circumstances.

However,

- For tenders valued up to and including Rs.2 crore invited through e – tendering, the tender notice period can be reduced up to 14 days.
- For works in remote locations or of specialized nature or amount higher than Rs.50 crore, adequate tender notice period (not less than 21 days) shall be given for preparation to the potential bidders in order to ensure competitive and well informed bidding.

**29.0** **Advertisement of tender notice in newspaper- tender invited through IREPS.**

With the implementation of e-tendering in railway works contracts invited through e-procurement website (i.e. IREPS) advertisement in newspapers has also been published with following stipulation:-

- (i) Date of inviting tender on IREPS website shall be the date of publishing tender notice, if tender is published on website or the date of publication in newspaper in case tender is not published on website.
- (ii) Any instruction requiring minimum number of days for tender opening from the date of publication of tender invitation in print media/bulletin/journal shall now be the same minimum number of days required from the date of uploading on e-Procurement website (i.e. IREPS).

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## CHAPTER-2

### INSTRUCTION TO TENDERERS (ITT) FOR THE GUIDANCE OF ENGINEERS & CONTRACTORS FOR WORKS CONTRACTS MEANING OF TERMS

#### ***Highlights for tender form submission:***

- a) Submitted Power of Attorney should be duly signed by “PoA executant, attorney holder and Public Notary on each & every page”. PoA should be backed by valid Board of resolution (as applicable). In the absence of valid Power of Attorney, bid offer shall be liable to be rejected.*
- b) All tender documents, declarations, undertakings and supporting documents to be signed by authorized PoA holder. Further, bid must be submitted by Digital signature certificate of Authorized PoA holder. In case of any deviation to it, bid offer is liable to be rejected.*
- c) The work shall be carried out as per respective schedule items technical specification, explanatory note and special conditions as mentioned in tender document.*

1.0 **Applicability:** These instructions and conditions of contract shall be applicable for all the tenders and contracts of railways for execution of works as defined in GFR 2017.

1.01 **Order of Precedence of Documents:** In a 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
- 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-2019)/CORE SOR-2016 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 2019 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. IR Specifications/Guidelines updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
- x. Relevant B.I.S. Codes updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

1.1 **Interpretation:** These Instructions to Tenders and Contracts shall be read in conjunction with the Standard General Conditions of Contract which are referred to herein and shall be subject to modifications additions or suppression by Special Conditions of Contract and/or Special Specifications, if any, annexed to the Tender Forms.

1.2 **Definition:** In these Instructions to Tenders, the following terms shall have the meanings assigned hereunder except where the context otherwise requires:

- (a) “Railway” shall mean the President of the Republic of India or the administrative officers of the Railway or Successor Railway authorized to deal with any matter, which these presents are concerned on his behalf.
- (b) “General Manager” shall mean the Officer-in-Charge of the general superintendence and control of the Zonal Railway/Production Unit and shall also include Chief Administrative Officer (N.E. Railway) and shall mean and include their successors of the Successor Railway.
- (c) “Chief Engineer” shall mean the Officer-in-Charge of the Engineering Department of N. E. Railway and shall also include Chief Engineer (N.E. Railway), Chief Electrical Engineer, Chief Electrical Engineer (N.E. Railway), Chief Signal & Telecom Engineer, Chief Signal & Telecom Engineer (N.E. Railway) and shall mean and include their successors of the Successor Railway.

- (d) “Divisional Railway Manager” shall mean the Officer- in – Charge of a Division of Zonal Railway and shall mean and include Divisional Railway Manager of the Successor Railway.
  - (e) “Engineer” N.E. Railway Organizations, of Engineering, Signal & Telecom, Mechanical and Electrical Departments, i.e. the Senior Divisional Engineer/Deputy Chief Electrical 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.
  - (f) “Tenderer” shall mean the person / firm / co-operative or company whether incorporated or not who tenders for the works with a view to execute the works on contract with the Railway and shall include their representatives, successors and permitted assigns.
  - (g) “Limited Tenders” shall mean tenders invited from all or some contractors on the approved or select list of contractors with the Railway.
  - (h) “Open Tenders” shall mean the tenders invited in open and public manner and with adequate notice.
  - (i) “Works” shall mean the works contemplated in the drawings and schedules set forth in the tender forms and required to be executed according to the specifications.
  - (j) “Specifications” shall mean the Specifications for Materials and Works of the Railway as specified under the authority of the Ministry of Railways or Chief Engineer (N.E. Railway) or as amplified, added to or superseded by special specifications if any, appended to the Tender Forms.
  - (k) Standard Schedule of Rates (SSOR) shall mean the schedule of Rates adopted by the Railway, which includes-
    1. “Unified Standard Schedule of Rates of the Railway (USSOR)” i.e. the Standard Schedule of Rates of the Railway issued under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents;
    2. “Delhi Schedule Of Rates (DSR)” i.e. the Standard Schedule of Rates published by Director General/ Central Public Works Department, Government of India, New Delhi, as adopted and modified by the Railway under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
  - (l) “Drawings” shall mean the maps, drawings, plans and tracings, or prints thereof annexed to the Tender Forms.
  - (m) “Contractor’s authorized Engineer” shall mean a graduate engineer or equivalent, having more than 3 years experience in the relevant field of construction work involved in the contract, duly approved by the Engineer.
  - (n) Date of inviting tender shall be the date of publishing tender notice on IREPS website if tender is published on website or the date of publication in newspaper in case tender is not published on website.
  - (o) “Bill of Quantities” shall mean Schedule of Item(s) included in the tender document along with respective quantities.
- 1.3 Words importing the singular number shall also include the plural and vice versa where the context requires.

## **CREDENTIALS OF CONTRACTORS**

### **2. Application for Registration:**

- 2.1 Works of construction and of supply of material shall be entrusted for execution to contractors whose capabilities and financial status have been investigated and approved to the satisfaction of the Railway. A list of approved contractors shall be maintained in the Railway. The said list be revised periodically once in a year or so by giving wide publicity through advertisements etc. A contractor including a contractor who is already on the approved list shall apply to the concerned General Manager (Zonal)/Chief Administrative Officer (Zonal)/ Signal & Telecommunication Engineer/ (Zonal), Chief Electrical Engineer/ (Zonal), furnishing particulars regarding:
- (a) His position as an independent contractor specifying engineering organization available with details of partners /staff /engineers employed with qualifications and experience;
  - (b) His capacity to undertake and carry out works satisfactorily as vouched for by a responsible official or firm; details about the transport equipment’s, construction tools and plants etc. required for the work, maintained by him;
  - (c) His previous experience of works similar to that to be contracted for, in proof of which original certificates or testimonials may be called for and their genuineness verified, if needs be, by reference to the signatories thereof;

- (d) His knowledge from actual personal investigation of the resources of the area/zone or zones in which he offers to work;
- (e) His ability to supervise the work personally or by competent and duly authorized agent;
- (f) His financial position;
- 2.2 An applicant shall clearly state the categories of works and the area/zone/ division(s)/district(s) in which he desires registration in the list of approved contractors.
- 2.3 The selection of contractors for enlistment in the approved list would be done by a committee for different value of slabs as notified by Railway.
- 2.4 An annual fee as prescribed by the Railway from time to time would be charged from such approved contractors to cover the cost of sending notices to them and clerkage for tenders etc. Notices shall be sent to them on registered e-mail address and registered postal address.

#### **TENDERS FOR WORKS**

- 3. **Tender Form:** Tender Forms shall embody the contents of the contract documents either directly or by reference and shall be as per specimen form uploaded. **E-Tender Forms shall be issued free of cost to all tenderers.**
- 4. **Omissions & Discrepancies:** Should a tenderer find discrepancies in or omissions from the drawings or any of the Tender Forms or should he be in doubt as to their meaning, he should at once notify the authority inviting tenders. The tender inviting authority may, if deemed necessary, clarify the same to all tenderers. It shall be understood that every endeavour has been made to avoid any error which can materially affect the basis of tender and successful tenderer shall take upon himself and provide for the risk of any error which may subsequently be discovered and shall make no subsequent claim on account thereof.

#### **5. Bid Security:**

- 5. (1) (a) The tenderer shall be required to submit the Bid Security with the tender for the due performance with the stipulation to keep the offer open till such date as specified in the tender, under the conditions of tender. The Bid Security shall be as under:

<b>Value of the Work</b>	<b>Bid Security</b>
<b>For all works</b>	<b>2% of the estimated cost of the work</b>

Note:

- (i) The Bid Security shall be rounded off to the nearest ₹100. This Bid Security shall be applicable for all modes of tendering.
- (ii) Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as 'Startups' shall be exempted from payment of Bid Security detailed above. Such bidders have to mandatorily upload the proof thereof issued by competent authority of DIPP as well as declaration as per Annexure-1 of Chapter-2 is also to be submitted.
- (iii) Labour Cooperative Societies shall submit only 50% of above Bid Security detailed above.
- (b) It shall be understood that the tender documents have been issued to the tenderer and the tenderer is permitted to tender in consideration of stipulation on his part, that after submitting his tender he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to the Engineer. Should the tenderer fail to observe or comply with the said stipulation, the aforesaid amount shall be liable to be forfeited to the Railway.
- (c) If his tender is accepted, this Bid Security mentioned in sub para (a) above will be retained as part security for the due and faithful ful-fillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract. The Bid Security of other Tenderers shall, save as herein before provided, be returned to them, but the Railway shall not be responsible for any loss or depreciation that may happen thereto while in their possession, nor be liable to pay interest thereon.

- (2) The Bid Security shall be deposited either in cash through e-payment gateway or submitted as Bank Guarantee bond from a scheduled commercial bank of India or as mentioned in tender documents. The Bank Guarantee bond shall be as per **Annexure-3 of Chapter-2** and shall be valid for a period of 90 days beyond the bid validity period.
- (3) **In case, submission of Bid Security in the form of Bank Guarantee, following shall be ensured:**
  - i. A scanned copy of the Bank Guarantee and declaration as per Annexure-1 of Chapter-2, shall be uploaded on e-Procurement Portal (IREPS) while applying to the tender.
  - ii. The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document before closing date for submission of bids (i.e. excluding the last date of submission of bids).
  - iii. Non submission of scanned copy of Bank Guarantee with the bid on e-tendering portal (IREPS) and/or non submission of original Bank Guarantee within the specified period shall lead to summary rejection of bid.
  - iv. The Tender Security shall remain valid for a period of 90 days beyond the validity period for the Tender.
  - v. The details of the BG, physically submitted should match with the details available in the scanned copy and the data entered during bid submission time, failing which the bid will be rejected.
  - vi. The Bank Guarantee shall be placed in an envelope, which shall be sealed. The envelope shall clearly bear the identification “**Bid for the \*\*\*\*\* Project**” and shall clearly indicate the name and address of the Bidder. In addition, the Bid Due Date should be indicated on the right hand top corner of the envelope.
  - vii. The envelope shall be addressed to the officer and address as mentioned in the tender document.
  - viii. If the envelope is not sealed and marked as instructed above, the Authority assumes no responsibility for the misplacement or premature opening of the contents of the Bid submitted and consequent losses, if any, suffered by the Bidder.
  - ix. The stamp duty payable in Bank Guarantee for Bid Security and Performance Guarantee differs from State/Union of Territory to State/Union of Territory as per the provisions of stamp duty Act applicable in that particular State/Union of Territory on the date of execution of Bank Guarantee. The value of Non Judicial Stamp paper for execution of the BG to be submitted shall be higher of the following two values :- (a) Stamp value as applicable in State/Union Territory from where Stamp paper is purchased. (b) Stamp value as applicable in the state of Uttar Pradesh. Stamp Duty applicable in the state of Uttar Pradesh for submission of Bank Guarantee for Bid Security and Performance Guarantee is Rs. Five per thousand or part thereof, subjected to maximum value of Rs. Ten Thousand (Rs.10,000.00).

##### **5. Care in Submission of Tenders:**

- (a) (i) Before submitting a tender, the tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates he enters in the tender forms are adequate and all inclusive to accord with the provisions in Clause-37 of the Standard General Conditions of Contract for the completion of works to the entire satisfaction of the Engineer.
- (a)(ii) Tenderers will examine the various provisions of The Central Goods and Services Tax Act, 2017(CGST)/ Integrated Goods and Services Tax Act, 2017(IGST)/ Union Territory Goods and Services Tax Act, 2017(UTGST)/ respective state’s State Goods and Services Tax Act (SGST) also, as notified by Central/State Govt. & as amended from time to time and applicable taxes before bidding. Tenderers will ensure that full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.
- (a)(iii) The successful tenderer who is liable to be registered under CGST/IGST/UTGST/SGST Act shall submit GSTIN along with other details required under CGST/ IGST/ UTGST/SGST Act to railway immediately after the award of contract, without which no payment shall be released to the Contractor. The Contractor shall be responsible for deposition of applicable GST to the concerned authority.
- (a)(iv) In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/ SGST Act, the railway shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concerned authority.
- (b) When work is tendered for by a firm or company, the tender shall be signed by the individual legally authorized to enter into commitments on their behalf.

- (c) The Railway will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. It may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.
- 5.1 The tenderers shall submit a copy of certificate stating that all their statements / documents submitted along with bid are true and factual. Standard format of certificate to be submitted by the bidder is enclosed as Anneure-2 of Chapter-2. In addition to Anneure-2, in case of other than Company/Proprietary firm. Annexure - 2 (A) shall also be submitted by each member of a Partnership Firm/Joint Venture (JV)/ Hindu Undivided Family (HUH/Limited Liability Partnership (LLP) etc, as the case may be. Non submission of above certificate(s) by the bidder shall result in summarily rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self-attested/digitally signed by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document.

#### CONSIDERATION OF TENDERS

6. **Right of Railway to Deal with Tenders:** The Railway reserves the right of not to invite tenders for any of Railway work or works or to invite open or limited tenders and when tenders are called to accept a tender in whole or in part or reject any tender or all tenders without assigning reasons for any such action. In case if tender is accepted in part by Railway administration, Letter of Acceptance shall be issued as counter offer to the Tenderer, which shall be subject to acceptance by the Tenderer.
- 7A. **Two Packets System of Tendering:** With a view to assess the tenders technically without being influenced by the financial bids, 'Two Packets System of tendering' shall be adopted wherein tender documents provide for the same.
- 7B. **Pre Bid Conference:** Intenders having advertised value more than Rs.50 Crore or as mentioned in the tender document, Railway shall conduct Pre Bid Conference(s) with the prospective bidders.
- 7C. **Make in India Policy**” Provisions of Make in India Policy 2017 issued by Govt. of India, as amended from time to time, shall be followed for consideration of tenders.
- 7D. **Permission to Bid for a bidder from a country which shares Land boundary with India:** Any bidder from the countries sharing a land border with India will be eligible to bid in any procurement of works (including turnkey projects) only if the bidder is registered with the Competent Authority. The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT), Government of India. For interpretation of this para, Department of Expenditure, Ministry of Finance, Government of India letter F. No. 6/18 / 2019-PPD dated 23/07/2020 shall be referred.
- 7E. **Clarification of Bids:** To assist in the examination, evaluation & comparison and pre-qualification of the Tender, the Railway may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Railway shall not be entertained or considered. The Railway request for clarification and the response of the bidder in this regard shall be in writing.

However, if a Bidder does not provide clarification of its bid by the date and time communicated in the Railway request for clarification, the bid shall be evaluated as per the documents submitted along with the bid.

#### EXECUTION OF CONTRACT DOCUMENTS

7. **Execution of Contract Document:** The Tenderer whose tender is accepted shall be required to appear in person at the office of **Senior Divisional Electrical Engineer (G.), North Eastern Railway, Izzatnagar- 243122**, or concerned Chief engineer as the case may be or if tenderer is a firm or corporation, a duly authorized representative shall appear (there would be no need for appear in person if agreement is signed digitally) and execute the contract agreement within seven days of notice from Railways that the Contract Agreement is ready. Failure to do so shall constitute a breach of the agreement affected by the acceptance of the tender. The Contract Agreement shall be entered into by Railway only after submission of valid Performance Guarantee by the Contractor. In such cases the Railway may determine that such tenderer has abandoned the contract and there upon his tender and acceptance thereof shall be treated as cancelled and the Railway shall be entitled to forfeit the full amount of the **Bid Security** and other dues payable to the Contractor under this contract. The failed Contractor shall be debarred from participating in the re-tender for that work.
8. **Form of Contract Document:** Every contract shall be complete in respect of the document it shall so constitute. Not less than 2 copies of the contract document shall be signed by the competent authority and the Contractor and one copy given to the Contractor. (There would be no need of signing two copies if agreement is signed digitally).

- (a) For contracts for specific works, the contract document required to be executed by the tenderer whose tender is accepted shall be an agreement as per specimen form **Annexure-3 of Chapte-6.**
9. **TENDER FORM (Second Sheet)**
1. **Instructions to Tenderers and Conditions of Tender:** The following documents form part of Tender / Contract:
- (a) Tender Forms – First Sheet and Second Sheet (Annexure-1 of chapter-2 attached)
  - (b) Special Conditions/Specifications (enclosed)
  - (c) Bill(s) of quantities (enclosed)
  - (d) Standard General Conditions of Contract and Standard Specifications (Works and Materials) of Indian Railways as amended/corrected up to latest correction slips, copies of which can be seen in or obtained from the office of the **Senior Divisional Electrical Engineer (G.), North Eastern Railway, Izzatnagar-243122** on payment of prescribed charges.
  - (e) Standard Schedule of Rates (SSOR) as amended / corrected upto latest correction slips, copies of which can be seen in or obtained from the office of the **Senior Divisional Electrical Engineer (G.), North Eastern Railway, Izzatnagar-243122** on payment of prescribed charges.
  - (f) All general and detailed drawings pertaining to this work which will be issued by the Engineer or his representatives (from time to time) with all changes and modifications.
2. **Drawings for the Work:** The Drawing for the work can be seen in or obtained from the office of the **Senior Divisional Electrical Engineer (G.), North Eastern Railway, Izzatnagar-243122** at any time during the office hours. The drawings are only for the guidance of Tenderer(s). Detailed working drawings (if required) based generally on the drawing mentioned above, will be given by the Engineer or his representative from time to time.
3. The Tenderer(s) shall quote his / their rates as a percentage above or below the Standard Schedule of Rates (SSOR) as applicable except where he/they are required to quote item rates and must tender for all the items shown in the Bill(s) of Quantities attached. The quantities shown in the attached Bill(s) of Quantities are given as a guide and are approximate only and are subject to variation according to the needs of the Railway. The Railway does not guarantee work under each item of the Bill(s) of Quantities. The tenderer(s) shall quote rates / rebates only at specified place in Tender Form supplied by Railway. Any revision of rates / rebates submitted (quoted) through a separate letter whether enclosed with the bid (Tender Form) or submitted separately or mentioned elsewhere in the document other than specified place shall be summarily ignored and will not be considered.
4. Tenders containing erasures and / or alterations of tender documents are liable to be rejected. Any correction made by tender(s) in his/their entries must be attested by him / them.
5. The works are required to be completed within a period specified in tender documents from the date of issue of acceptance letter.
6. **Bid Security:**
- (a) Subject to exemptions provided under Para 5(1) (a) of Chapter-2 of this document, the tender must be accompanied by a Bid Security as mentioned in tender documents, failing which the tender shall be summarily rejected. (**Annexure-1 of Chapter-2 is also to be submitted**).
  - (b) The Tenderer(s) shall keep the offer open for a minimum period of 60 days (in case of two packet system of tendering 90 days) from the date of closing of the Tender. It is understood that the tender documents have been issued to the Tenderer(s) and the Tenderer(s), is / are permitted to tender in consideration of the stipulation on his / their part that after submitting his / their tender subject to the period being extended further, if required by mutual agreement from time to time, he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to the Railway. Should the tenderer fail to observe or comply with the foregoing stipulation, the amount deposited or Bank guarantee bond submitted as Bid Security for the due performance of the above stipulation, shall be forfeited to the Railway.
  - (c) If his tender is accepted,
    - (i) The Bid Security mentioned in sub Para (a) above deposited in cash through e-payment gateway will be retained as part security for the due and faithful fulfilment of the contract in terms of Clause 16 of the

Standard General Conditions of Contract;

- (ii) The Bid Security mentioned in sub para(a) above submitted as Bank guarantee bond, will be encashed as part security for the due and faithful fulfilment of the contract in terms of Clause 16 of the Standard General Conditions of Contract.

The Bid Security of other Tenderers shall, save as herein before provided, be returned to them, but the Railway shall not be responsible for any loss or depreciation to the Bid Security that may happen thereto while in their possession, nor be liable to pay interest thereon.

- (d) In case Contractor submits the Term Deposit Receipt/Bank Guarantee Bond towards either the Full Security Depositor the Part Security Deposit equal to or more than Bid Security, the Railway shall return the Bid Security so retained as per sub para(c) above, to the Contractor.
7. **Rights of the Railway to deal with Tender:** The authority for the acceptance of the tender will rest with the Railway. It shall not be obligatory on the said authority to accept the lowest tender or any other tender, and tenderer(s) shall neither demand any explanation for the cause of rejection of his/ their tender nor the Railway to assign reasons for declining to consider or reject any particular tender or tenders.
  8. If the tenderer(s) deliberately gives / give wrong information in his / their tender or creates / create circumstances for the acceptance of his / their tender, the Railway reserves the right to reject such tender at any stage.
  9. If any partner(s) of a partnership firm expires after the submission of its tender or after the acceptance of its tender, the Railway shall deem such tender as cancelled/contract as terminated under clause 61 of the Standard General Conditions of Contract, unless the firm retains its character as per partnership agreement. If a sole proprietor expires after the submission of tender or after the acceptance of tender, the Railway shall deem such tender as cancelled / contract as terminated under clause 61 of the Standard General Conditions of Contract.

## NORTH EASTERN RAILWAY

## TENDER FORM (First Sheet)

Tender No. \_\_\_\_\_

Name of Work \_\_\_\_\_

To

The President of India

Acting through the \_\_\_\_\_ Railway

I/We \_\_\_\_\_ have read the various conditions to tender attached hereto and agree to abide by the said conditions. I/We also agree to keep this offer open for acceptance for a period of \_\_\_\_\_ days from the date fixed for closing of the tender and in default thereof, I/We will be liable for forfeiture of my/our "Bid Security". I/We offer to do the work for \_\_\_\_\_ Railway, at the rates quoted in the attached bill(s) of quantities and hereby bind myself/ourselves to complete the work in all respects within \_\_\_\_\_ months from the date of issue of letter of acceptance of the tender.

2. I/We also hereby agree to abide by the Indian Railways Standard General Conditions of Contract, with all correction slips up-to-date and to carry out the work according to the Special Conditions of Contract and Specifications of materials and works as laid down by Railway in the annexed Special Conditions/Specifications, Standard Schedule of Rates (SSOR) with all correction slips up-to-date for the present contract.

3. A Bid Security of ₹ \_\_\_\_\_ has already been deposited online/submitted as Bank Guarantee bond. Full value of the Bid Security shall stand forfeited without prejudice to any other right or remedies in case my/our Tender is accepted and if:

- (a) I/We do not submit the Performance Guarantee within the time specified in the Tender document;
- (b) I/We do not execute the contract documents within seven days after receipt of notice issued by the Railway that such documents are ready; and
- (c) I/We do not commence the work within fifteen days after receipt of orders to that effect.

4. (a) I/We am/are a Startup firm registered by .....Department of Industrial Policy and Promotion (DIPP) and my registration number is ..... valid upto.....(Copy enclosed) and hence exempted from submission of Bid Security.

5. We are a Labour Cooperative Society and our Registration No. is ..... with .....and hence required to deposit only 50% of Bid Security.

6. Until a formal agreement is prepared and executed, acceptance of this tender shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the letter of acceptance of my/our offer for this work.

Signature of witnesses:

(1)

Signature of Tenderer (s)

(2)

Date .....

Address of Tenderer(s)



**FORMAT FOR CERTIFICATE TO BE SUBMITTED / UPLOADED BY TENDERER ALONGWITH THE TENDER DOCUMENTS**

I.....(*Name and designation*)\*\*appointed as the attorney/authorized signatory of the tenderer (including its constituents),

M/s.....(hereinafter called the tenderer) for the purpose of the Tender documents for the work of .....as per the tender No.....of .....(*Railway*)\*\*, do hereby solemnly affirm and state on the behalf of the tenderer including its constituents as under:

1. I/we the tenderer (s) am/are signing this document after carefully reading the contents.
2. I/We the tenderer(s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded the tender documents from Indian Railway website [www.ireps.gov.in](http://www.ireps.gov.in). I/we have verified the content of the document from the website and there is no addition, no deletion or no alteration to the content of the tender document. In case of any discrepancy noticed at any stage i.e. evaluation of tenders, execution of work or final payment of the contract, the master copy available with the railway Administration shall be final and binding upon me/us.
4. I/we declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. **I/We also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.**
6. **I/We declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.**
7. I/we certify that I/we the tenderer(s) is/are not blacklisted or debarred by Railways or any other Ministry/Department of Govt. of India from participation in tender on the date of submission of bids, either in individual capacity or as a HUF/ member of the partnership firm/LLP/JV/Society/Trust.
8. I/we understand that if the contents of the certificate submitted by us are found to be forged/false at any time during process for evaluation of tenders, it shall lead to forfeiture of the Bid Security and may also lead to any other action provided in the contract including banning of business for a period of upto two year. Further, I/we (*insert name of the tenderer*) \*\*.....and all my/our constituents understand that my/our offer shall be summarily rejected.
9. I/we also understand that if the contents of the certificate submitted by us are found to be false/forged or incorrect at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of Bid Security/ Security Deposit and Performance guarantee and may also lead to any other action provided in the contract including banning of business for a period of upto two year.
10. I/We have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India and certify that I am/We are not from such a country or, if from such a country, have been registered with the competent Authority. I/We hereby certify that I/we fulfill all the requirements in this regard and am/are eligible to be considered (evidence of valid registration by the competent authority is enclosed)

SEAL AND SIGNATURE  
OF THE TENDERER

Place:  
Dated:

\*\*The contents in Italics are only for guidance purpose. Details as appropriate are to be filled in suitably by tenderer.

**This certificate is to be given by each member of JV or Partners of Partnership firm/LLP/etc**

**(This certificate is to be given by attorney/authorized signatory/each member of Partnership firm/ Joint Venture (JV)/ Hindu Undivided Family (HUF)/Limited Liability Partnership (LLP) etc.)**

I/We. . . . .(Name), attorney/authorized signatory of the----- (constituent firm/constituent partner) and member/partner of the .....(tendering firm) hereby solemnly affirm and state as under:

1. I/we certify that .....(constituent firm/constituent partner) is/are not blacklisted or debarred by Railways or any other Ministry/Department of Govt. of India from participation in tender on the date of submission of bids, either in individual capacity or as a HUF/ member of the partnership firm/LLP/JV/Society/Trust.

2. I/We have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India and certify that I am/we are not from such a country or, if from such a country, have been registered with the competent Authority.

I/we hereby certify that I/we fulfill all the requirements in this regard and am/are eligible to be considered (evidence of valid registration by the competent authority is enclosed),

SEAL AND SIGNATURE  
OF THE CONSTITUENT FIRM /  
CONSTITUENT PARTNER

Place:

Dated:

\*\*\*\*\*

(Bid Security)

Bank Guarantee Bond from any scheduled commercial bank of India

*(On non-judicial stamp paper, which should be in the name of the Executing Bank).*

Name of the Bank: -----

President of India,

Acting through Senior Divisional Electrical Engineer (G.),  
N.E. Railway, Izzatnagar.

Beneficiary: FA&CAO/N.E. Railway, Gorakhpur.

Date:.....

Bank Guarantee Bond No.:

Date:-----

In consideration of the President of India acting through *(Designation & address of Contract Signing Authority)*,  
..... Railway,....., .... (hereinafter called "The Railway") having invited the bid for \_\_\_\_\_ through  
Notice inviting tender (NIT) No.,\_\_\_\_\_, We have been informed that . . . . *[Insert name of the  
Bidder]*..... (hereinafter called "the Bidder") intends to submit its bid (hereinafter called "the Bid").

WHEREAS, the Bidder is required to furnish Bid Security for the sum of *[Insert required Value of Bid Security]*, in the  
form of Bank Guarantee, according to conditions of Bid.

AND

WHEREAS, .....*[Insert Name of the Bank]*, with its Branch .....*[Insert Address]* having its Headquarters office  
at..... *[Insert Address]*, hereinafter called the **Bank**, acting through .....*[Insert Name and Designation of  
the authorised persons of the Bank]*, have, at the request of the Bidder, agreed to give guarantee for Bid Security as  
hereinafter contained, in favour of the Railway:

1. KNOW ALL MEN that by these present that I/We the undersigned *[Insert name(s) of authorized representatives of the Bank]*, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee to pay to the Railway full amount in the sum of *[Insert required Value of Bid Security]* as above stated.
2. The Bank undertakes to immediately pay on presentation of demand by the Railway any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Railway on the Bank shall be final, conclusive and binding, absolute and unequivocal on the Bank notwithstanding any disputes raised/pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Bidder or Bank.
3. The Bank shall pay the amount as demanded immediately on presentation of the demand by Railway without any reference to the Bidder and without the Railway being required to show grounds or give reasons for its demand of the amount so demanded.
4. The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Bidder.
5. The Bank agrees that no change, addition, modifications to the terms of the Bid document or to any documents, which have been or may be made between the Railway and the Bidder, will in any way absolve the Bank from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification made by Railway at any time.
6. This guarantee will remain valid and effective from.....*[insert date of issue]* till.....*[insert date, which should be minimum 90 days beyond the expiry of validity of Bid]*. Any demand in respect of this Guarantee should reach the Bank within the validity period of Bid Security.
7. The Bank Guarantee is unconditional and irrevocable.
8. The expressions Bank and Railway herein before used shall include their respective successors and assigns.
9. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the Railway. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No.758.

10. 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

11. The Guarantee shall be valid in addition to and without prejudice to any other security Guarantee(s) of Bidder in favour of the Railway. The Bank, under this Guarantee, shall be deemed as Principal Debtor of the Railway.

Date .....

Place.....

Bank's Seal and authorized signature(s)

*[Name in Block letters]* .....

*[Designation with Code No.]*.....

*[P/Attorney]* No.

Witness:

- 1      1      Signature, Name & Address & Seal
- 2      2      Signature, Name& address & Seal

Bank's Seal

*[P/Attorney]*No.

**Note:** All italicized text is for guidance on how to prepare this bank guarantee and shall be deleted from the final document

**CHAPTER-3**  
**ELIGIBILITY CRITERIA**

1.0 Contractors who have adequate experience and resources to adhere to the specifications and complete schedule should participate in this tender.

2.0. **Eligibility criteria for participation in the Tender:** - Tenderer[s] must fulfil/satisfy the following eligibility criteria for participating in this tender and for consideration of their offers.

2.1 **Tenderer should have valid "A" class electrical contractor license issued by electrical inspector to state government and submit it along with the Bid offer. If "A" class electrical contractor license has been expired, tenderer should also submit the receipt of renewal electrical contractor license issued by electrical inspector to state government, along with bid offer. At the time of contract agreement, contractor must submit valid "A" class electrical contractor license issued by electrical inspector to state government. If tenderer have not submitted the valid "A" class electrical contractor license/receipt of renewal for electrical contractor license, the offer will be summarily rejected.**

2.2 **Financial Eligibility Criteria:**

The tenderer must have minimum average annual contractual turnover of V/N or "V" whichever is less; where  
V= Advertised value of the tender in crores of Rupees

N= Number of years prescribed for completion of work for which bids have been invited.

The average annual contractual turnover shall be calculated as an average of "total contractual payments" in the previous three financial years, as per the audited balance sheet. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.

The tenderers shall submit requisite information as per **Annexure-2 of Chapter-3**, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

2.3. **Technical Eligibility Criteria:-**

(a) The tenderer must have successfully completed or substantially completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

- (i) Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, or
- (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of the tender, or
- (iii) One similar work each costing not less than the amount equal to 60% of advertised value of the tender.

(b) (i) **In case of tenders for composite works** (e.g. works involving more than one distinct component, such as Civil Engineering works, S&T works, Electrical works, OHE works etc. and in the case of major bridges – substructure, superstructure etc.), tenderer must have successfully completed or substantially completed any of the following categories of work(s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

- (i) Three similar works each costing not less than the amount equal to 30% of advertised value of each component of tender, or
- (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of each component of tender, or
- (iii) One similar work each costing not less than the amount equal to 60% of advertised value of each component of tender.

**Note for b (1):** Separate completed works of minimum required values shall also be considered for due fulfilment of technical eligibility criteria for different components.

**(b)(2)** In such cases, what constitutes a component in a composite work shall be clearly pre-defined with estimated tender cost of it, as part of the tender documents without any ambiguity.

**(b)(3)** To evaluate the technical eligibility of tenderer, only components of work as stipulated in tender documents for evaluation of technical eligibility, shall be considered. The scope of work covered in other remaining components shall be either executed by tenderer himself if he has work experience as mentioned in clause 7 of the Standard General Conditions of Contract or through subcontractor fulfilling the requirements as per clause 7 of the Standard General Conditions of Contract or jointly i.e., partly himself and remaining through subcontractor, with prior approval of Chief Engineer in writing.

However, if required in tender documents by way of Special Conditions, a formal agreement duly notarised, legally enforceable in the court of law, shall be executed by the main contractor with the subcontractor for the component(s) of work proposed to be executed by the subcontractor(s), and shall be submitted along with the offer for considering subletting of that scope of work towards fulfilment of technical eligibility. Such subcontractor must fulfil technical eligibility criteria as follows:

The subcontractor shall have successfully completed at least one work similar to work proposed for subcontract, costing not less than 35% value of work to be Subletted, in last 5 years, ending last day of month previous to the one in which tender is invited through a works contract.

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

In case after award of contract or during execution of work it becomes necessary for contractor to change subcontractor, the same shall be done with subcontractor(s) fulfilling the requirements as per clause 7 of Standard General Conditions of Contract, with prior approval of Chief Engineer in writing.

**Note for Item 2.3:**

Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organisation, work experience certificate issued by Public listed company 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, incorporated/registered at least 5 years prior to the date of closing of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.

In case tenderer submits work experience certificate issued by public listed company, the tenderer 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.

**\*Similar nature of work means: -**

Following works will be considered similar work: -

- 1) Electrification of service building.
- 2) Electrification of staff quarters.
- 3) Electrification of Offices.
- 4) Electrification of road and colony lighting.
- 5) Rewiring of quarters and service buildings.
- 6) Earthing arrangement (plate and pipe earthing) for Quarters, service buildings, LT/HT Panels etc.
- 7) Installation, Testing and commissioning of Electrical sub-station.
- 8) Laying of HT cables.
- 9) Laying of LT cables.

**2.4 Bid Capacity:** The tender/technical bid will be evaluated based on bid capacity formula detailed as **Annexure-3 of Chapter-3**. The list of works in progress should be submitted as per **Annexure-E**.

**2.5** No Technical and Financial credentials are required for tenders having value up to Rs 50 lakh.

**2.6** Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under:

The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India or entity authorized by RBI to do so for the relevant date or immediately previous date for which rates have been published. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date or immediately previous date for which rates have been published.

**[Explanation for Para 2.0 above of the tender including Para 2.1 to 2.6 - Eligibility Criteria:**

- 1 Substantially Completed Work means an ongoing work in which payment equal to or more than 90% of the present contract value (excluding the payment made for adjustment of Price variation (PVC), if any) has been made to the contractor in that ongoing contract and no proceedings of termination of contract on Contractor's default has been initiated. The credential certificate in this regard should have been issued not prior to 60 days of date of invitation of present tender.

2. In case a work is started prior to 07 (seven) years, ending last day of month previous to the one in which tender is invited, but completed in last 07 (seven) years, ending last day of month previous to the one in which tender is invited, the completed work shall be considered for fulfilment of credentials.
3. If a work is physically completed and completion certificate to this extent is issued by the concerned organization but final bill is pending, such work shall be considered for fulfilment of credentials.
4. In case of completed work, the value of final bill (gross amount) including the PVC amount (if paid) shall be considered as the completion cost of work. In case final bill is pending, only the total gross amount already paid including the PVC amount (if paid) shall be considered as the completion cost of work.  
  
In case of substantially completed work, the total gross amount already paid including the PVC amount (if paid), as mentioned in the certificate, shall be considered as the cost of substantially completed work.
5. If a bidder has successfully completed a work as subcontractor and the work experience certificate has been issued for such work to subcontractor by a Govt. Organization or public listed company as defined in Note for item No.2.1 above, the same shall be considered for the purpose of fulfilment of credentials.
6. In case a work is considered similar in nature for fulfilment of technical credentials, the overall cost including the PVC amount (if paid) of that completed work or substantially completed work, shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.
7. In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of  $0.3 \times 0.2$  \* value of the work done in the previous entity. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.
8. In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm (e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.
9. In case of existing partnership firm if any other partner(s) joins the firm without any modification in the name and PAN/TAN no. of the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.
10. Any partner in a partnership firm cannot use or claim his credentials in any other firm without leaving the partnership firm i.e., In a partnership firm of A&B partners, A or B partner cannot use credentials of partnership firm of A&B partners in any other partnership firm or propriety firm without leaving partnership firm of A&B partners.
11. In case a partner in a partnership firm is replaced due to succession as per succession law, the proportion of credentials of the previous partner will be passed on to the successor.
12. If the percentage share among partners of a partnership firm is changed, but the partners remain the same, the credentials of the firm before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, in case a partner of partnership firm retires without taking away any credentials from the firm, the credentials of partnership firm shall remain the same as it is without any change in their value.
13. In a partnership firm "AB" of A&B partners, in case A also works as propriety firm "P" or partner in some other partnership firm "AX", credentials of A in propriety firm "P" or in other partnership firm "AX" earned after the date of becoming a partner of the firm AB shall not be added in partnership firm AB.
14. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.
15. *In case company A is merged with company B, then company B would get the credentials of company A also.*

**3. Tenderer Credentials:**

Documents testifying tenderer's previous experience and financial status should be produced along with the tender.

Tenderer(s) who is / are not borne on the approved list of the Contractors of N.E. Railway shall submit along with his / their tender:

- (i) Certificates and testimonials regarding contracting experience for the type of job for which tender is invited with list of works carried out in the past –**Annexure-1 of chapter-3**
- (ii) Certificates which may be an attested Certificate from the client, Audited Balance Sheet duly certified by the Chartered Accountant etc regarding contractual payments received in the past –**Annexure-2 of Chapter-3**.
- (iii) The list of Plant & Machinery available on hand and proposed to be inducted and hired for the tendered work–**Annexure-B** and the list of personnel / organization on hand and proposed to be engaged for the tendered work –**Annexure-C**.
- (iv) in case of other company/Proprietary firm, In addition to declaration of Annexure-2/ Chapter-2, Annexure-2A declaration shall also be submitted by the each member of A partnership firm/Joint Venture (JV)/Hindu Undivided Family (HUF)/Limited Liability Partnership (LLP) etc. as the case may be. Non submission of a copy of certificate by the bidder shall result in **summarily rejection of his/their bid**. It shall be mandatorily incumbent upon the tenderer to identify state and submit the supporting documents duly self-attested/digitally signed by which they/he are/is qualifying the Qualifying Criteria mentioned in the Tender Document.
- (v) The Railway reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the Railway, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification, by the Railway shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the Railway there under.
- (vi) (a) In case of any information submitted by tenderer is found to be false forged or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender Earnest Money Deposit besides banning of business for a period of upto two years.  
(b) In case of any information submitted by tenderer is found to be false forged or incorrect after the award of contract, the contract shall be terminated. Bid Security, Performance Guarantee and Security Deposit available with the railway shall be forfeited. In addition, other dues of the contractor, if any, under this contract shall be forfeited and agency shall be banned for doing business for a period of upto two years.

**4.0 Non-compliance with any of the conditions set forth therein above is liable to result in the tender being rejected.**

\*\*\*\*\*



**NORTH EASTERN RAILWAY**  
**[N.E. RAILWAY ORGANISATION]**

**ANNEXURE –1 of Chapter-3'**

**Compliance of Technical Eligibility criteria by the tenderer regarding execution of similar single work of advertised tender value during last seven years ending last day of month previous to the one in which tender is invited.**

1. Name and style of the contractor with address [Present tenderer]
2. Name and scope of the work executed
3. Authority who have awarded the contract.
4. Full address of the authority under whom the contract was executed.
5. Whether it is a Govt/Railway/Semi Govt organization.
6. Contractual Agreement No. and date.
7. Completed Value of the contract.

[a] Original value of the contract.

**Technical Eligibility Criteria:** The tenderer must have successfully completed or substantially completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

- Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, or
- Two similar works each costing not less than the amount equal to 40% of advertised value of the tender, or
- One similar work each costing not less than the amount equal to 60% of advertised value of the tender.

(b) (i) In case of tenders for composite works (e.g. works involving more than one distinct component, such as Civil Engineering works, S&T works, Electrical works, OHE works etc. and in the case of major bridges – substructure, superstructure etc.), tenderer must have successfully completed or substantially completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

- Three similar works each costing not less than the amount equal to 30% of advertised value of each component of tender, or
- Two similar works each costing not less than the amount equal to 40% of advertised value of each component of tender, or
- One similar work each costing not less than the amount equal to 60% of advertised value of each component of tender.

Note for (b) (i): Separate completed works of minimum required values shall also be considered for fulfilment of technical eligibility criteria for different components.

(b) (ii) In such cases, what constitutes a component in a composite work shall be clearly pre-defined with estimated tender cost of it, as part of the tender documents without any ambiguity.

(b) (iii) To evaluate the technical eligibility of tenderer, only components of work as stipulated in tender documents for evaluation of technical eligibility, shall be considered. The scope of work covered in other remaining components shall be either executed by tenderer himself if he has work experience as mentioned in clause 2.1 of Chapter-6 or through subcontractor fulfilling the requirements as per clause 2.1 of Chapter-6 or jointly.

8.
  - [a] Date of award of contract.
  - [b] Date of actual physical completion of work.
9. Details of copy of documents attached in support of completion of above similar single work.
  - [a] Certificate No. and date.
  - [b] Authority issued.

10. Declaration by the tenderer: I hereby declare that the information given above are true and the copy of the certificate enclosed is genuine. If any of the information given above is found to be wrong at any time, my tender will liable to be rejected and such liability will be compensated by me.

Name and signature of Tenderer along with Seal.

**N.B. Certificates containing the above information will only be considered. In complete certificates/copy of bills/letter of acceptance will not be considered.**

**Compliance of Financial Eligibility criteria****Each Bidder or each member of a JV must fill in this form separately:****NAME OF BIDDER/JV PARTNER:****Annual Contractual Turnover Data for the Previous 3/4 Years  
(Contractual Payment only)**

Year	Amount Currency	Exchange rate	Indian National Rupees Equivalent
Average Annual Contractual turnover for last 3 years			

1. The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.
2. The information supplied shall be substantiated by data in the audited balance sheets and profit and loss accounts for the relevant years in respect of the bidder or all members constituting the bidder.
3. Contents of this form should be certified by a Chartered Accountant duly supported by Audited Balance Sheet duly certified by the Chartered Accountant.

***SEAL AND SIGNATURE OF THE BIDDER***

Certified that all figures and facts submitted in this form have been furnished after full consideration of all observations/notes in Auditor’s reports. \_\_\_\_\_

***(Signature of Chartered Accountant)*****Name of CA:** \_\_\_\_\_**Registration No:** \_\_\_\_\_***(Seal)***

**TENDERER'S CREDENTIALS (BID CAPACITY)****RAILWAY**

For tenders having advertised value more than Rs 10 crore wherein eligibility criteria include Bid Capacity also, the tenderer will be qualified only if its available bid capacity is equal to or more than the total bid value of the present tender.

The available bid capacity shall be calculated as under:

$$\text{Available Bid Capacity} = [A \times N \times 2] - 0.33 \times N \times B$$

Where,

A = Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender), taking into account the completed as well as works in progress.

N= Number of years prescribed for completion of work for which bids has been invited.

B = Existing commitments and balance amount of ongoing works with tenderer as per the prescribed proforma of Railway for statement of all works in progress and also the work which are awarded to tenderer but yet not started upto the date of inviting of tender.

Note:

- (a) The Tenderer(s) shall furnish the details of -
  - (i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) for calculating A, and
  - (ii) Existing commitments and balance amount of ongoing works with tenderer as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tenderer but yet not started upto the date of inviting of tender for calculating B as per ANNEXURE-E. In case of no works in hand, a 'NIL' statement should be furnished.

The submitted details for (i) and (ii) above should be duly verified by Chartered Accountant.
- (b) In case if a bidder is JV, the tenderer(s) must furnish the details of
  - (i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) by each member of JV for calculating A, and
  - (ii) Existing commitments and balance amount of ongoing works with each member of JV either in individual capacity or as a member of other JV as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to each member of JV either in individual capacity or as a member of other JV but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.

The submitted details for (i) and (ii) above should be duly verified by Chartered Accountant.
- (c) Value of a completed work/work in progress/work awarded but yet not started for a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned bid capacity in the tender under consideration.
- (d) The arithmetic sum of individual "bid capacity" of all the members shall be taken as JV's "bid capacity".
- (e) In case, the tenderer/s failed to submit the above statement along with offer, their/his offer shall be considered as incomplete and will be rejected **summarily**.
- (f) The available bid capacity of tenderer shall be assessed based on the details submitted by the tenderer. In case, the available bid capacity is lesser than estimated cost of work put to tender, his offer shall not be considered even if he has been found eligible in other eligibility criteria/tender requirement.

**CHAPTER-4**  
**EXCERPTS CONDITION FOR PARTICIPATION IN TENDERTO BE SUBMITTED ALONG WITH THE**  
**TENDER**

13. **Execution of Contract Documents:** The successful Tenderer(s) shall be required to execute an agreement with the President of India acting through the Senior Divisional Electrical Engineer (G.)/ Izzatnagar/N.E. Railway for carrying out the work according to Standard General Conditions of Contract, Special Conditions / Specifications annexed to the tender and Standard Specifications (Works and Materials) of Railway as amended /corrected upto latest correction slips, mentioned in tender form (first Sheet).
14. **Documents to be submitted Along with Tender**
- (i) The tenderer shall clearly specify whether the tender is submitted on his own (Proprietary Firm) or on behalf of a Partnership Firm / Company / Joint Venture (JV) / Registered Society/ Registered Trust / Hindu Undivided Family (HUF)/Limited Liability Partnership (LLP) etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern, and copy of PAN Card along with their tender. Tender Documents in such cases are to be signed by such persons as may be legally competent to sign them on behalf of the firm, company, association, trust or society, as the case may be.
- (ii) **Following documents shall be submitted by the tenderer:**
- (a) **Sole Proprietorship Firm:**
- (i) All other documents in terms of Para 10 of Chapter-3 and Para 17.14.2 of Chapter-5.
- (b) **HUF:**
- (i) A copy of notarized affidavit on Stamp Paper declaring that he who is submitting the tender on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.
- (ii) All other documents in terms of Para 10 of Chapter-3.
- (c) **Partnership Firm:**
- (i) **All other documents in terms of Para 18 of Chapter-5.**
- (d) **Joint Venture (JV): The tenderer shall submit documents as mentioned in Para 17 of Chapter-5**
- (e) **Company registered under Companies Act 2013:**
- (i) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company.
- (ii) A copy of Certificate of Incorporation
- (iii) A copy of Authorization/Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender on behalf of the company and create liability against the company.
- (iv) All other documents in terms of explanatory notes in clause 10 of Chapter-3.
- (f) **LLP (Limited Liability Partnership):**
- (i) A copy of LLP Agreement
- (ii) A copy of Certificate of Incorporation
- (iii) A copy of Power of Attorney/Authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP.
- (iii) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract.
- (iv) All other documents in terms of explanatory notes in clause 10 of Chapter-3.
- (g) **Registered Society & Registered Trust:** The tenderer shall submit:
- (i) A copy of the Certificate of Registration
- (ii) A copy of Memorandum of Association of Society/Trust Deed.
- (iii) A copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust.

- (iii) A copy of Rules & regulations of the Society.
  - (v) All other documents in terms of explanatory notes in clause 10 of Chapter-3.
- (iii) **If it is NOT mentioned in the submitted tender that tender is being submitted on behalf of a Sole Proprietorship firm / Partnership firm / Joint Venture / Registered Company etc., then the tender shall be treated as having been submitted by the individual who has signed the tender.**
- (iv) **After opening of the tender, any document pertaining to the constitution of Sole Proprietorship Firm / Partnership Firm / Registered Company/ Registered Trust / Registered Society / HUF/LLP etc. shall be neither asked nor considered, if submitted. Further, no suo moto cognizance of any document available in public domain (i.e., on internet etc.) or in Railway's record/office files etc. will be taken for consideration of the tender, if no such mention is available in tender offer submitted.**
- (v) A tender from JV shall be considered only where permissible as per the tender conditions.
- (vi) The Railway will not be bound by any change of power of attorney or in the composition of the firm made subsequent to the submission of tender. Railway may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.
- 15. The tenderer whether sole proprietor / a company or a partnership firm / joint venture (JV) / registered society / registered trust / HUF/LLP etc if they want to act through agent or individual partner(s), should submit along with the tender, a copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person and further to deal with the Tender/ Contract up to the stage of signing the agreement except in case where such specific person is authorized for above purposes through a provision made in the partnership deed/Memorandum of Understanding/Article of Association /Board resolution, failing which tender shall be summarily rejected.**

A separate power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, shall be submitted after award of work, specifically authorizing him/ them to deal with all other contractual activities subsequent to signing of agreement, if required.

Note: A Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.

**16. Employment/Partnership etc. of Retired Railway Employees:**

- (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 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

THEN

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.

**The Guide Lines for Participation in Joint venture kindly see Chapter-5.**

**CHAPTER-5**  
**GUIDELINES FOR PARTICIPATION OF JOINT VENTURE FIRMS IN WORKS TENDER**  
**(JV is applicable in the tenders valuing Rs.10 Crore & more)**

- 17. Participation of Joint Venture (JV) in Works Tender:** This Clause shall be applicable for works tenders wherein tender documents provide for the same.
- 17.1** Separate identity/name shall be given to the Joint Venture.
- 17.2** Number of members in a JV shall not be more than three, if the work involves only one department (say Civil or S&T or Electrical or Mechanical) and shall not be more than five, if the work involves more than one Department. One of the members of the JV shall be its Lead Member who shall have a majority (at least 51%) share of interest in the JV. The other members shall have a share of not less than 20% each in case of JV with upto three members and not less than 10% each in case of JV with more than three members. In case of JV with foreign member(s), the Lead Member has to be an Indian firm/ company with a minimum share of 51%.
- 17.3** A member of JV shall not be permitted to participate either in individual capacity or as a member of another JV in the same tender.
- 17.4** The tender form shall be purchased and submitted only in the name of the JV and not in the name of any constituent member. The tender form can however be submitted by JV or any of its constituent member or any person authorized by JV through Power of Attorney to submit tender.
- 17.5 Bid Security shall be submitted by JV or authorized person of JV either as:**
- (i) Cash through e-payment gateway or as mentioned in tender document, or
  - (ii) Bank Guarantee bond either in the name of JV, or in the name of all members of JV as per MOU irrespective of their share in the JV if the JV has not been constituted legally till the date of submission of tender.
- 17.6** A copy of Memorandum of Understanding (MoU) duly executed by the JV members on a stamp paper, shall be submitted by the JV along with the tender. The complete details of the members of the JV, their share and responsibility in the JV etc. particularly with reference to financial, technical and other obligations shall be furnished in the MoU. (The MoU format for this purpose shall be finalized by the Railway in consultation with their Law Branch and enclosed along with the tender).
- 17.7** Once the tender is submitted, the MoU shall not normally be modified / altered / terminated during the validity of the tender. In case the tenderer fails to observe/comply with this stipulation, the full Bid Security shall be liable to be forfeited.
- 17.8** Approval for change of constitution of JV shall be at the sole discretion of the Railway. The constitution of the JV shall not be allowed to be modified after submission of the tender bid by the JV, except when modification becomes inevitable due to succession laws etc., provided further that there is no change in qualification of minimum eligibility criteria by JV after change of composition. However, the Lead Member shall continue to be the Lead Member of the JV. Failure to observe this requirement would render the offer invalid.
- 17.9** Similarly, after the contract is awarded, the constitution of JV shall not be normally allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and minimum eligibility criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all consequential penal action as per contract conditions.
- 17.10** On award of contract to a JV, a single Performance Guarantee shall be submitted by the JV as per tender conditions. All the Guarantees like Performance Guarantee, Bank Guarantee for Mobilization Advance, Machinery Advance etc. shall be accepted only in the name of the JV and no splitting of guarantees amongst the members of the JV shall be permitted.
- 17.11** On issue of LOA (Letter of Acceptance), the JV entity to whom the work has been awarded, with the same shareholding pattern as was declared in the MOU/JV Agreement submitted along with the tender, shall be got registered before the Registrar of the Companies under 'The Companies Act -2013' (in case of JV entity is to be registered as Company) or before the Registrar/Sub-Registrar under the 'The Indian Partnership Act, 1932' (in case of JV entity is to be registered as Partnership Firm) or under 'The LLP Act 2008' (in case of JV entity is to be registered as LLP). A separate PAN shall be obtained for this entity. The documents pertaining to this entity including its PAN shall be furnished to the Railways before signing the contract agreement for the work. In case the tenderer fails to observe/comply with this stipulation within 60 days of issue of LOA, contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit the full amount of the Bid Security and other dues payable to the Contractor under this contract. The entity so registered, in the registered documents, shall have, inter-alia, following Clauses:

- 17.11.1 Joint And Several Liability** - Members of the entity to which the contract is awarded, shall be jointly and severally liable to the Railway for execution of the project in accordance with General and Special Conditions of Contract. The members of the entity shall also be liable jointly and severally for the loss, damages caused to the Railways during the course of execution of the contract or due to non-execution of the contract or part thereof.
- 17.11.2 Duration of the Registered Entity** - It shall be valid during the entire currency of the contract including the period of extension, if any and the maintenance period after the work is completed.
- 17.11.3 Governing Laws** - The Registered Entity shall in all respect be governed by and interpreted in accordance with Indian Laws.
- 17.12 Authorized Member** - Joint Venture members in the JV MoU shall authorize one of the members on behalf of the Joint Venture to deal with the tender, sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/contract. All notices/correspondences with respect to the contract would be sent only to this authorized member of the JV.
- 17.13** No member of the Joint Venture shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other members and that of the Railway in respect of the said tender/contract.
- 17.14 Documents to be enclosed by the JV along with the tender:**
- 17.14.1 In case one or more of the members of the JV is/are partnership firm(s), following documents shall be submitted:**
- (i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar,
  - (ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a stamp paper,
  - (iii) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm.
  - (iv) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry/Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract.
- 17.14.2 In case one or more members is/are Proprietary Firm or HUF, following documents shall be enclosed:**
- (i) A copy of notarized affidavit on Stamp Paper declaring that his Concern is a proprietary Concern and he is sole proprietor of the Concern OR he who is signing the affidavit on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.
- 17.14.3 In case one or more members of the JV is/are companies, the following documents shall be submitted:**
- (i) A copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement,
  - (ii) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company
  - (iii) A copy of Certificate of Incorporation
  - (iv) A copy of Authorization/copy of Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual, to sign the tender, sign MOU/JV Agreement on behalf of the company and create liability against the company.
- 17.14.4 In case one or more members of the JV is/are LLP firm/s, the following documents shall be submitted:**
- (i) A copy of LLP Agreement
  - (ii) A copy of Certificate of Incorporation of LLP
  - (iii) A copy of resolution passed by partners of LLP firm, permitting the Firm to enter into a JV agreement
  - (iv) A copy of Authorization /copy of Power of Attorney issued by the LLP firm (backed by resolution passed by the Partners) in favour of the individual, to sign the tender and/or sign the MOU/ JV agreement on behalf of the LLP and create liability against the LLP.
  - (v) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of



submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract.

**17.14.5** In case one or more members of the JV is/are Society/s or Trust/s, the following documents shall be submitted:

- (i) A copy of Certificate of Registration
- (ii) A copy of Memorandum of Association of Society/Trust Deed
- (iii) A copy of Rules & Regulations of the Society
- (iv) A copy of Power of Attorney, in favour of the individual to sign the tender documents and create liability against the Society/Trust.

**17.14.6 All other documents in terms of Para 10 of Chapter-3 above.**

**17.15** Credentials & Qualifying Criteria: Technical, financial eligibility and Bid capacity of the JV shall be adjudged based on satisfactory fulfilment of the following criteria:

**17.15.1 Technical Eligibility Criteria ('a' or 'b' mentioned hereunder):**

(a) **For Works without composite components:**

The technical eligibility for the work as per **Para 2.3 of Chapter-3 above**, shall be satisfied by either the 'JV in its own name & style' or Lead member of the JV,

Each other (non-lead) member(s) of JV, who is/are not satisfying the technical eligibility for the work as per Para 2.3 of Chapter-3 above, shall have technical capacity of minimum 10% of the cost of work i.e. each non-lead member of JV member must have satisfactory completed or substantially completed during the last 07 (seven) years, ending last day of month previous to the one in which tender is invited, one similar single work for a minimum of 10% of advertised value of the tender.

(b) **For works with composite components:**

The technical eligibility for major component of work as per **Para 2.3 of Chapter-3 above**, shall be satisfied by either the 'JV in its own name & style' or Lead member of the JV and technical eligibility for other component(s) of work as per **Para 2.3 of Chapter-3 above**, shall be satisfied by either the 'JV in its own name & style' or 'any member of the JV'.

Each other (non-lead)member(s) of JV, who is/ are not satisfying the technical eligibility for any component of the work as per **Para 2.3 of Chapter-3 above**, shall have technical capacity of minimum 10% of the cost of any component of work mentioned in technical eligibility criteria. i.e., each other (non-lead) member of must have satisfactorily completed or substantially completed during the last 07 (seven) years, ending last day of month previous to the one in which tender is invited, one similar single work for a minimum of 10% of cost of any component of work mentioned in technical eligibility criteria.

**Note for Para 17.15.1:**

- a) *The Major component of the work for this purpose shall be the component of work having highest value. In cases where value of two or more component of work is same, any one work can be classified as Major component of work.*
- b) *Value of a completed work done by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned technical eligibility criteria in the tender under consideration.*

**17.15.2 Financial Eligibility Criteria:**

The JV shall satisfy the requirement of "Financial Eligibility" mentioned at **Para 10.2 of Chapter-3 above**. The "financial capacity" of the lead partner of JV shall not be less than 51% of the financial eligibility criteria mentioned at Para 10.2 of Chapter-3 above.

The arithmetic sum of individual "financial capacity" of all the members shall be taken as JV's "financial capacity" to satisfy this requirement.

Note: Contractual payment received by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying compliance of the above mentioned financial eligibility criteria in the tender under consideration.

**17.15.3 Bid Capacity:**

The JV shall satisfy the requirement of "Bid Capacity" requirement mentioned at Para **10.3 of Chapter-3 above**. The arithmetic sum of individual "Bid capacity" of all the members shall be taken as JV's "Bid capacity" to satisfy this requirement.

**18.0 Participation of Partnership Firms in works tenders:**

- 18.1 The Partnership Firms participating in the tender should be legally valid under the provisions of the Indian Partnership Act.
- 18.2 The partnership firm should have been in existence or should have been formed prior to submission of tender. Partnership firm should have either been registered with the Registrar or the partnership deed should have been notarized as per the Indian Partnership Act, prior to submission of tender.
- 18.3 Separate identity / name should be given to the partnership firm. The partnership firm should have PAN / TAN number in its own name and PAN / TAN number in the name of any of the constituent partners shall not be considered. The valid constituents of the firm shall be called partners.
- 18.4 Once the tender has been submitted, the constitution of the firm shall not normally be allowed to be modified / altered / terminated during the validity of the tender as well as the currency of the contract except when modification becomes inevitable due to succession laws etc., in which case prior permission should be taken from Railway and in any case the minimum eligibility criteria should not get vitiated. The re-constitution of firm in such cases should be followed by a notary certified Supplementary Deed. The approval for change of constitution of the firm, in any case, shall be at the sole discretion of the Railways and the tenderer shall have no claims what-so-ever. Any change in the constitution of Partnership firm after submission of tender shall be with the consent of all partners and with the signatures of all partners as that in the Partnership Deed. Failure to observe this requirement shall render the offer invalid and full Bid Security shall be forfeited.

If any Partner/s withdraws from the firm after submission of the tender and before the award of the contract, the offer shall be rejected and Bid Security of the tenderer will be forfeited. If any new partner joins the firm after submission of tender but prior to award of contract, his / her credentials shall not qualify for consideration towards eligibility criteria either individually or in proportion to his share in the previous firm. In case the tenderer fails to inform Railway beforehand about any such changes / modification in the constitution which is inevitable due to succession laws etc. and the contract is awarded to such firm, then it will be considered a breach of the contract conditions liable for determination of the contract under Clause 62 of the Standard General Conditions of Contract.

- 18.5 A partner of the firm shall not be permitted to participate either in his individual capacity or as a partner of any other firm in the same tender.
- 18.6 **The tender form shall be submitted only in the name of partnership firm. The Bid Security shall be submitted by partnership firm through e-payment gateway or as mentioned in tender document. The Bid Security submitted in the name of any individual partner or in the name of authorized partner (s) shall not be considered.**
- 18.7 On issue of Letter of Acceptance (LOA) to the partnership firm, all the guarantees like Performance Guarantee, Guarantee for various Advances to the Contractor shall be submitted only in the name of the partnership firm and no splitting of guarantees among the partners shall be acceptable.
- 18.8 On issue of Letter of Acceptance (LOA), contract agreement with partnership firm shall be executed in the name of the firm only and not in the name of any individual partner.
- 18.9 In case the Letter of Acceptance (LOA) is issued to a partnership firm, the following undertakings shall be furnished by all the partners through a notarized affidavit, before signing of contract agreement.

**(a) Joint and several liabilities:**

The partners of the firm to which the Letter of Acceptance (LOA) is issued, shall be jointly and severally liable to the Railway for execution of the contract in accordance with General and Special Conditions of the

Contract. The partners shall also be liable jointly and severally for the loss, damages caused to the Railway during the course of execution of the contract or due to non-execution of the contract or part thereof.

(b) **Duration of the partnership deed and partnership firm agreement:**

The partnership deed/partnership firm agreement shall normally not be modified/altared/ terminated during the currency of contract and the maintenance period after the work is completed as contemplated in the conditions of the contract. Any change carried out by partners in the constitution of the firm without permission of Railway, shall constitute a breach of the contract, liable for determination of the contract under Clause 62 of the General Conditions of Contract.

(c) **Governing laws:** The partnership firm agreement shall in all respect be governed by and interpreted in accordance with the Indian laws.

(d) No partner of the firm shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other partner/s and that of the Railway.

18.10 The tenderer shall clearly specify that the tender is submitted on behalf of a partnership firm. **The following documents shall be submitted by the partnership firm, with the tender:**

(i) A notarized copy of partnership deed or a copy of the Partnership deed registered with the Registrar.  
(ii) A notarized or registered copy of Power of Attorney in favour of the individual to tender for the work, sign the agreement etc. and create liability against the firm.

(iii) An undertaking by all partners of the partnership firm that “they are not blacklisted or debarred by Railways or any other Ministry/Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid eligible or the contract shall be determined under Clause 62 of the General Conditions of Contract”, as per standard format of **Annexure 2(A)** of chapter-2 of the tender document.

(iv) All other documents in terms of explanatory notes in **Para 10.0 of Chapter-3 above**.

18.11 **Evaluation of eligibility of a partnership firm:** Technical and financial eligibility of the firm shall be adjudged based on satisfactory fulfilment of the eligibility criteria laid down in Para 10 of Chapter-3 shall be taken.

**19.0 Advances to Contractor –**

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 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.

**MEMORANDUM OF UNDERSTANDING [MOU] FOR JOINT VENTURE PARTICIPATION**

**[To be executed on non-judicial stamp paper of appropriate value in accordance with relevant stamp Act. The stamp paper is to be issued in the name of the Joint Venture Firm].**

**JOINT VENTURE PARTICIPATION****BETWEEN**

[indicate the name of member] having its registered office at [indicate the address of the member] represented by their [indicate designation/capacity e.g Manager/General manager/Director/Managing Director/ Partner/Managing Partner/Proprietor etc.], Shri. [indicate the name] aged about .....years, S/o Shri [indicate the name of father] resident of [indicate Address][hereinafter known as authorized signatory of the member] in the capacity of Lead Member of the first part.

**AND**

[indicate the name of member] having its registered office at [indicate the address of the member] represented by their [indicate designation/capacity e.g manager/General manager/Director/Managing Director/ Partner/Managing Partner/Proprietor etc.], Shri. [indicate the name] aged about .....years, S/o Shri [indicate the name of father] resident of [indicate Address][hereinafter known as authorized signatory of the member] in the capacity of the constituent member of the other part.

**[In case of more than two members, include the details accordingly].**

Now, the Joint Venture Firm [JV] formed by the members i.e.[indicate name of lead member] and [indicate name of constituent member] and [indicate name of other constituent member] will be known as [indicate JV firm name and address].

The expressions [indicate name of the lead member] and [indicate name of the constituent members], shall whatever the context admits, mean and include their respective legal representatives, successors-in-interest and assigns, and shall collectively be referred to as **“Joint Venture Firm”** and individually as the **“Member”**

WHEREAS; President of India, acting through Ministry of Railways, Senior Divisional Electrical Engineer (G.)/ Izzatnagar/ North Eastern Railway[hereinafter referred to as **“Employer”**] has invited Tender for “[indicate name of work as mentioned in Notice inviting Tender]”.

NOW, THEREFORE, THE MEMBERS AGREE AS FOLLOWS:

1. The **‘Members’** have studied the documents and have agreed to submit their Tender as Joint Venture [JV] Firm.

The following documents shall be deemed to form and be read and construed as an integral part of this MOU.

- i) Notice inviting Tender,
- ii) Tender document,
- iii) Any Addendum/Corrigendum issued by [North Eastern Railway N.E. Railway organization], and
- iv) The Tender for work submitted by Joint Venture Firm through Authorized member.

2. [indicate the name of the Lead Member] shall be the **“Lead member”** of the JV Firm, for all intents and purposes having majority share [i.e. 51% or more] and other member not less than 20% in Joint Venture Firm and who have also successfully completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited. (as per technical eligibility criteria mentioned in Para 2.1(a) & (b) of chapter-3).

3. The ‘Members’ resolve that the distribution of share of Financial, Technical, and other responsibilities of the constituent members of JV Firm is as under:

- |                                                             |                    |
|-------------------------------------------------------------|--------------------|
| (a) [indicate name and Address of Lead Member]              | <b>Share ....%</b> |
| Lead Member                                                 |                    |
| (b) [indicate name and Address of Constituent Member]       | <b>Share ....%</b> |
| (c) [indicate name and Address of Other Constituent Member] | <b>Share ....%</b> |
| Other Constituent Member                                    |                    |

4. **JOINT AND SEVERAL RESPONSIBILITY**

The Members undertake that they shall be jointly and severally liable to the Employer [Railways] for execution of the work in accordance with General and Special Conditions of Contract. The JV members shall also be liable jointly and severally for the loss, damages caused to the Employer [Railways] during the course of execution of the contract or due to non-execution of the contract or part thereof.

5. **ASSIGNMENT AND THIRD PARTIES**

No member of the Joint Venture firm shall have the right to assign or transfer the interest, right or liability in the contract without the written consent of the other members and that of the Employer [Railways] in respect of the said tender/contract.

6. **AUTHORIZED MEMBER**

We, authorize [indicate lead member or any one of the constituent member of JV firm nominated as authorized member], as **Authorized member** represented by their authorized signatory Shri. [indicate the name] to act on behalf of the Joint Venture Firm to deal with the tender, sign the agreement or enter into contract in respect of the said tender/contract, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/ contract. However, authorized member shall not submit any such proposals, clarifications or commitments without securing clearance of other JV constituents[s].

All notices/correspondences with respect to the tender/contract would be sent by Employer [Railways] **only to the authorized signatory of Authorized member at the address of JV firm**. All such notices/correspondences sent by Employer shall be legally binding on all the members of the J.V Firm.

7. **GUARANTEES AND BONDS**

Earnest Money Deposit and all bonds/guarantees to the Employer [Railways] shall be submitted in the name JV Firm, which shall be legally binding on all the members of the J.V Firm.

8. **INDEMNITY**

Each member hereto agrees to indemnify the other members against its respective parts in case of breach/default of the respective part of the contract/tender of any liabilities sustained by the Joint Venture Firm.

9. For the execution of the respective portions of works, the members shall make their own arrangements to bring the required finance, plants and equipment, materials, manpower and other resources.

10. **DOCUMENTS and CONFIDENTIALITY.**

Each member shall maintain confidentiality regarding the information related to the tender/contract, commercial and technical information received or generated in the course of preparation and submission of the Tender.

11. **ARBITRATION**

Any dispute, controversy or claim arising out of or relating to this agreement shall be settled in the first instance amicably between the members. If an amicable settlement cannot be reached as above, it will be settled by arbitration in accordance with the Indian Arbitration and Conciliation Act 1996 or any amendments thereof. The Venue of the arbitration shall be [indicate the name of place]. Notwithstanding settlement of any dispute among the members of the JV Firm, the JV members shall ensure satisfactory completion of awarded work as per the contract with the Employer [Railways].

12. **VALIDITY**

This MOU shall remain in force till the occurrence of the earliest of the following, unless by mutual consent, the members agree in writing to extend the validity for a further period

- a. Tender submitted by the joint venture Firm is declared unsuccessful, or
- b. Cancellation/shelving of the work by the Employer [Railways] for any reasons prior to award of work.

In case, the Tender submitted by the joint venture Firm is declared successful; the validity of this MOU shall be upto the entire period of completion [inclusive of period of extension, if any] including maintenance period.

13. This MOU is drawn in .....number of copies with equal legal strength and status. One copy is held by [indicate name of lead member] and the other by [indicate name of constituent member] and [indicate name of other constituent member] and one copy submitted with the tender to Employer [Railways].

14. This MOU shall in all respects be governed by and interpreted in accordance with Indian Laws.

15. **NOTICES/CORRESPONDANCE**

All Notices/Correspondence by Employer [Railways] in writing shall be sent by Fax confirmed, by registered post or commercial courier to the following Fax number and address.

[Indicate name of authorized signatory of authorized member, name and address of JV Firm with Fax number]

**16. JV Agreement.**

We the constituent member of the JV Firm are aware that after issue of Letter of Acceptance by the Employer [Railways], an agreement among the members of the JV firm has to be executed and got registered before the Registrar of Companies under the Companies Act or with the Registrar/Sub-Registrar under the Registration Act. This agreement shall be submitted by the JV firm to the Employer [Railways] as per Standard J.V. Agreement format before signing the contract agreement for the work. In case the JV members fail to observe/comply with stipulations, the Earnest Money Deposit, deposited with the Employer [Railways] shall be forfeited and other penal actions due shall be taken against the members and the JV Firm by the Employer [Railways].

17. We, the members of JV Firm shall furnish along with the tender, requisite documents as mentioned under Chapter-5 [as the case may be] of the Guidelines for Participation of J.V. firms in works tender.

**18. Declaration**

It is certified that we are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract.

IN WITNESS WHEREOF THE MEMBERS, have executed this MOU on [indicate day, month and year].

[indicate name of authorized signatory]  
[indicate name and address of lead member]  
with [Seal]

Witness:

[indicate name of authorized signatory]  
[indicate name and address of constituent member]  
with [Seal]

1.....[Name and Address]

2.....[Name and Address]

\*\*\*\*\*

JOINT VENTURE AGREEMENT FOR JOINT VENTURE PARTICIPATION

[The J.V. Agreement to be executed on non-judicial stamp paper of appropriate value, in accordance with relevant stamp Act. The stamp paper is to be issued in the name of the Joint Venture Firm and should not be more than six months old from the date of execution of the J.V. Agreement, on it]

JOINT VENTURE AGREEMENT  
BETWEEN

[indicate the name of member] having its registered office at [indicate the address of the member] represented by their [indicate designation/capacity e.g. Manager/General manager/Director/Managing Director/ Partner/Managing Partner/Proprietor etc.], Shri. [indicate the name] aged about .....years, S/o Shri [indicate the name of father] resident of [indicate Address][hereinafter known as authorized signatory of the member] in the capacity of Lead Member of the first part.

And

[indicate the name of member] having its registered office at [indicate the address of the member] represented by their [indicate designation/capacity e.g. manager/General manager/Director/Managing Director/ Partner/Managing Partner/Proprietor etc.], Shri. [indicate the name] aged about .....years, S/o Shri [indicate the name of father] resident of [indicate Address][hereinafter known as authorized signatory of the member] in the capacity of the constituent member of the other part.

[In case of more than two members, include the details accordingly].

Now, the Joint Venture Firm [JV] formed by the members i.e.[indicate name of lead member] and [indicate name of constituent member] and [indicate name of other constituent member] will be known as [indicate JV firm name and address].

The expressions [indicate name of the lead member] and [indicate name of the constituent members], shall whatever the context admits, mean and include their respective legal representatives, successors-in-interest and assigns, and shall collectively be referred to as “**Joint Venture Firm**” and individually as the “**Member**”

1. WHEREAS; President of India, acting through Ministry of Railways, Senior Divisional Electrical Engineer (G.)/ Izzatnagar/ North Eastern Railway[hereinafter referred to as “**Employer**”] has invited Tender for “[indicate name of work as mentioned in Notice inviting Tender]”.

And Whereas, the above members to the Joint Venture Firm have submitted the tender in the name of the said JV Firm formed as per the MOU signed on dated      and whereas the said tender has finally been accepted by the Employer [Railways] vide Letter Of Acceptance No.....dated....., we [indicate name of the lead member] and [indicate name of the constituent members], herewith sign the above formal JV agreement for registration of the above joint venture Firm viz[indicate JV firm name and address] and for entering into contract Agreement with the “Employer” [Railway].

2. **NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:**

The following documents shall be deemed to form and be read and construed as an integral part of this J.V. Agreement.

- i] Notice inviting Tender,
- ii] Tender document,
- iii] Any Addendum/Corrigendum issued by [North Eastern Railway]
- iv] MOU signed on ..... by us.
- v) Tender submitted on our behalf by the Authorized Member.
- vi] Letter Of Acceptance issued by Employer [Railways].

3. The ‘Members’ have studied the documents, JV guidelines and have agreed to participate in submitting the ‘Tender’ jointly; signed the JV MOU and submitted the tender accordingly.

4. [indicate the name of the Lead Member] shall be the “**Lead member**” of the JV Firm ,for all intents and purposes having majority share [i.e 51% or more] and other member not less than 20% in Joint Venture Firm and who have also successfully completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited.(as per technical eligibility criteria mentioned in Para 2.1(a) & (b) of chapter-3)

5. We, authorize [indicate lead member or any one of the constituent member of JV firm nominated as authorized member], as **Authorized member** represented by their authorized signatory Shri. [indicate the name] to act on behalf of the Joint Venture Firm to deal with the tender, sign the agreement or enter into contract in respect of

the said tender/contract, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/ contract. However, authorized member shall not submit any such proposals, clarifications or commitments without securing clearance of other JV constituents[s].

All notices/correspondences with respect to the tender/contract would be sent by Employer [Railways] **only to the authorized signatory of Authorized member at the address of JV firm**. All such notices/correspondences sent by Employer shall be legally binding on all the members of the J.V Firm.

6. The 'Members' resolve that the distribution of share of Financial, Technical, and other responsibilities of the constituent members of JV Firm is as under:

- (a) [indicate name and Address of Lead Member] **Share ....%**  
Lead Member
- (b) [indicate name and Address of Constituent Member]**Share ....%**  
Constituent Member
- (c) [indicate name and Address of Other Constituent Member]**Share ....%**  
Other Constituent Member

7. The constitution of JV firm shall not be altered during the currency of the contract except when modification become inevitable due to succession laws etc. provided that the minimum eligibility criteria are not got vitiated. Failure to observe this stipulation shall be deemed to be breach of contract, which will entitle the Employer [Railway] to take all consequential action as per contract conditions.

8. **JOINT AND SEVERAL RESPONSIBILITY**

The Members undertake that they shall be jointly and severally liable to the Employer [Railways] for execution of the work in accordance with General and Special Conditions of Contract. The JV members shall also be liable jointly and severally for the loss, damages caused to the Employer [Railways] during the course of execution of the contract or due to non-execution of the contract or part thereof. The members solemnly affirm and declare that every possible care will be taken by them for ensuring satisfactory execution and completion of the work awarded under the contract.

9. **ASSIGNMENT AND THIRD PARTIES**

No member of the Joint Venture firm shall have the right to assign or transfer the interest, right or liability in the contract without the written consent of the other members and that of the Employer [Railways] in respect of the said tender/contract.

10. **GUARANTEES AND BONDS**

All bonds/guarantees e.g Performance Guarantee, Bank Guarantee etc. to the Employer [Railways] shall be submitted by the JV Firm as per tender conditions, only in the name of J.V Firm.

11. **INDEMNITY**

Each member hereto agrees to indemnify the other members against its respective parts in case of breach/default of the respective part of the contract/tender of any liabilities sustained by the Joint Venture Firm.

12. **USE OF MACHINERY, INSTRUMENT, LABOUR FORCE etc.**

For the execution of the respective portions of works, the members shall make full arrangements to bring the required finance, plants and equipment, materials, manpower and other resources. However, the members here to undertake that whatever the machinery, instruments, labour force, [including unskilled, skilled, inspectors, Engineer etc.] they possess at the time of entering into Joint Venture Agreement or which subsequently shall come in their possession and if such machinery, instruments, labour force is required for the speedy and efficient execution of any portion of the work, the member/members having the control over the said machinery, instruments, labour force etc. without having any regard to their share of profit and loss agreed to between the members in Joint Venture Agreement shall hand over the same which shall be placed at the disposal of the other member actually executing that portion of the work at mutually agreed terms for the purpose of execution of the contract without any hindrance and obstacle

13. **DOCUMENTS and CONFIDENTIALITY.**

Each member shall maintain confidentiality regarding the information related to the tender/contract, commercial and technical information received or generated in the course of preparation and submission of the Tender and execution of contract.



14. **ARBITRATION**

Any dispute, controversy or claim arising out of or relating to this agreement shall be settled in the first instance amicably between the members. If an amicable settlement cannot be reached as above, it will be settled by arbitration in accordance with the Indian Arbitration and Conciliation Act 1996 or any amendments thereof. The Venue of the arbitration shall be [indicate the name of place]. Notwithstanding settlement of any dispute among the members of the JV Firm, the JV members shall ensure satisfactory completion of awarded work as per the contract with the Employer [Railways].

15. **DURATION OF JOINT VENTURE AGREEMENT**

It shall be valid during the entire currency of the contract including the period of extension if any and the maintenance period after the work is completed and till Security Deposit is released.

16. **NOTICES/CORRESPONDANCE**

All Notices/Correspondence by Employer [Railways] in writing shall be sent by Fax confirmed, by registered post or commercial courier to the following Fax number and address.

[Indicate name of authorized signatory of authorized member, name and address of JV Firm with Fax number]

17. **Governing Laws:** The J.V. Agreement shall in all respect be governed by and interpreted in accordance with Indian Laws.

**Declaration:-**

It is certified that we are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract.

IN WITNESS WHEREOF THE MEMBERS, have executed this JV Agreement on

[indicate day, month and year]

[indicate name of authorized signatory]

[indicate name and address of constituent member][indicate name and address of lead member]

[Seal][Seal]

**Witness:**

1.....[Name and Address]

2.....[Name and Address]

Place :

Date :

[The J.V. Agreement should be got registered with Registrar of Company Act or with the Registrar/Sub-registrar under the registration act.]

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**CHAPTER-6**  
**STANDARD GENERAL CONDITIONS OF CONTRACT**

- 1. (1) Definitions:** In these Standard General Conditions of Contract, the following terms shall have the meaning assigned hereunder except where the context otherwise requires:
- (a) "Railway" shall mean the President of the Republic of India or the Senior Divisional Electrical Engineer (G.)/ Izzatnagar/ North Eastern Railway or of the Successor Railway authorized to deal with any matters which these presents are concerned on his behalf.
  - (b) "General Manager" shall mean the Officer in-charge of the General Superintendence and Control of the Railway and shall also include Addl. General Manager, the General Manager (North Eastern Railway) and shall mean and include their successors, of the successor Railway.
  - (c) "Chief Engineer" shall mean the Officer in-charge of the Engineering Department of N. E. Railway, Chief Engineer (North Eastern Railway), Chief Signal & Telecommunication Engineer (North Eastern Railway), Chief Electrical Engineer (North Eastern Railway), and shall mean & include their successors, of the Successor Railway.
  - (d) "Divisional Railway Manager" shall mean the Officer- in – Charge of a Division of Zonal Railway and shall mean and include Divisional Railway Manager of the Successor Railway.
  - (e) "Engineer" shall mean the Executive Engineer, Divisional Signal & Telecom Engineer, Divisional Electrical Engineer in charge of the works AND the Deputy Chief Engineer, Dy. Chief Signal & Telecom Engineer, Deputy Chief Electrical Engineer of N.E. Railway Organisations on the N. E. Railway and shall mean & include the Engineers of the Successors Railway.
  - (f) "Engineer" shall mean the Divisional Engineer or the Executive Engineer, Divisional Signal & Telecom Engineer, Divisional Electrical Engineer, Divisional Mechanical Engineer in executive charge of the works and shall include the superior officers of Open Line and Construction organisations on the Railway of the Engineering, Signal & Telecom, Electrical and Mechanical 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 Successors Railway.
  - (g) "Contractor" shall mean the Person/Firm/LLP/Trust/Co-operative Society or Company whether incorporated or not who enters into the contract with the Railway and shall include their executors, administrators, successors and permitted assigns.
  - (h) "Contract" shall mean and include the Agreement of the Work Order, the accepted Bill(s) of Quantities or Chapter(s) of Standard Schedule of Rates (SSOR) of the 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.
  - (i) "Works" shall mean the works to be executed in accordance with the contract.
  - (j) "Specifications" shall mean the Standard Specifications for Materials & Works of Railway as specified by Railway under the authority of the Chief Engineer or as amplified, added to or superseded by Special Specifications, if any.
  - (k) Standard Schedule of Rates (SSOR) shall mean the schedule of Rates adopted by the Railway, which includes-
    - 1. "Unified Standard Schedule of Rates of the Railway (USSOR)" i.e. the Standard Schedule of Rates of the Railway issued under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents;
    - 2. "Delhi Schedule Of Rates (DSR)" i.e. the Standard Schedule of Rates published by Director General/ Central Public Works Department, Government of India, New Delhi, as adopted and modified by the Railway under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

- (l) "Drawing" shall mean the maps, drawings, plans and tracings or prints there of annexed to the contract and shall include any modifications of such drawings and further drawings as may be issued by the Engineer from time to time.
  - (m) "Constructional Plant" shall mean all appliances or things of whatsoever nature required for the execution, completion or maintenance of the works or temporary works (as hereinafter defined) but does not include materials or other things intended to form or forming part of the permanent work.
  - (n) "Temporary Works" shall mean all temporary works of every kind required for the execution completion and/or maintenance of the works.
  - (o) "Site" shall mean the lands and other places on, under, in or through which the works are to be carried out and any other lands or places provided by the Railway for the purpose of the contract.
  - (p) **"Period of Maintenance" shall mean the specified period of 12 months maintenance from the date of completion of the works, as certified by the Engineer.**  
**(This Condition is not applicable in case of contract for ballast supply, Carting/Transportation, Hiring of Road vehicle, Survey & Soil testing).**
  - (q) 'Contractor's authorized Engineer' shall mean a graduate Engineer or equivalent, having more than 3 years experience in the relevant field of construction work involved in the contract, duly approved by Engineer.
  - (r) Date of inviting tender shall be the date of publishing tender notice on IREPS website if tender is published on website or the date of publication in newspaper in case tender is not published on website.
  - (s) "Bill of Quantities" shall mean Schedule of Item(s) included in the tender document along with respective quantities and rates, accepted by the Railway.
- 1. (2) Singular and Plural:** Words importing the singular number shall also include the plural and vice versa where the context requires.
- 1.(3) Headings and Marginal Headings:** The headings and marginal headings in these Standard General Conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof the contract.

#### **GENERAL OBLIGATIONS**

- 2. (1) Execution Co-Relation and Intent of Contract Documents:** The contract documents shall be signed in triplicate by the Railway and the Contractor. The contract documents are complementary and what is called for by anyone shall be as binding as if called for by all, the intention of the documents is to include all labour and materials, equipments and transportation necessary for proper execution of work. Materials or works not covered by or properly inferable from any heading or class of the specifications shall not be supplied by the Railway to the Contractors unless distinctly specified in the contract documents. Materials or works described in words which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.
- 2.(2)** If a work is transferred from the jurisdiction of one Railway to another Railway or to a Project authority or vice versa while contract is in subsistence, the contract shall be binding on the Contractor and the Successor Railway/Project in the same manner & take effect in all respects as if the Contractor and the Successor Railway/Project were parties thereto from the inception and the corresponding officer or the Competent Authority in the Successor Railway/Project will exercise the same powers and enjoy the same authority as conferred to the Predecessor Railway/Project under the original contract/agreement entered into.
- 2. (3)** If for administrative or other reasons the contract is transferred to the Successor Railway, the contract shall, notwithstanding any things contained herein contrary there to, be binding on the Contractor and the Successor Railway in the same manner and take effect in all respects as if the Contractor and the Successor Railway had been parties thereto from the date of this contract.
- 3. (1) Law Governing the Contract:** The contract shall be governed by the law for the time being in force in the Republic of India.
- 3.(2) Compliance to Regulations and Bye-Laws:** The Contractor shall conform to the provision of any statute relating to the works and regulations and bye-laws of any local authority and of any water and lighting companies or undertakings, with whose system the work is proposed to be connected and shall before

making any variation from the drawings or the specifications that may be necessitated by so confirming give to the Engineer notice specifying the variation proposed to be made and the reason for making the variation and shall not carry out such variation until he has received instructions from the Engineer in respect thereof. The Contractor shall be bound to give all notices required by statute, regulations or bye- laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

**3.(3) Environmental and Forest clearances:**

The Railway represents and warrants that the environmental and forest clearances pertaining to the work commensurate with the progress of work/agreed programme will be obtained by Engineer. In the event of any delay in securing respective clearances leading to delay in execution of work, the Contractor shall be entitled to Extension of Time for the period of such delay in accordance with the provisions of Clause-17A(ii).

4. **Communications to be in Writing:** All notices, communications, reference and complaints made by the Railway or the Engineer or the Engineer's Representative or the Contractor inter-se concerning the works shall be in writing or e-mail on registered e-mail IDs i.e. the e mail id provided for correspondence in the contract agreement, otherwise email id registered with IREPS and no notice, communication, reference or complaint not in writing or through e-mail, shall be recognized.
5. **Service of Notices on Contractors:** The Contractor shall furnish to the Engineer the name, designation and address of his authorized agent and all complaints, notices, communications and references shall be deemed to have been duly given to the Contractor, if delivered to the Contractor or his authorized agent or left at or posted to the address so given and shall be deemed to have been so given in the case of posting on day on which they would have reached such address in the ordinary course of post or on the day on which they were so delivered or left. In the case of contract by partners, any change in the constitution of the firm shall be forthwith notified by the Contractor to the Engineer.
6. **Occupation and Use of Land:** No land belonging to or in the possession of the Railway shall be occupied by the Contractor without the permission of the Railway. The Contractor shall not use, or allow to be used the site for any purposes other than that of executing the works. Whenever non-railway bodies/persons are permitted to use railway premises with competent authority's approval, conservancy charges as applicable from time to time may be levied.
7. **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:

- (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.}\$  
  
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, 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 fulfilment 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.

8. **Assistance by Railway for the Stores to be obtained by the Contractor:** Owing to difficulty in obtaining certain materials (including Tools & Plant) in the market, the Railway may have agreed without any liability therefore to endeavour to obtain or assist the Contractor in obtaining the required quantities of such materials as may be specified in the Tender. In the event of delay or failure in obtaining the required quantities of the aforesaid material, the Contractor shall not be deemed absolved of his own responsibility and shall keep in touch with the day to day position regarding their availability and accordingly adjust progress of works including employment of labour and the Railway shall not in any way be liable for the supply of materials or for the non-supply thereof for any reasons whatsoever nor for any loss or damage arising in consequence of such delay or non-supply.
9. **Railway Passes:** No free railway passes shall be issued by the Railway to the Contractor or any of his employee/worker.
10. **Carriage of Materials:** No forwarding orders shall be issued by the Railway for the conveyance of Contractor's materials, tools and plant by train which may be required for use in the works and the Contractor shall pay full freight charges at public tariff rates therefor.
11. **Use of Ballast Trains:** The Railway may agree to allow the Contractor use of the ballast or material trains under such conditions as shall be specially prescribed, provided that the Contractor shall pay for the use thereof charges calculated at public tariff rates on the marked carrying capacity of each vehicle subject to specified minimum charge per day or part of day and provided further that the Contractor shall indemnify the Railway against any claims or damages arising out of the use or misuse thereof and against any liabilities under the Workmen's Compensation Act, 1923 or any statutory amendments thereto.
12. **Representation on Works:** The Contractor shall, when he is not personally present on the site of the works place, keep a responsible agent at the works during working hours who shall on receiving reasonable notice, present himself to the Engineer and orders given by the Engineer or the Engineer's representative to the agent shall be deemed to have the same force as if they had been given to the Contractor. Before absenting himself, the Contractor shall furnish the name and address of his agent for the purpose of this clause and failure on the part of the Contractor to comply with this provision at any time will entitle the Railway to rescind the contract under Clause 62 of these Conditions.
13. **Relics and Treasures:** All gold, silver, oil, other minerals of any description, all precious stones, coins, treasures relics antiquities and other similar things which shall be found in or upon the site shall be the property of the Railway and the Contractor shall duly preserve the same to the satisfaction of the Railway and shall from time to time deliver the same to such person or persons as the Railway may appoint to receive the same.
14. **Excavated Material:** The Contractor shall not sell or otherwise dispose of or remove except for the purpose of this contract, the sand, stone, clay ballast, earth, trees, rock or other substances or materials which may be obtained from any excavation made for the purpose of the works or any building or produced upon the site at the time of delivery of the possession thereof but all the substances, materials, buildings and produce shall be the property of the Railway provided that the Contractor may, with the permission of the Engineer, use the same for the purpose of the works either free of cost or pay the cost of the same at such rates as may be determined by the Engineer.
15. **Indemnity by Contractors:** 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.
- 16.(1) **Security Deposit:** 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 Depositor 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.

- 16.(2) (i) Refund of Security Deposit:** Security Deposit mentioned in sub clause (1) above shall be returned to the Contractor along with or after, the following:

Final Payment of the Contract as per clause 51.(1) **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), in case applicable.

- 16.(2) (ii) Forfeiture of Security Deposit:** Whenever the contract is rescinded as a whole under clause 62 (1) of these conditions, 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 these conditions, the Security Deposit shall not be forfeited.

- 16.(3)** 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 this clause will be payable with interest accrued thereon.

**16.(4) Performance Guarantee:**

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 to the contractor against that particular 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.

**The failed Contractor shall be debarred from participating in re-tender for that work.**

- (b) **The successful bidder shall submit the Performance Guarantee (PG) amounting to 5% of the original contract value and Additional Performance Guarantee as per clause 16(4)(h) in any of the following forms :**

- (i) **A deposit of Cash;**
- (ii) **Irrevocable Bank Guarantee;**
- (iii) **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.**

- (iv) **Government Securities including State Loan Bonds at 5% below the market value;**

- (v) Pay Orders and Demand Drafts tendered by any scheduled Commercial Bank of India.
- (vi) Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
- (vii) Deposit in the Post Office Saving Bank;
- (viii) Deposit in the National Savings Certificates;
- (ix) Twelve years National Defence Certificates;
- (x) Ten years Defence Deposits;
- (xi) National Defence Bonds and
- (xii) Unit Trust Certificates at 5% below market value or at the face value whichever is less. Also, FDR in favour of FA&CAO (free from any encumbrance) may be accepted.
- (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 these conditions.
- (h) 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 below:

Bid quoted in % of advertised cost	Additional Performance Guarantee (%)
Below 0 – 5% (inclusive)	Nil
Below 5%	5%

- 17. Force Majeure Clause:** If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics/ pandemics, strikes, lockouts or acts of God (hereinafter, referred to events) provided, notice of the happening of any such event is given by either party to the other within 30 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non- performance or delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Engineer as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 120 days, either party may at its option terminate the contract by giving notice to the other party.
- 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 17-A, 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) 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.

NOTE: 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.

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.

**17C Bonus for Early Completion of Work:** In 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.

**18.(1) Illegal Gratification:**

Procuring authorities as well as bidders, contractors and consultants should observe the highest standard of ethics and should not indulge in the following prohibited practices, either directly indirectly, at any stage during the procurement process or during execution of resultant contracts:

- i) "Corrupt practice": making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- ii) "Fraudulent practice": any omission or that misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- iii) "Anti-competitive practice": any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act, 2002, between two or more bidders, with or without the knowledge of the procuring entity, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;
- iv) "Coercive practice": any coercion or any threat to impair or harm, directly or indirectly, any party or its property to influence the procurement process affect the execution of a contract;
- v) "Conflict of interest" (COI): any personal, financial, or business relationship between the bidder and any personnel of the procuring entity who are directly or indirectly related to the procurement or execution process of the contract, which can affect the decision of the procuring entity directly or indirectly;
- vi) "Undue Advantage": improper use of information obtained by the bidder from the procuring entity with an intent to gain an unfair advantage in the procurement process or for personal gain. This also includes if the bidder (or his allied firm) provided services for the need assessment/procurement planning of the tender process in which he is participating;
- vii) "Obstructive practice": materially impede the procuring entity's investigation of a procurement process either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to such investigation or from pursuing the investigation; or by impeding the procuring entity's rights of audit or access to information;

**18.(2) Punitive Provisions:** Without prejudice to and in addition to the rights of the procuring entity to other penal provisions as per the bid documents or contract, if the procuring entity comes to a conclusion that a (prospective) bidder/contractor directly or through an agent, has violated this code of integrity in competing for the contract or in executing a contract, the procuring entity may take appropriate measures including one or more of the following:

- i) If his bids are under consideration in any procurement
  - a) Forfeiture or encashment of bid security;
  - b) calling off of any pre-contract negotiations; and
  - c) rejection and exclusion of the bidder from the procurement process
- ii) If a contract has already been awarded
  - a) Cancellation of the relevant contract and recovery of compensation for loss incurred by the procuring entity;
  - b) Forfeiture or encashment of any other security or bond relating to the procurement;
  - c) Recovery of payments including advance payments, if any, made by the procuring entity along with interest thereon at the prevailing rate;
- iii) Provisions in addition to above:
  - a) Removal from the list of enlisted contractors and banning/debarment of the bidder from participation in future

procurement of the procuring entity for a period not less than one year;

- b) In case of anti-competitive practices, information for further processing may be filed under a signature of the Joint Secretary level officer, with the Competition Commission of India;
- c) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.

Any question or dispute as to the commission of any such offence or compensation payable to the Railway under this Clause shall be settled by the General Manager of the Railway, in such a manner as he shall consider fit & sufficient and his decision shall be final & conclusive.

#### EXECUTION OF WORKS

- 19.(1) **Contractor's understanding:** It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the progress of the works, the general and local conditions, the labour conditions prevailing therein and all other matters which can in any way affect the works under the contract.
- 19.(2) **Commencement of Works:** The Contractor shall commence the works within 15 days after the receipt by him of an order in writing to this effect from the Engineer and shall proceed with the same with due expedition and without delay
- 19.(3) **Accepted Programme of Work:** The Contractor who has been awarded the work shall as soon as possible but not later than 30 days after the date of receipt of the acceptance letter in respect of contracts with initial completion period of two years or less or not later than 90 days for other contracts have to submit the detailed programme of work indicating the time schedule of various items of works in the form of Bar Chart/PERT/CPM. He shall also submit the details of organisation (in terms of labour and supervisors), plant and machinery that he intends to utilize (from time to time) for execution of the work within stipulated date of completion. The programme of work amended as necessary by discussions with the Engineer, shall be treated as the agreed programme of the work for the purpose of this contract and the Contractor shall endeavor to fulfil this programme of work. The progress of work will be watched accordingly and the liquidated damages will be with reference to the overall completion date. Nothing stated herein shall preclude the Contractor in achieving earlier completion of item or whole of the works than indicated in the programme.

In Contracts for works of New Line/Gauge Conversion/Doubling/Railway Electrification, finalized through Tenders having advertised value more than Rs.100 crores, the Contractor shall submit a detailed time programme to the Engineer within 30 days after issue of LOA. The program shall include the physical and Financial Progress vis-à-vis program and forecast cash flow adopting Project Management Software such as **Primavera/Sure Track/MS Project etc.** The program must identify the milestones, interface requirements and program reporting elements. The Contractor shall supply, free of cost one set of authorized software to the Engineer and the soft copy of structured program for the project. This shall be updated every month. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress. Each programme shall include:

The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage, Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing, each of these stages for work by each Subcontractor, if any, the sequence and timing of inspections and tests specified in the Contract, and a supporting report which includes:

a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and details showing the Contractor's reasonable estimate for the number of each class of Contractor's Personnel & Equipment, required on the Site for each major stage.

Unless the Engineer, within 21 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Engineer shall be entitled to rely upon the programme when planning their activities.

If, at any time, the Engineer gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Engineer within 15 days in accordance with this Sub-Clause.

- 19.(4) Setting out of Works:** The Contractor shall be responsible for the correct setting out of all works in relation to original points, lines and levels of reference at his cost. The Contractor shall execute the work true to alignment, grade, levels and dimensions as shown in the drawing and as directed by the Engineer's representative and check these at frequent intervals. The Contractor shall provide all facilities like labour and instruments and shall cooperate with the Engineer's representative for checking of all alignment, grades, levels and dimensions. If, at any time, during the progress of the works any error appear or arise in any part of the work, the Contractor, on being required so to do by the Engineer's representative shall, at his own cost rectify such errors, to the satisfaction of the Engineer's representative.
- Such checking shall not absolve the Contractor of his own responsibility of maintaining accuracy in the work. The Contractor shall carefully protect and preserve all bench marks, sight rails, pegs and other things used in setting out the work.
- 20.(1) Compliance to Engineer's Instructions:** The Engineer shall direct the order in which the several parts of the works shall be executed and the Contractor shall execute without delay all orders given by the Engineer from time to time; but the Contractor shall not be relieved thereby from responsibility for the due performance of the works in all respects.
- 20.(2) Alterations to be Authorized:** No alterations in or additions to or omissions or abandonment of any part of the works shall be deemed authorised, except under instructions from the Engineer. The Contractor shall be responsible to obtain such instructions in each and every case in writing from the Engineer.
- 20.(3) Extra Works:** Should works over and above those included in the contract require to be executed at the site, the Contractor shall have no right to be entrusted with the execution of such works which may be carried out by another Contractor or Contractors or by other means at the option of the Railway.
- 20.(4) Separate Contracts in Connection with Works:** The Railway shall have the right to let other contracts in connection with the works. The Contractor shall afford other Contractors reasonable opportunity for the storage of their materials and the execution of their works and shall properly connect and coordinate his work with theirs. If any part of the Contractor's work depends upon proper execution or result upon the work of another Contractor(s), the Contractor shall inspect and promptly report to the Engineer any defects in such works that render it unsuitable for such proper execution and results. The Contractor's failure so-to inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other Contractor's work after the execution of his work.
- 21. Instruction of Engineer's Representative:** Any instructions or approval given by the Engineer's representative to Contractor in connection with the works shall bind the Contractor as though it had been given by the Engineer provided always as follows:
- (a) Failure of the Engineer's representative to disapprove any work or materials shall not prejudice the power of the Engineer thereafter to disapprove such work or material and to order the removal or breaking up thereof.
  - (b) If the Contractor shall be dissatisfied by reason of any decision of the Engineer's representative, he shall be entitled to refer the matter to the Engineer who shall there upon confirm or vary such decision.
- 22.(1) Adherence to Specifications and Drawings:** The site and the detailed drawings shall be made available to the contractor commensurate with the accepted programme of work submitted under clause 19(3). The whole of the works shall be executed in perfect conformity with the specifications and drawings of the contract. If Contractor performs any works in a manner contrary to the specifications or drawings or any

of them and without such reference to the Engineer, he shall bear all the costs arising or ensuing therefrom and shall be responsible for all loss to the Railway.

- 22.(2) **Drawings and Specifications of the Works:** The Contractor shall keep one copy of Drawings and Specifications at the site, in good order, and such contract documents as may be necessary, available to the Engineer or the Engineer's Representative.
- 22.(3) **Ownership of Drawings and Specifications:** All Drawings and Specifications and copies thereof furnished by the Railway to the Contractor are deemed to be the property of the Railway. They shall not be used on other works and with the exception of the signed contract set, shall be returned by the Contractor to the Railway on completion of the work or termination of the Contract.
- 22.(4) **Compliance with Contractor's Request for Details:** The Engineer shall furnish with reasonable promptness, after receipt by him of the Contractor's request, additional instructions by means of drawings or otherwise, necessary for the proper execution of the works or any part thereof. All such drawings and instructions shall be consistent with the Contract Documents and reasonably inferable there from.
- 22.(5) **Meaning and Intent of Specification and Drawings:** If any ambiguity arises as to the meaning and intent of any portion of the Specifications and Drawings or as to execution or quality of any work or material, or as to the measurements of the works the decision of the Engineer thereon shall be final subject to the appeal (within 7 days of such decision being intimated to the Contractor) to the Chief Engineer who shall have the power to correct any errors, omissions, or discrepancies in aforementioned items and whose decision in the matter in dispute or doubt shall be final and conclusive.
23. **Working during Night:** The Contractor shall not carry out any work between sun-set and sun-rise without the previous permission of the Engineer. However, if the Engineer is satisfied that the work is not likely to be completed in time except by resorting to night work, he may order the same without confirming any right on the Contractor for claiming any extra payment for the same.
24. **Damage to Railway Property or Private Life and Property:** The Contractor shall be responsible for all risk to the work and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of the Railway or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the Railway, although all reasonable and proper precautions may have been taken by the Contractor. In case the Railway shall be called upon to make good any costs, loss or damages, or to pay any compensation, including that payable under the provisions of the Workmen's Compensation Act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid by reason of any act, or any negligence or omissions on the part of the Contractor; the amount of any costs or charges including costs and charges in connection with legal proceedings, which the Railway may incur in reference thereto, shall be charged to the Contractor. The Railway shall have the power and right to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the Contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to Contractor, as aforesaid; any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the Contractor.
25. **Sheds, Storehouses and Yards:** The Contractor shall at his own expense provide himself with sheds, storehouses and yards in such situations and in such numbers as in the opinion of the Engineer is requisite for carrying on the works and the Contractor shall keep at each such sheds, storehouses and yards a sufficient quantity of materials and plant in stock as not to delay the carrying out of the works with due expedition and the Engineer and the Engineer's representative shall have free access to the said sheds, store houses and yards at any time for the purpose of inspecting the stock of materials or plant so kept in hand, and any materials or plant which the Engineer may object to shall not be brought upon or used in the works, but shall be forthwith removed from the sheds, storehouses or yards by the Contractor. The Contractor shall at his own expenses provide and maintain suitable mortar mills, soaking vats or any other equipments necessary for the execution of the works.
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 subcontractor, 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 these conditions.
- 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 as under as 'Special Condition of Contract'.
- (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.
  - (c) If contract value is more than 5.0 Crore, additional qualified graduate engineer shall be deployed by the contractor as desired by the Engineer – in – charge and the decision will be final.
- 26A.4 Further in case the contractor fails to employ the Qualified Engineers, as aforesaid in Para 26A.2, shall be liable to pay an amount of Rs.50,000/- and Rs.30000/-, for each month or part thereof for the default period for the provisions respectively as contained in Para (a), (b) & (c) above with latest amendment if any.
- 27.(1) **Workmanship and Testing:** The whole of the works and/or supply of materials specified and provided in the contract or that may be necessary to be done in order to form and complete any part thereof shall be executed in the best and most substantial workman like manner with materials of the best and most approved quality of their respective kinds, agreeable to the particulars contained in or implied by the specifications and as referred to in and represented by the drawings or in such other additional particulars, instructions and drawings given during the carrying on of the works and to the entire satisfaction of the Engineer according to the instructions and directions which the Contractors may from time to time receive from the Engineer. The materials may be subjected to tests by means of such machines, instruments and appliances as the Engineer may direct and wholly at the expense of the Contractor.
- 27.(2) **Removal of Improper Work and Materials:** 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 therefore, 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 these conditions.
  - (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.
28. **Facilities for Inspection:** The Contractor shall afford the Engineer and the Engineer's Representative every facility for entering in and upon every portion of the work at all hours for the purpose of inspection or otherwise and shall provide all labour, materials, planks, ladders, pumps, appliances and things of every kind required for the purpose and the Engineer and the Engineer's Representative shall at all times have free access to every part of the works and to all places at which materials for the works are stored or being prepared.

29. **Examination of Work before Covering Up:** The Contractor shall give 7 days' notice to the Engineer or the Engineer's Representative whenever any work or materials are intended to be covered up in the earth, in bodies or walls or otherwise to be placed beyond the reach of measurements in order that the work may be inspected or that correct dimensions may be taken before being so covered, placed beyond the reach of measurement in default whereof, the same shall at the option of the Engineer or the Engineer's Representative be uncovered and measured at the Contractor's expense or no allowance shall be made for such work or materials.
30. **Temporary Works:** All temporary works necessary for the proper execution of the works shall be provided and maintained by the Contractor and subject to the consent of the Engineer shall be removed by him at his expenses when they are no longer required and in such manner as the Engineer shall direct. In the event of failure on the part of the Contractor to remove the temporary works, the Engineer will cause them to be removed and cost as increased by supervision and other incidental charges shall be recovered from the Contractor. If temporary huts are provided by the Contractor on the Railway land for labour engaged by him for the execution of works, the Contractor shall arrange for handing over vacant possession of the said land after the work is completed; if the Contractor's labour refuse to vacate, and have to be evicted by the Railway, necessary expenses incurred by the Railway in connection therewith shall be borne by the Contractor.
- 31.(1) **Contractor to Supply Water for Works:** Unless otherwise provided in the Contract, the Contractor shall be responsible for the arrangements to obtain supply of water necessary for the works.
- 31.(2) **Water Supply from Railway System:** The Railway may supply to the Contractor part or whole of the quantity of the water required for the execution of works from the Railway's existing water supply system at or near the site of works on specified terms and conditions and at such charges as shall be determined by the Railway and payable by the Contractor, provided that the Contractor shall arrange, at his own expense, to effect the connections and lay additional pipelines and accessories on the site and that the Contractor shall not be entitled to any compensation for interruption or failure of the water supply.
- 31.(3) **Water Supply by Railway Transport:** In the event of the Railway arranging supply of water to the Contractor at or near the site of works by travelling water tanks or other means, the freight and other charges incurred thereby, including demurrage charges that may be levied, shall be paid by the Contractor in addition to the charges referred to in Sub-Clause (2) of the Clause provided that the Contractor shall not be entitled to any compensation for interruption or failure of the water supply.
- 31.(4)(a) **Contractor to Arrange Supply of Electric Power for Works:** Unless otherwise provided in the contract, the Contractor shall be responsible for arrangements to obtain supply of Electric Power for the works.
- (b) **Electric Supply from the Railway System:** The Railway may supply to the Contractor part or whole of the electric power wherever available and possible, required for execution of works from the Railway's existing electric supply systems at or near the site of works on specified terms and conditions and such charges as shall be determined by the Railway and payable by the Contractor provided the cost of arranging necessary connections to the Railway's Electric Supply systems and laying of underground/overhead conductor, circuit protection, electric power meters, transmission structure, shall be borne by the Contractor and that the Contractor shall not be entitled to any compensation for interruption or failure of the Electric supply system.
32. **Property in Materials and Plant:** The materials and plant brought by the Contractor upon the site or on the land occupied by the Contractor in connection with the works and intended to be used for the execution thereof shall immediately be deemed to be the property of the Railway. Such of them as during the progress of the works are rejected by the Engineer under Clause 25 of these conditions or are declared by him not to be needed for the execution of the works or such as on the grant of the certificate of completion remain unused shall immediately on such rejection, declaration or grant cease to be deemed the property of the Railway and the Contractor may then (but not before) remove them from the site or the said land. This clause shall not in any way diminish the liability of the Contractor nor shall the Railway be in any way answerable for any loss or damage which may happen to or in respect of any such materials or plant either by the same being lost, stolen, injured or destroyed by fire, tempest or otherwise.
- 33.(1) **Tools, Plant and Materials Supplied by Railway:** The Contractor shall take all reasonable care of all tools, plant and materials or other property whether of a like description or not belonging to the Railway and committed to his charge for the purpose of the works and shall be responsible for all damage or loss caused by him, his agents, permitted sub-contractor, or his workmen or others while they are in his charge. The Contractors shall sign accountable receipts for tools, plants and materials made over to him by the



Engineer and on completion of the works shall hand over the unused balance of the same to the Engineer in good order and repair, fair wear and tear excepted, and shall be responsible for any failure to account for the same or any damage done thereto.

- 33.(2) **Hire of Railway's Plant:** The Railway may hire to the Contractor such plant as concrete mixers, compressors and portable engines for use during execution of the works on such terms as may be specified in the special conditions or in a separate agreement for Hire of Plant.
- 34.(1) **Precaution During Progress of Works:** During the execution of works, unless otherwise specified, the Contractor shall at his own cost provide the materials for and execute all shoring, timbering and strutting works as is necessary for the stability and safety of all structures, excavations and works and shall ensure that no damage, injury or loss is caused or likely to be caused to any person or property.
- 34.(2) **Roads and Water Courses:** Existing roads or water courses shall not be blocked cut through, altered, diverted or obstructed in any way by the Contractor, except with the permission of the Engineer. All compensations claimed for any unauthorized closure, cutting through, alteration, diversion or obstruction to such roads or water courses by the Contractor or his agent or his staff shall be recoverable from the Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.
- 34.(3) **Provision of Access to Premises:** During progress of work in any street or thoroughfare, the Contractor shall make adequate provision for the passage of traffic, for securing safe access to all premises approached from such street or thoroughfare and for any drainage, water supply or means of lighting which may be interrupted by reasons of the execution of the works and shall erect and maintain at his own cost barriers, lights and other safeguards as prescribed by the Engineer, for the regulation of the traffic, and provide watchmen necessary to prevent accidents. The works shall in such cases be executed night and day, if so ordered by the Engineer and with such vigour so that the traffic way be impeded for as short a time as possible.
- 34.(4) **Safety of Public:** The Contractor shall be responsible to take all precautions to ensure the safety of the public whether on public or railway property and shall post such look out men as may, in the opinion of the Engineer, be required to comply with regulations appertaining to the work. Contractor shall ensure placement of barricading / partitions at the place of work to ensure safety of habitants of adjacent area, failing which Engineer may advise stoppage of work as per his discretion.
- 34.(5) **Display Board:** The Contractor shall be responsible for displaying the details of works i.e. name of work, approximate cost, expected date of completion, name and address of the Contractor and address of Engineer on a proper steel Board of size not less than 1m x 1m.
35. **Use of Explosives:** Explosives shall not be used on the works or on the site by the Contractor without the permission of the Engineer and then also only in the manner and to the extent to which such permission is given. Where explosives are required for the works, they shall be stored in a special magazine to be provided by and at the cost of the Contractor in accordance with the Explosive Rules. The Contractor shall obtain the necessary license for the storage and the use of explosives. All operations in which or for which explosives are employed shall be at the sole risk and responsibility of the Contractor and the Contractor shall indemnify the Railway in respect thereof.
- 36.(1) **Suspension of Works:** The Contractor shall on the order of the Engineer, suspend the progress of the works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Engineer. If such suspension is:
- (a) Provided for in the contract, or
  - (b) Necessary for the proper execution of the works or by the reason of weather conditions or by some default on the part of the Contractor, and or
  - (c) Necessary for the safety of the works or any part thereof.
  - (d) Necessary for the safety of adjoining public or other property or safety of the public or workmen or those who have to be at the site, or
  - (e) Necessary to avoid disruption of traffic and utilities, as also to permit fast repair and restoration of any damaged utilities, or
  - (f) Due to instruction of The National Green Tribunal or any other statutory authority due to high level of pollution in the city of worksite.
- 36.(2) The Contractor shall not be entitled to the extra costs, if any, incurred by him during the period of suspension of the works, but in the event of any suspension ordered by the Engineer for reasons other than

aforementioned and when each such period of suspension exceeds 14 days, the Contractor shall be entitled to such extension of time for completion of the works as the Engineer may consider proper having regard to the period or periods of such suspensions and to such compensations as the Engineer may consider reasonable in respect of salaries or wages paid by the Contractor to his employees during the periods of such suspension.

- 36.(3) Suspension Lasting More than 3 Months:** If the progress of the works or any part thereof is suspended on the order of the Engineer for more than three months at a time, the Contractor may serve a written notice on the Engineer requiring permission within 15 days from the receipt thereof to proceed with the works or that part thereof in regard to which progress is suspended and if such permission is not granted within that time the Contractor by further written notice so served may, but is not bound to, elect to treat the suspension where it affects part only of the works as an omission of such part or where it affects the whole of the works, as an abandonment of the contract by the Railway.

**37. Rates for Items of Works:**

- (i) The rates, entered in the accepted Schedule of Rates 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 these conditions 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 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.

- 38. Demurrage and Wharfage Dues:** Demurrage charges calculated in accordance with the scale in force for the time being on the Railway and incurred by the Contractor failing to load or unload any goods or materials within the time allowed by the Railway for loading as also wharfage charges, of materials not removed in time, as also charges due on consignments booked by or to him shall be paid by the Contractor, failing which such charges shall be debited to the Contractor's account in the hands of the Railway and shall be deducted from any sums which may become due to him in terms of the contracts.

**39.(1) Rates for Extra Items of Works:**

- (a) Standard Schedule of Rates (SSOR) Items: Any item of work carried out by the Contractor on the instructions of the Engineer which is not included in the accepted Bill(s) of Quantities but figures in the Standard Schedule of Rates (SSOR), shall be executed at the rates set forth in the "Standard Schedule of Rates (SSOR)" modified by the tender percentage as accepted in the contract for that chapter of Standard Schedule of Rates (SSOR).

For item(s) not covered in this sub clause, the rate shall be decided as agreed upon between the Engineer and the Contractor before the execution of such items of work as per sub clause (b).

- (b) Other Items: For any item of work to be carried out by the Contractor but not included in the accepted Bill(s) of Quantities and also not covered under sub clause (a) above, the Contractor shall be bound to notify the

Engineer at least seven days before the necessity arises for the execution of such items of works that the accepted Bill(s) of Quantities does not include rate or rates for such extra work involved. The rates payable for such items shall be decided at the meeting to be held between the Engineer and Contractor, in as short a period as possible after the need for the special item has come to the notice. In case the Contractor fails to attend the meeting after being notified to do so or in the event of no settlement being arrived at, the Railway shall be entitled to execute the extra works by other means and the Contractor shall have no claim for loss or damage that may result from such procedure.

The assessment of rates for extra item(s) shall be arrived at based on the prevailing market rates of labour, machinery & materials and by taking guidance from the following documents in order of priority:

- i. Analysis of Rates for “Unified Standard Schedule of Rates of Indian Railways (USSOR)”
- ii. Analysis of Rates for “Delhi Schedule of Rates issued by CPWD (DSR)”
- iii. Market Analysis

**39.(2)** Provided that if the Contractor commences work or incurs any expenditure in regard thereto before the rates as determined and agreed upon as lastly hereuntoforesaid, then and in such a case the Contractor shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of determination of the rates as aforesaid according to the rates as shall be fixed by the Engineer. However, if the Contractor is not satisfied with the decision of the Engineer in this respect, he may appeal to the Chief Engineer within 30 days of getting the decision of the Engineer, supported by analysis of the rates claimed. The Chief Engineer's decision after hearing both the parties in the matter would be final and binding on the Contractor and the Railway.

**40.(1) Handing over of Works:** The Contractor shall be bound to hand over the works executed under the contract to the Railway complete in all respects to the satisfaction of the Engineer. The Engineer shall determine the date on which the work is considered to have been completed, in support of which his certificate shall be regarded as sufficient evidence for all purposes. The Engineer shall determine from time to time, the date on which any particular section of the work shall have been completed, and the Contractor shall be bound to observe any such determination of the Engineer.

**40.(2) Clearance of Site on Completion:** On completion of the works, the Contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and works clean and in a workman like condition to the satisfaction of the Engineer. No final payment in settlement of the accounts for the works shall be paid, held to be due or shall be made to the Contractor till, in addition to any other condition necessary for final payment, site clearance shall have been effected by him, and such clearance may be made by the Engineer at the expense of the Contractor in the event of his failure to comply with this provision within 7 days after receiving notice to that effect. Should it become necessary for the Engineer to have the site cleared at the expenses of the Contractor, the Railway shall not be held liable for any loss or damage to such of the Contractor's property as may be on the site and due to such removal there from which removal may be affected by means of public sales of such materials and property or in such a way as deemed fit and convenient to the Engineer.

**40A:** At the final stage of completion/ commissioning of work, in case the contractor fails to complete the final part(s) of the work and the value of such part(s) of the work is limited to 5% of the original contract value, the Engineer may allow/decide for offloading of such part(s) of works, either after the Contractor's request in writing to do so or after serving a 14 (Fourteen) days suo-moto notice (as per annexure- VIIA), if the Engineer is of the opinion that :-

- (i) Such Offloading of works (up to 5% of original contract value) would enable successful completion of contract/work,
- (ii) Termination/ Part termination of the contract at this stage is not be in the interest of the Railway/work;, and
- (iii) The anticipated additional cost for execution of such works through other mode would not be substantial and can be recovered from the pending dues of the contractor;

The Contractor shall be informed, in due course, by the Engineer of the mode and cost of execution of such offloaded work through other agency (ies) (as per annexure- VIIB). The extra expenditure so incurred in execution of the offloaded work, shall be recovered from subsequent Bill(s) or any other dues of the Contractor, but not exceeding the value of Performance Guarantee available in the contract. There shall be no other repercussion of such offloading on execution of the balance contract. The Contractor shall have no claim on account of above mentioned offloading of works.

## VARIATIONS IN EXTENT OF CONTRACT

- 41. Modification to Contract to be in Writing:** In the event of any of the provisions of the contract required to be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the Railway and the Contractor and no work shall proceed under such modifications until this has been done. Any verbal or written arrangement abandoning, modifying, extending, reducing or supplementing the contract or any of the terms thereof shall be deemed conditional and shall not be binding on the Railway unless and until the same is incorporated in a formal instrument and signed by the Railway and the Contractor, and till then the Railway shall have the right to repudiate such arrangements.
- 42.(1) Powers of Modification to Contract:** The Engineer on behalf of the Railway shall be entitled by order in writing to enlarge or extend, diminish or reduce the works or make any alterations in their design, character position, site, quantities, dimensions or in the method of their execution or in the combination and use of materials for the execution thereof or to order any additional work to be done or any works not to be done and the Contractor will not be entitled, to any compensation for any increase/reduction in the quantities of work but will be paid only for the actual amount of work done and for approved materials supplied against a specific order.
- 42.(2) (i) Unless otherwise specified in the special conditions of the contract, the accepted variation in quantity of each individual item of the contract would be upto 25% of the quantity originally contracted, except in case of foundation work (in which no variation limit shall apply). However, the rates for the increased quantities shall be as per sub- para (iii) below.
- (ii) The Contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any claim or any compensation whatsoever upto the limit of 25% variation in quantity of individual item of works.
- (iii) In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, then same shall be executed at following rates
- (a) Quantities operated in excess of 125% but upto 140% of the agreement quantity of the concerned item, shall be paid at 98% of the rate awarded for that item in that particular tender;
- (b) Quantities operated in excess of 140% but upto 150% of the agreement quantity of the concerned item shall be paid at 96% of the rate awarded for that item in that particular tender;
- (c) Variation in quantities of individual items beyond 150% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.
- (d) **Variation to quantities of Minor Value Item:** The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1 % of the total original agreement value.
- d.(i) Quantities operated upto and including 100% of the agreement quantity of the concerned minor value item, shall be paid at the rate awarded for that item in that particular tender;
- d.(ii) Quantities operated in excess of 100% but upto 200% of the agreement quantity of the concerned minor value item, shall be paid at 98% of the rate awarded for that item in that particular tender;
- d.(iii) Variation in quantities of individual minor value item beyond 200% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.
- (iv) In case of earthwork, the variation limit of 25% shall apply to the gross quantity of earthwork items and variation in the quantities of individual classifications of soil shall not be subject to this limit.
- (v) As far as Standard Schedule of Rates (SSOR) items are concerned, the variation limit of 25% would apply to the value of SSOR schedule(s) as a whole and not on individual SSOR items. However, in case of Non Standard Schedule of Rates (SSOR) items, the limit of 25% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).
- 42.(3) Valuation of Variations:** The enlargements, extensions, diminution, reduction, alterations or additions referred to in Sub-Clause (2) of this Clause shall in no degree affect the validity of the contract; but shall be performed by the Contractor as provided therein and be subject to the same conditions, stipulations and obligations as if they had been originally and expressly included and provided for in the Specifications and Drawings and the amounts to be paid therefor shall be calculated in accordance with the accepted

Bill(s) of Quantities. Any extra items/quantities of work falling outside the purview of the provisions of Sub-Clause (2) above shall be paid for at the rates determined under Clause-39 of these Conditions.

#### CLAIMS

- 43.(1) **Quarterly Statement of Claims:** The Contractor shall prepare and furnish to the Engineer once in every quarter commencing from the month following the month of issue of Letter of Acceptance, an account giving full and detailed particulars of all claims for any additional expenses to which the Contractor may consider himself entitled to and of all extra or additional works ordered by the Engineer which he has executed during the preceding month quarter and no claim for payment for such work will be considered which has not been included in such particulars.
- 43.(2) **Signing of "No Claim" Certificate:** The Contractor shall not be entitled to make any claim whatsoever against the Railway under or by virtue of or arising out of this contract, nor shall the Railway entertain or consider any such claim, if made by the Contractor, after he shall have signed a "No Claim" Certificate in favour of the Railway in such form as shall be required by the Railway after the works are finally measured up. The Contractor shall be debarred from disputing the correctness of the items covered by "No Claim" Certificate or demanding a clearance to arbitration in respect thereof.

#### MEASUREMENTS, CERTIFICATES AND PAYMENTS

44. **Quantities in Bill(s) of Quantities Annexed to Contract:** The quantities set out in the accepted Bill(s) of Quantities with items of works quantified are the estimated quantities of the works and they shall not be taken as the actual and correct quantities of the work to be executed by the Contractor in fulfilment of his obligations under the contract.
- 45(i). **Measurement of Works by Railway:** The Contractor shall be paid for the works at the rates in the accepted Bill(s) of Quantities and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Engineer or the Engineer's representative in accordance with the rules prescribed for the purpose by the Railway. The quantities for items the unit of which in the accepted Bill(s) of Quantities is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted Bill(s) of Quantities is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Engineer shall be proper having regard to the progress of works. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Contractor who shall be present at the site and shall sign the results of the measurements (which shall also be signed by the Engineer or the Engineer's representative) recorded in the official measurements book as an acknowledgement of his acceptance of the accuracy of the measurements. Failing the Contractor's attendance, the work may be measured up in his absence and such measurements shall, notwithstanding such absence, be binding upon the Contractor whether or not he shall have signed the measurement books provided always that any objection made by him to measurement shall be duly investigated and considered in the manner set out below:
- (a) It shall be open to the Contractor to take specific objection to any recorded measurements or Classification on any ground within seven days of the date of such measurements. Any re-measurement taken by the Engineer or the Engineer's representative in the presence of the Contractor or in his absence after due notice has been given to him in consequence of objection made by the Contractor shall be final and binding on the Contractor and no claim whatsoever shall thereafter be entertained regarding the accuracy and Classification of the measurements.
- (b) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements.
- 45(ii). **Measurement of Works by Contractor's Authorized Representative (in case the contract provides for the same):**
- (a) The Contractor shall be paid for the works at the rates in the accepted Bill(s) of Quantities and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Contractor's authorized Engineer in accordance with the rules prescribed for the purpose by the Railway. The quantities for items the unit of which in the accepted Bill(s) of Quantities is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted Bill(s) of Quantities is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Engineer.

The date and time of test checks shall be communicated to the Contractor who shall be present at the site and shall witness the test checks, failing the Contractor's attendance the test checks may be conducted in his absence and such test checks shall notwithstanding such absence be binding upon Contractor provided always that any objection made by Contractor to test check shall be duly investigated and considered in the manner set out below:

- (i) It shall be open to the Contractor to take specific objection to test checks of any recorded measurement within 7 days of date of such test checks. Any re-test check done by the concerned Railway's authority in the presence of the Contractor or in his absence after due notice given to him in consequent of objection made by the Contractor shall be final and binding on the Contractor and no claim whatsoever shall thereafter be entertained regarding the accuracy and classification of the measurements.
- (ii) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements.
- (b) **Incorrect measurement, actions to be taken:** If in case during test check or otherwise, it is detected by the Engineer that agency has claimed any exaggerated measurement or has claimed any false measurement for the works which have not been executed; amounting to variation of 5% or more of claimed gross bill amount, action shall be taken as following:
  - (i) On first occasion of noticing exaggerated/ false measurement, Engineer shall recover liquidated damages equal to 10% of claimed gross bill value.
  - (ii) On any next occasion of noticing any exaggerated/false measurement, railway shall recover liquidated damages equal to 15% of claimed gross bill value. In addition the facility of recording of measurements by Contractor as well as release of provisional payment shall be withdrawn. Once withdrawn, measurements shall be done by railway as per clause 45(i) above.
- 46.(1) **"On-Account " Payments:** The Contractor shall be entitled to be paid from time to time by way of "On-Account" payment only for such works as in the opinion of the Engineer he has executed in terms of the contract. All payments due on the Engineer's/Engineer's Representative's certificates of measurements or Engineer's certified "Contractor's authorized Engineer's measurements" shall be subject to any deductions which may be made under these presents and shall further be subject to, unless otherwise required by Clause 16 of these Conditions, a retention of six percent by way of Security Deposits, until the amount of Security Deposit by way of such retentions shall amount to 5% of the total value of the contract provided always that the Engineer may by any certificate make any correction or modification in any previous certificate which shall have been issued by him and that the Engineer may withhold any certificate, if the works or any part thereof are not being carried out to his satisfaction.
- 46.(2) **Rounding off Amounts:** The total amount due on each certificate shall be rounded off to the nearest rupee, i.e. sum less than 50 paise shall be omitted and sums of 50 paise and more upto ₹1 will be reckoned as ₹ 1.
- 46.(3) **On Account Payments not Prejudicial to Final Settlement:** "On-Account" payments made to the Contractor shall be without prejudice to the final making up of the accounts (except where measurements are specifically noted in the Measurement Book as "Final Measurements" and as such have been signed by the Contractor and Engineer/Engineer's Representative) and shall in no respect be considered or used as evidence of any facts stated in or to be inferred from such accounts nor of any particular quantity of work having been executed nor of the manner of its execution being satisfactory.
- 46.(4) 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:

**(a) : Mobilisation Advance –**

This shall be limited to 10% of the Contract value and shall be paid in 2 stages:

Stage 1– 5% of Contract Value on signing of the contract agreement.

Stage 2 – 5% on mobilization of site-establishment, setting up offices, bringing in equipment and actual commencement of work.

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 mobilisation, only after submission of an utilization certificate by the contractor that the Stage 1 advance has been properly utilized in the contract.

These Advances shall be payable against irrevocable guarantee (Bank Guarantee, FDRs) from a scheduled commercial bank of India of at least 110% of the value of the sanctioned advance amount (covering principal plus interest).

**(b) 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 Equipment is hypothecated to the President of India by a suitable bond or alternatively covered by an irrevocable Bank Guarantee from a scheduled commercial bank of India for full cost of the Plant & Equipment 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.

**The advances under sub clause (a) and (b) above, are subject to the following conditions -**

(i) The full amount of Advances shall be recovered from contractor dues. 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 installments on each "on account bill" will be on pro-rata basis.

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.

(ii) The advances shall be used by the Contractor for the purpose of the Contract, and for the purpose for which they are paid. Under no circumstances, shall the advances be diverted for other purposes. Any such diversion shall be construed as a breach of the Contract and the Contractor shall be asked to return the advance at once and pay interest at 15% per annum till the advance is recovered back from him. The Contractor shall return the advance and pay the interest in one go without demur. The Contractor, if required by the Engineer shall provide the details of utilisation of Mobilisation advance.

(iii) If the Contractor is found to have contravened the provision, it will constitute a breach of contract and Railway shall be entitled to terminate the contract and forfeit his Performance Guarantee as well as Security Deposit.

(iv) In cases, where the Contract is rescinded as per clause 62 of the contract or short closed under any other condition(s) of the contract, without making full recovery of advances and accrued interest thereon, by the Railway, such balance of advances and accrued interest thereon shall immediately become due and payable by the Contractor to the Railway. The same shall be recovered from any due of Contractor with the Government of India.

**46.(5) Manner of Payment:** Unless otherwise specified payments to the Contractor will be transferred electronically to his bank account.

**46A. PRICE VARIATION CLAUSE (PVC):**

**46A.1 Applicability:** Price Variation Clause (PVC) shall be applicable only in tender having advertised value above **Rs.2 Crores**. Provided further that, in a contract where PVC is applicable, following shall be outside the purview of price adjustments (i.e. shall be excluded from the gross value of the work for the purpose of price variation) :

- a) Materials supplied by Railway to the Contractors, either free or at fixed rate;
- b) Any extra item(s) included in subsequent variation falling outside the purview of the Bill(s) of Quantities of tender, under clause 39. (1) (b) of these Standard General Conditions, unless applicability of PVC and 'Base Month' has been specially agreed, while fixing the rates of such extra item(s).

- 46A.2 Base Month:** The Base Month for 'Price Variation Clause' shall be taken as one month prior to closing of tender, unless otherwise stated elsewhere. The quarter for applicability of PVC shall commence from the month following Base month. The Price Variation shall be based on the average Price Index of the quarter under consideration.
- 46A.3 Validity:**  
Rates accepted by Railway Administration shall hold good till completion of work and no additional individual claim shall be admissible except:
- (a) Payment/recovery for increase/decrease in GST on works contract or imposition /removal of any tax/cess on Works Contract as per Clause 37,
- (b) Payment/recovery for overall market situation as per Price Variation Clause given hereunder.
- 46A.4** Components of various items in a contract on which variation in prices be admissible, shall be steel, cement, ferrous material, non-ferrous material, insulators, zinc and other materials, labour, plant & machinery, fuel, explosives, detonators etc. Adjustment for variation in prices of these items shall be determined in the manner prescribed.
- 46A.5** No price variation shall be admissible for fixed components.
- 46A.6** The percentages of various components in various type of works shall be as specified for all item (s)/ Bill(s) of Quantities in tender document and the same shall be fixed as per table & classifications given below:

**46A.5** Components of various items in a contract on which variation in prices be admissible,

**(I). For Civil Engineering Works**

S N	Classification Components		1A, 2 & 3A	4A	5A	6A	7	8A	9A	1B, 3B, 4B, 5B, 6B & 9B	1C, 3C, 4C, 5C, 6C, & 9C	3D, 4D, 5D, 6D, 8D & 9D	3E, 4E, 5E, 6E, 8E & 9E
1	Fixed	*	15	15	15	15	15	15	15	15	15	15	15
2	Labour	L <sub>c</sub>	20	25	30	20	50	20	20	0	0	10	25
3	Steel	S <sub>c</sub>	0	0	20	0	0	0	0	85	0	50	0
4	Cement	C <sub>c</sub>	0	0	15	0	0	0	0	0	85	0	0
5	Plant Machinery & Spares	PM <sub>c</sub>	30	15	5	20	15	20	30	0	0	10	30
6	Fuel & Lubricants	F <sub>c</sub>	25	15	5	15	15	20	15	0	0	10	20
7	Other materials	M <sub>c</sub>	10	15	30	30	5	25	20	0	0	5	10
8	Detonators & Explosive	E <sub>c</sub>	0	15	0	0	0	0	0	0	0	0	0
Total			100	100	100	100	100	100	100	100	100	100	100

\* It shall not be considered for any price variation.

The classification mentioned in the table above represents following type of item(s) in the work(s) –

**1 Earthwork in Formation**

- 1A All Item(s) excluding 1B or/and 1C  
1B Item(s) for supply of Steel  
1C Item(s) for supply of Cement

**2 Ballast Supply Works**



**3 Tunnelling Works (Without Explosives)**

- 3A All Item(s) excluding 3B or/and 3C or/and 3D or/and 3E
- 3B Item(s) for supply of Steel
- 3C Item(s) for supply of Cement or/and Grout
- 3D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 3E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

**4 Tunnelling Works (With explosives)**

- 4A All Item(s) excluding 4B or/and 4C or/and 4D or/and 4E
- 4B Item(s) for supply of Steel
- 4C Item(s) for supply of Cement or/and Grout
- 4D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 4E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

**5 Building Works**

- 5A All Item(s) excluding 5B or/and 5C or/and 5D or/and 5E
- 5B Item(s) for supply of Steel
- 5C Item(s) for supply of Cement
- 5D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 5E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

**6 Bridges & Protection work**

- 6A All Item(s) excluding 6B or/and 6C or/and 6D or/and 6E
- 6B Item(s) for supply of Steel
- 6C Item(s) for supply of Cement
- 6D Item(s) for Fabrication, Assembly, Erection& Launching of Girders including supply of Steel
- 6E Item(s) for Fabrication, Assembly, Erection & Launching of Girders excluding supply of Steel

**7 Permanent Way linking**

**8 Platform, Passenger Amenities**

- 8A All Item(s) excluding 8B or/and 8C or/and 8D or/and 8E
- 8B Item(s) for supply of Steel item/fittings
- 8C Item(s) for supply of Cement Item
- 8D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 8E Item(s) for Fabrication & Erection of Structures excluding supply of Steel

**9 Any Other Works not covered in Classification 1 to 8**

- 9A All Item(s) excluding 9B or/and 9C or/and 9D or/and 9E
- 9B Item(s) for supply of Steel
- 9C Item(s) for supply of Cement or/and Grout
- 9D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 9E Item(s) for Fabrication & Erection of Structures excluding supply of Steel

**46A.7 Formulae:** The Amount of variation in prices in various components (labour, material etc.) shall be worked out by the following formulae:

(i) 
$$L = \frac{(W \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (L_Q - L_B) \times L_C}{L_B \times 100}$$

$$\begin{aligned}
\text{(ii)} \quad M &= \frac{(W \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (M_Q - M_B) \times M_C}{M_B \times 100} \\
\text{(iii)} \quad F &= \frac{(W \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (F_Q - F_B) \times F_C}{F_B \times 100} \\
\text{(iv)} \quad E &= \frac{(W) \times (E_Q - E_B) \times E_C}{E_B \times 100} \\
\text{(v)} \quad PM &= \frac{(W \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (PM_Q - PM_B) \times PM_C}{PM_B \times 100} \\
\text{(vi)} \quad S &= \frac{(W \text{ or } W_S \text{ or } W_{SF}) \times (S_Q - S_B) \times S_C}{S_B \times 100} \\
\text{(vii)} \quad C &= \frac{(W \text{ or } W_C) \times (C_Q - C_B) \times C_C}{C_B \times 100}
\end{aligned}$$

**(II) For Railway Electrification Works:**

$$\begin{aligned}
\text{(viii)} \quad T &= [0.4136 \times (C_Q - C_B) / C_B] \times 85 \\
\text{(ix)} \quad R &= [0.94 \times (R_T - R_O) / R_O + 0.06 \times (Z_T - Z_O) / Z_O] \times 85 \\
\text{(x)} \quad N &= [(P_T - P_O) / P_O] \times 85 \\
\text{(xi)} \quad I &= [(I_T - I_O) / I_O] \times 85 \\
\text{(xii)} \quad G &= [(M_Q - M_B) / M_B] \times 85 \\
\text{(xiii)} \quad Er &= [(L_Q - L_B) / L_B] \times 85
\end{aligned}$$

Where,

L	Amount of price variation in Labour
M	Amount of price variation in Materials
F	Amount of price variation in Fuel
E	Amount of price variation in Explosives
PM	Amount of price variation in Plant, Machinery and Spares
S	Amount of price variation in Steel Supply Item
C	Amount of price variation in Cement Supply Item
T	Percentage variation payable on the gross value of bill of Concreting (Bill(s) of Quantities for concrete items)
R	Percentage variation payable on the gross value of bill of Ferrous Items (Bill(s) of Quantities for ferrous items)
N	Percentage variation payable on the gross value of bill of Non-Ferrous Items (Bill(s) of Quantities for non-ferrous items)
I	Percentage variation payable on the gross value of bill of Insulator (Bill(s) of Quantities for Insulator items)
G	Percentage variation payable on the gross value of bill of General Works (Bill(s) of Quantities for General items)
Er	Percentage variation payable on the gross value of erection (Bill(s) of Quantities for Erection Item)
L <sub>C</sub>	% of Labour Component in the item(s)
M <sub>C</sub>	% of Material Component in the item(s)
F <sub>C</sub>	% of Fuel Component in the item(s)

E <sub>c</sub>	% of Explosive Component in the item(s)
PM <sub>C</sub>	% of Plant, Machinery and Spares Component in the item(s)
S <sub>C</sub>	% of Steel Supply item Component in the item(s)
C <sub>C</sub>	% of Cement Supply item Component in the item(s)
W	Gross value of work done by Contractor as per on-account bill(s) excluding the Gross value of work under W <sub>S</sub> or/and W <sub>C</sub> or/and W <sub>SF</sub> or/and W <sub>F</sub> or/and W <sub>SFL</sub> or/and W <sub>FL</sub> and cost of materials supplied by Railway either free or at fixed rate,
W <sub>S</sub>	Gross value of work done by Contractor for item(s) of supply of steel.
W <sub>C</sub>	Gross value of work done by Contractor for item(s) of supply of cement and /or supply of grout material.
W <sub>SF</sub>	Gross value of work done by Contractor for item(s) of Fabrication & Erection of Structures including supply of Steel.
W <sub>F</sub>	Gross value of work done by Contractor for Fabrication & Erection of Structures excluding supply of Steel.
W <sub>SFL</sub>	Gross value of work done by Contractor for item(s) of Fabrication, Assembly, Erection / Launching of Girders including supply of Steel.
W <sub>FL</sub>	Gross value of work done by Contractor for item(s) of Fabrication, Assembly, Erection / Launching of Girders excluding supply of Steel.
L <sub>B</sub>	Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the base period
L <sub>Q</sub>	Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
M <sub>B</sub>	Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the base period
M <sub>Q</sub>	Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
F <sub>B</sub>	The average of official prices of Diesel available on the official website of ‘Petroleum Planning and Analysis cell’ under Ministry of Petroleum and Natural Gas for Delhi, Kolkata, Mumbai & Chennai, for the base period
F <sub>Q</sub>	The average of official prices of Diesel available on the official website of ‘Petroleum Planning and Analysis cell’ under Ministry of Petroleum and Natural Gas for Delhi, Kolkata, Mumbai & Chennai, for the 3 months of the quarter under consideration
E <sub>B</sub>	Index number of Monthly Whole Sale Price Index for the category ‘Explosive’ of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the base period.
E <sub>Q</sub>	Index number of Monthly Whole Sale Price Index for the category ‘Explosive’ of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the average price index of 3 months of the quarter under consideration.
PM <sub>B</sub>	Index Number of Wholesale Prices in India by Groups and Sub Groups (Averages) for ‘Manufacture of machinery for mining, quarrying and construction’– published in RBI (Reserve Bank of India) Bulletin, for the base period.
PM <sub>Q</sub>	Index Number of Wholesale Prices in India by Groups and Sub Groups (Averages) for ‘Manufacture of machinery for mining, quarrying and construction’– published in RBI (Reserve

Bank of India) Bulletin, for the average price index of 3 months of the quarter under consideration.

S <sub>B</sub>	The average rate provided by the Joint Plant Committee for the relevant category of steel item as mentioned in Clause 46A.9; for the base period.
S <sub>Q</sub>	The average rate provided by the Joint Plant Committee for the relevant category of steel item as mentioned in Clause 46A.9; for the 3 months of the quarter under consideration.
C <sub>B</sub>	Index No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the base period
C <sub>Q</sub>	No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the average price index of the 3 months of the quarter under consideration
R <sub>T</sub>	IEEMA price index for Steel Blooms (size 150mmx150mm) for the month which is two months prior to date of inspection of material.
R <sub>O</sub>	IEEMA price index for Steel Blooms (size 150mmx150mm) for the month which is one month prior to date of opening of tender.
P <sub>T</sub>	IEEMA price index for Copper wire rods for the month which is two months prior to date of inspection of material.
P <sub>O</sub>	IEEMA price index for Copper wire rods for the month which is one month prior to date of opening of tender.
Z <sub>T</sub>	IEEMA price index for Zinc for the month which is two months prior to date of inspection of material
Z <sub>O</sub>	IEEMA price index for Zinc for the month which is one month prior to date of opening of tender
I <sub>T</sub>	RBI wholesale price index for the sub-group “Insulators” for the month which is two months prior to date of inspection of material
I <sub>O</sub>	RBI wholesale price index for the sub-group “Insulators” for the month which is one month prior to date of opening of tender

### (III) **SIGNALING & TELECOMMUNICATION WORKS:**

- (a) The following expressions and meanings are assigned to the value of the work done for signalling and telecommunication works:

SIGWK = Value of signalling works for a stage payment of the item signalling works;

INVSIG = Value of inventory for signalling works for a stage payment of the item inventory for signalling works;

INTGTESTSIG = Value of integrated testing and commission for signalling works of the Railway Project;

COMWK= Value of telecommunication works for a stage payment of the item telecommunication works;

INVCOM = Value of inventory for telecommunication works for a stage payment of the item inventory for telecommunication works; and

INTGTESTCOM = Value of integrated testing and commission for telecommunication works of the Railway Project.

- (b) Price adjustment for changes in cost of signalling works and telecommunication works shall be paid in accordance with the following formula:

$$(i) \quad VSIGWK = 0.85 \text{ SIGWK} \times [PELEX \times (ELEX_i - ELEX_o) / ELEX_o + POFC \times (OFC_i - OFC_o) / OFC_o + PLB \times (LBI - LBo) / LBo + POTH \times (OTH_i - OTH_o) / OTH_o + S30C \times (P30C_i - P30C_o) / P30C_o + S24C \times (P24C_i - P24C_o) / P24C_o + S19C \times (P19C_i - P19C_o) / P19C_o + S12C \times (P12C_i - P12C_o) / P12C_o + S9C \times (P9C_i - P9C_o) / P9C_o + S6C \times (P6C_i - P6C_o) / P6C_o + S4C \times (P4C_i - P4C_o) / P4C_o + S2C \times (P2C_i - P2C_o) / P2C_o + S12C2.5 \times (P12C2.5_i - P12C2.5_o) / P12C2.5_o + S2C2.5 \times (P2C2.5_i - P2C2.5_o) / P2C2.5_o + S2C25 \times (P2C25_i - P2C25_o) / P2C25_o + QC \times (PQC_i - PQC_o) / PQC_o];$$

- (ii)  $VINVSIG = 0.85 \text{ SIGWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o];$
- (iii)  $VINTGTESTSIG = 0.85 \text{ INTGTESTSIG} \times [\text{PLB} \times (\text{LB}_i - \text{LB}_o) / \text{LB}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o];$
- (iv)  $VCOMWK = 0.85 \text{ COMWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{POFC} \times (\text{OFC}_i - \text{OFC}_o) / \text{OFC}_o + \text{PLB} \times (\text{LB}_i - \text{LB}_o) / \text{LB}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o + \text{S30C} \times (\text{P30C}_i - \text{P30C}_o) / \text{P30C}_o + \text{S24C} \times (\text{P24C}_i - \text{P24C}_o) / \text{P24C}_o + \text{S19C} \times (\text{P19C}_i - \text{P19C}_o) / \text{P19C}_o + \text{S12C} \times (\text{P12C}_i - \text{P12C}_o) / \text{P12C}_o + \text{S9C} \times (\text{P9C}_i - \text{P9C}_o) / \text{P9C}_o + \text{S6C} \times (\text{P6C}_i - \text{P6C}_o) / \text{P6C}_o + \text{S4C} \times (\text{P4C}_i - \text{P4C}_o) / \text{P4C}_o + \text{S2C} \times (\text{P2C}_i - \text{P2C}_o) / \text{P2C}_o + \text{S12C2.5} \times (\text{P12C2.5}_i - \text{P12C2.5}_o) / \text{P12C2.5}_o + \text{S2C2.5} \times (\text{P2C2.5}_i - \text{P2C2.5}_o) / \text{P2C2.5}_o + \text{S2C25} \times (\text{P2C25}_i - \text{P2C25}_o) / \text{P2C25}_o + \text{QC} \times (\text{PQC}_i - \text{PQC}_o) / \text{PQC}_o + \text{PCEQP} \times (\text{CEQP}_i - \text{CEQP}_o) / \text{CEQP}_o];$
- (v)  $VINVCOM = 0.85 \text{ SIGWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{PCEQP} \times (\text{CEQP}_i - \text{CEQP}_o) / \text{CEQP}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o];$  and
- (vi)  $VINTGTESTCOM = 0.85 \text{ INTGTESTCOM} \times [\text{PLB} \times (\text{LB}_i - \text{LB}_o) / \text{LB}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o].$

Where

**SIGWK** = Increase or decrease in the cost of signalling works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

**VINVSIG** = Increase or decrease in the cost of inventory for signalling during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

**VINTGTESTSIG** = Increase or decrease in the cost of integrated testing and commissioning of signalling works of the Railway Project during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

**VCOMWK** = Increase or decrease in the cost of communication works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

**VINVCOM** = Increase or decrease in the cost of inventory for telecommunications works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

**VINTGTESTCOM** = Increase or decrease in the cost of integrated testing and commissioning of telecommunication works of the Railway Project during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

**PCEQP**, **PELEX**, **PIC**, **PLB**, **POFC**, and **POTH** are the percentages of communication equipment, electronics, PVC insulated cables, labour, optical fibre cables, and other materials respectively;

**CEQP<sub>o</sub>** = The wholesale price index as published by the Ministry of Commerce and Industry, Government of India (hereinafter called “**WPI**”) for communication equipment for the month of the Base Month;

**CEQP<sub>i</sub>** = The WPI for communication equipment for the average price index of the 3 months of the quarter under consideration;

**ELEX<sub>o</sub>** = The WPI for electronics for the month of the Base Month;

**ELEX<sub>i</sub>** = The WPI for electronics for the average price index of the 3 months of the quarter under consideration;

**P30C<sub>i</sub>** = Price payable per Km as adjusted in accordance with price variation Clause for size 30C x 1.5 sq mm signalling cable

**P30C<sub>o</sub>** = Price per Km of cable as per purchase order/ Contract agreement.

**S30C** = Percentage of size 30C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

**P24C<sub>i</sub>** = Price payable per Km as adjusted in accordance with price variation Clause for size 24C x 1.5 sq mm signalling cable

**P24C<sub>o</sub>** = Price per Km of cable as per purchase order/ Contract agreement.

S24C = Percentage of size 24C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P19C<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 19C x 1.5 sq mm signalling cable

P19C<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S19C = Percentage of size 19C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P12C<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 12C x 1.5 sq mm signalling cable

P12C<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S12C = Percentage of size 12C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P9C<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 9C x 1.5 sq mm signalling cable

P9C<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S9C = Percentage of size 9C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P6C<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 6C x 1.5 sq mm signalling cable

P6C<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S6C = Percentage of size 6C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P4C<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 4C x 1.5 sq mm signalling cable

P4C<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S4C = Percentage of size 4C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P2C<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 1.5 sq mm signalling cable

P2C<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S2C = Percentage of size 2C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P12C2.5<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 12C x 2.5 sq mm signalling cable

P12C2.5<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S12C2.5 = Percentage of size 12C x 2.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P2C2.5<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 2.5 sq mm signalling cable

P2C2.5<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S2C2.5 = Percentage of size 2C x 2.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P2C25<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 25 sq mm signalling cable

P2C25<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

S2C25 = Percentage of size 2C x 25 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

PQC<sub>i</sub> = Price payable per Km as adjusted in accordance with price variation Clause for size 0.9mm dia, 6 Quad cable.

PQC<sub>o</sub> = Price per Km of cable as per purchase order/ Contract agreement.

QC = Percentage of size 0.9mm dia, 6 Quad cable shall govern the price.

LBo = The consumer price index for industrial workers – All India, published by Labour Bureau, Ministry of Labour, Government of India, (hereinafter called “CPI”) for the month of the Base Month;

LBi = The CPI for industrial workers – All India for the average price index of the 3 months of the quarter under consideration;

OFCo = The WPI for fibre cables for the month of the Base Month;

OFC<sub>i</sub> = The WPI for fibre cables for the average price index of the 3 months of the quarter under consideration;

OTHo = The WPI for all commodities for the month of the Base Month; and

OTH<sub>i</sub> = The WPI for all commodities for the average price index of the 3 months of the quarter under consideration.

- (c) The following percentages shall govern the price adjustment of the Contract Price for signalling and telecommunication works:

Works  Component	Signalling			Telecommunication		
	Signalling Works	Signalling inventory	Integrated testing and Commissioning	Telecommunication Works	Telecomm inventory	Integrated testing and Commissioning
Electronics (PELEX)	***0%	***0%	—	***0%	***0%	—
Communication Equipment (PCEQP)	—	—	—	***0%	***0%	—
Optical Fibre Cable (POFC)	***0%	—	—	***0%	—	—
30C x 1.5 sq mm signalling cable(S30C)	***0%	—	—	***0%	—	—
24C x 1.5 sq mm signalling cable (S24C)	***0%	—	—	***0%	—	—
19Cx 1.5 sq mm signalling cable (S19C)	***0%	—	—	***0%	—	—
12C x 1.5 sq mm signalling cable (S12C)	***0%	—	—	***0%	—	—
9C x 1.5 sq mm signalling cable (S9C)	***0%	—	—	***0%	—	—
6C x 1.5 sq mm signalling cable (S6C)	***0%	—	—	***0%	—	—
4C x 1.5 sq mm signalling cable (S4C)	***0%	—	—	***0%	—	—
2C x 1.5 sq mm signalling cable (S2C)	***0%	—	—	***0%	—	—
12C x 2.5 sq mm signalling cable (S12C2.5)	***0%	—	—	***0%	—	—
2C x 2.5 sq mm signalling cable (S2C2.5)	***0%	—	—	***0%	—	—
2C x 25 sq mm signalling cable (S2C25)	***0%	—	—	***0%	—	—

0.9 mm dia, 6Quad cable (QC)	***%	—	—	***%	—	—
Labour (PLB)	***%	—	***%	***%	***%	***%
Other materials	***%	***%	***%	***%	***%	***%
Total	100%	100%	100%	100%	100%	100%

*(Note- the percentages may be finalized by tendering authority depending on BOQ)*

#### **FORMULAE FOR SIGNALING & TELECOM CABLE**

The price payable for signalling cables is variable as per Price Variation Formula given below:

**For Signalling Copper Cables:**

$$P_i = P_o + CuF (Cu - C_{uo}) + CCFCu (CC - C_{Co}) + FeF (Fe - Fe_o)$$

**For Telecom Copper Cables For Jelly Filled, 0.9 mm dia, 6 quad cable**

$$P_i = P_o + CuF (Cu - C_{uo}) + AlFCu (Al - A_{lo}) + CCFCu (CC - C_{Co}) + FeF (Fe - Fe_o)$$

**For Aluminium Power Cables:**

$$P_i = P_o + AlF (Al - A_{lo}) + CCFAI (CC - C_{Co}) + FeF (Fe - Fe_o)$$

Where,

$P_i$  = Price payable per KM as adjusted in accordance with Price variation clause.

$P_o$  = Price per KM of cable as per Purchase order.

$CuF$  = Variation factor for Copper

$C_{uo}$  = Price of copper Rod in Rs. Per MT

$CCFCu$  = Variation factor for PVC Compound for Copper Signalling & Telecom cable

$C_{Co}$  = Price of PVC Compound in Rs. Per MT

$AlF$  = Variation factor for Aluminium

$A_{lo}$  = Price of EC grade LME Aluminium rods (Properzi rods) in Rs. Per MT.

$CCFAI$  = Variation factor for PVC Compound for Aluminium power cable

$FeF$  = Variation factor for Steel

$Fe_o$  = Price of Steel for Armour (Flat strip 4 mm. x 0.8mm/ Round 1.4mm dia) in Rs. Per MT

**(Prices per MT for  $C_{uo}$ ,  $C_{Co}$ ,  $Fe_o$ ,  $A_{lo}$  as applicable on the 1<sup>st</sup> working day of the month, one month prior to the deadline for submission of bids. The above prices and indices are as published by IEEMA vide circular reference no. IEEMA (PVC) /CABLE --/-- one month prior to the deadline for submission of bids.)**

$Cu$  = Price of Copper Rod in Rs. Per MT.  $C_c$  =

Price of PVC Compound in Rs. Per MT.

$Fe$  = Price of Steel for Armouring (Flat strip 4mm x 0.8 mm/ Round 1.4mm dia) in Rs. Per MT.

$Al$  = Price of EC grade LME Aluminium rods (Properzi rods) in Rs. Per MT.

**(Prices per MT for  $Cu$ ,  $CC$ ,  $Fe$ ,  $Al$  as prevailing on 1<sup>st</sup> working day of the calendar month covering the date One month prior to the date of inspection call letter will be applicable for the calculation of updated price. The above prices and indices are as published by IEEMA vide circular reference no. IEEMA (PVC) /CABLE --/-- one month prior to the date of inspection.)**

The value of variation factors for copper, steel and PVC Compound are different for different sizes of signalling cables. Accordingly, the PVC formula for some of the types of signalling cable is as given under:-



Underground Railway Signalling Cable unscreened and armoured copper conductor

- (i) Size 30 C x 1.5 sq.mm.

$$P30C_i = P30C_o + 0.391(Cu - C_{uo}) + 0.557(CC - CC_o) + 0.425(Fe - Fe_o)$$

For armouring, price of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (ii) Size 24C x 1.5 sq.mm

$$P24C_i = P24C_o + 0.313(Cu - C_{uo}) + 0.481(CC - CC_o) + 0.398(Fe - Fe_o)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (iii) Size 19C x 1.5 sq.mm

$$P19C_i = P19C_o + 0.248(Cu - C_{uo}) + 0.395(CC - CC_o) + 0.343(Fe - Fe_o)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (iv) Size 12C x 1.5 sq.mm

$$P12C_i = P12C_o + 0.157(Cu - C_{uo}) + 0.277(CC - CC_o) + 0.289(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (v) Size 9C x 1.5 sq.mm

$$P9C_i = P9C_o + 0.117(Cu - C_{uo}) + 0.241(CC - CC_o) + 0.383(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (vi) Size 6C x 1.5 sq.mm

$$P6C_i = P6C_o + 0.078(Cu - C_{uo}) + 0.199(CC - CC_o) + 0.329(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (vii) Size 4C x 1.5 sq.mm

$$P4C_i = P4C_o + 0.052(Cu - C_{uo}) + 0.152(CC - CC_o) + 0.277(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (viii) Size 2C x 4 sq.mm(multistrand)

$$P2C_i = P2C_o + 0.073(Cu - C_{uo}) + 0.156(CC - CC_o) + 0.3(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (ix) Size 12C x 2.5 sq.mm

$$P12C_{2.5i} = P12C_{2.5o} + 0.282(Cu - C_{uo}) + 0.371(CC - CC_o) + 0.342(Fe - Fe_o)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (x) Size 2C x 2.5 sq.mm

$$P2C_{2.5i} = P2C_{2.5o} + 0.047(Cu - C_{uo}) + 0.139(CC - CC_o) + 0.277(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (xi) Size 2C x 25 sq.mm PVC insulated, armoured, Aluminium power cable

$$P2C_{25i} = P2C_{25o} + 0.146(Al - Al_o) + 0.303(CC - CC_o) + 0.306(Fe - Fe_o)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (xii) For Jelly filled, 0.9mm dia, 6 quad cable

$$PQC_i = PQC_o + 0.135(Al - Al_o) + 0.139(Cu - C_{uo}) + 0.515(CC - CC_o) + 0.693(Fe - Fe_o)$$

For PVC Compound Grade CW-22, is to be taken into consideration.

**46A.8** The demands for escalation of cost shall be allowed on the basis of provisional indices as mentioned above in Clause 46A.7. Any adjustment needed to be done based on the finally published indices shall be made as and when they

become available.

**46A.9: (1)** Relevant categories of steel for the purpose of operating Price Variation formula as mentioned in this Clause shall be as under:

SL	Classification	Rates to be used for calculating S <sub>q</sub> or S <sub>b</sub>
1.	Reinforcement bars and other rounds	Average of per tonne rates of 10mm dia TMT & 25mm dia TMT; confirming IS1786; Fe 500
2.	All types and sizes of angles, channels and joists	Average of per tonne rates of 'Angle 75x75x6mm, Mild Steel Plate 10mm thickness and Channel 150x75mm; confirming IS2062, E250 Gr "A"
3.	All types and sizes of plates	Average of per tonne rates of 'MS Plates 10mm thickness and 25mm thickness; confirming IS2062, E250 Gr "A"
4.	Any other section of steel not covered in the above categories	Average of price for the 3 categories covered under SL 1, 2 & 3 in this table.

**(2).** Relevant city for referring "JPC (Joint Plant Committee)" rates of steel items (S<sub>q</sub> /S<sub>b</sub>) in different Zonal Railways shall be as under :

SL	City	Railway
1.	Delhi	Northern , North Central, North Eastern, North Western
2.	Kolkata	Eastern, East Central, East Coast, Northeast Frontier, South Eastern, Southeast Central
3.	Mumbai	Central, Western, West Central
4.	Chennai	Southern, South Central&South Western

#### **46A.10 Price Variation during Extended Period of Contract**

The price adjustment as worked out above, i.e. either increase or decrease shall be applicable upto the stipulated date of completion of work including the extended period of completion where such extension has been granted under Clause 17A of the Standard General Conditions of Contract. However, where extension of time has been granted due to Contractor's failure under Clause 17B of the Standard General Conditions of Contract, price adjustment shall be done as follows:

- In case the indices increase above the indices applicable to the last month of original completion period or the extended period under Clause 17A, the price adjustment for the period of extension granted under Clause 17B shall be limited to the amount payable as per the Indices applicable to the last month of the original completion period or the extended period under Clause 17A of the Standard General Conditions of Contract; as the case may be.
- In case the indices fall below the indices applicable to the last month of original/ extended period of completion under Clause 17A, as the case may be; then the lower indices shall be adopted for the price adjustment for the period of extension under Clause 17B of the Standard General Conditions of Contract.

**47. Maintenance of Works:** The Contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the Tender Form after the date of issue of the certificate of completion by the Engineer or any other earlier date subsequent to the completion of the works that may be fixed by the Engineer, be responsible for and effectively maintain and uphold in good substantial, sound and perfect condition all and every part of the works and shall make good from time to time and at all times as often as the Engineer shall require, any damage or defect that may during the above period arise in or be discovered or be in any way connected with the works, provided that such damage or defect is not directly caused by errors in the contract documents, act of providence or insurrection or civil riot, and the Contractor shall be liable for and shall pay and make good to the Railway or other persons legally entitled thereto whenever required by the Engineer so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to by reasons or in consequence of the operations of the Contractor or of his failure in any respect.

**48.(1) Certificate of Completion of Works:** As soon as in the opinion of the Engineer, the work has been completed and has satisfactorily passed any final test or tests that may be prescribed, the Engineer shall issue a certificate of completion duly indicating the date of completion in respect of the work and the period of maintenance of

the work shall commence from the date of completion mentioned in such certificate. The certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the Contractor and that there is no due from the Contractor to Railways against the contract concerned.

The Engineer may also issue such a certificate indicating date of completion with respect to any part of the work (before the completion of the whole of work), which has been both completed to the satisfaction of the Engineer and occupied or used by the Railway. When any such certificate is given in respect of part of a work, such part shall be considered as completed and the period of maintenance of such part shall commence from the date of completion mentioned in the completion certificate issued for that part of the work.

**48.(2) Contractor not Absolved by Completion Certificate:** The Certificate of Completion in respect of the works referred to in Sub-Clause (1) of this Clause shall not absolve the Contractor from his liability to make good any defects imperfections, shrinkages or faults which may appear during the period of maintenance specified in the tender arising in the opinion of the Engineer from materials or workmanship not in accordance with the drawings or specifications or instruction of the Engineer, which defects, imperfections, shrinkages or faults shall upon the direction in writing of the Engineer be amended and made good by the Contractor at his own cost; and in case of default on the part of Contractor, the Engineer may employ labour and materials or appoint another Contractor to amend and make good such defects, imperfections, shrinkages and faults and all expenses consequent thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from any moneys due to him under the contract.

**48(3) Final Supplementary Agreement:** After the work is completed or otherwise concluded by the parties with mutual consent, and taken over by the Railway as per terms and conditions of the contract agreement, and there is unequivocal no claim on either side under the Contract other than as mentioned in item 4 of Annexure XIV, the parties shall execute the Final Supplementary Agreement as per Annexure XIV.

**49. Approval only by Maintenance Certificate:** No certificate other than Maintenance Certificate, if applicable, referred to in Clause 50 of the Conditions shall be deemed to constitute approval of any work or other matter in respect of which it is issued or shall be taken as an admission of the due performance of the contract or any part thereof.

**50.(1) Maintenance Certificate:** The Contract shall not be considered as completed until a Maintenance Certificate, if applicable, shall have been signed by the Engineer stating that the works have been completed and maintained to his satisfaction. The Maintenance Certificate shall be given by the Engineer upon the expiration of the period of maintenance or as soon thereafter as any works ordered during such period pursuant to Sub Clause (2) to Clause 48 of these Conditions shall have been completed to the satisfaction of the Engineer, and full effect shall be given to this Clause notwithstanding the taking possession of or using the works or any part thereof by the Railway.

The Competent Authority to issue above Maintenance Certificate shall normally be the authority who is competent to sign the contract. If this Competent Authority is of the rank lower than JA Grade, then a JA Grade Officer (concerned with the work) should issue the Certificate. The Certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the Contractor and that there is no due from the Contractor to Railways against the contract concerned

**50.(2) Cessation of Railway's Liability:** The Railway shall not be liable to the Contractor for any matter arising out of or in connection with the contract for execution of the works unless the Contractor has made a claim in writing in respect thereof before the issue of the Maintenance Certificate under this clause.

**50.(3) Unfulfilled Obligations:** Notwithstanding the issue of the Maintenance Certificate the Contractor and (subject to Sub-Clause (2) of this Clause) the Railway shall remain liable for the fulfillment of any obligation incurred under the provision of the contract prior to the issue of the Maintenance Certificate which remains unperformed at the time such Certificate is issued and for the purposes of determining the nature and extent of any such obligations, the contract shall be deemed to remain in force between the parties thereto.

**51.(1) Final Payment:** On the Engineer's certificate of completion in respect of the works, adjustment shall be made and the balance of account based on the Engineer or the Engineer's representative's certified measurements or Engineer's certified "contractor's authorized engineer's measurements" of the total quantity of work executed by the Contractor upto the date of completion and on the rates accepted in Bill(s) of Quantities and for extra works on rates determined under Clause 39 of these Conditions shall be paid to the Contractor subject always to any deduction which may be made under these presents and further subject to the Contractor having signed delivered to the Engineer enclosing either a full account in detail of all claims he may have on the Railway in respect of the works or having delivered No Claim Certificate and the Engineer having after the receipt of such account given a certificate in writing that such claims are not covered under excepted matter i.e. 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) and 62(1), 63(iv) and 63.2.11 of the Standard General Conditions of Contract or in any Clause (stated as excepted matter) of the Special Conditions of the Contract, that the whole of the works to be done under the provisions of the Contracts have been completed, that they have been inspected by him since their completion and found to be in good and substantial order, that all properties, works and things, removed, disturbed or injured in consequence of the works have been properly replaced and made good and all expenses and demands incurred by or made upon the Railway for or in the respect of damage or loss by from or in consequence of the works, have been satisfied agreeably and in conformity with the contract.

**51.(2) Post Payment Audit:** It is an agreed term of contract that the Railway reserves to itself the right to carry out a post-payment audit and/ or technical examination of the works and the Final Bill including all supporting vouchers, abstracts etc. and to make a claim on the Contractor for the refund of any excess amount paid to him till the release of security deposit or settlement of claims, whichever is later, if as a result of such examination any over-payment to him is discovered to have been made in respect of any works done or alleged to have been done by him under the contract.

**51-A. Production of Vouchers etc. by the Contractor:**

- (i) For a contract of more than one crore of rupees, the Contractor shall, whenever required, produce or cause to be produced for examination by the Engineer any quotation, invoice, cost or other account, book of accounts, voucher, receipt, letter, memorandum, paper of writing or any copy of or extract from any such document and also furnish information and returns verified in such manner as may be required in any way relating to the execution of this contract or relevant for verifying or ascertaining cost of execution of this contract (the decision of the Engineer on the question of relevancy of any documents, information or return being final and binding in the parties). The Contractor shall similarly produce vouchers etc., if required to prove to the Engineer, that materials supplied by him, are in accordance with the specifications laid down in the contract.
- (ii) If any portion of the work in a contract of value more than one crore of rupees be carried out by a sub- contractor or any subsidiary or allied firm or company (as per Clause 7 of the Standard General Conditions of Contract), the Engineer shall have power to secure the books of such sub-contract or any subsidiary or allied firm or company, through the Contractor, and such books shall be open to his inspection.
- (iii) The obligations imposed by Sub Clause (i) & (ii) above is without prejudice to the obligations of the Contractor under any statute rules or orders binding on the Contractor.

**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.

**52-A Lien in Respect of Claims in other Contracts:**

- (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 Bill, 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.

- 53. Signature on Receipts for Amounts:** Every receipt for money which may become payable or for any security which may become transferable to the Contractors under these presents, shall, if signed in the partnership name by anyone of the partners of a Contractor's firm be a good and sufficient discharge to the Railway in respect of the moneys or security purported to be acknowledged thereby and in the event of death of any of the Contractor, partners during the pendency of the contract, it is hereby expressly agreed that every receipt by anyone of the surviving Contractor partners shall if so signed as aforesaid be good and sufficient discharge as aforesaid provided that nothing in this Clause contained shall be deemed to prejudice or effect any claim which the Railway may hereafter have against the legal representative of any Contractor partner so dying for or in respect to any breach of any of the conditions of the contract, provided also that nothing in this clause contained shall be deemed to prejudice or effect the respective rights or obligations of the Contractor partners and of the legal representatives of any deceased Contractor partners interse.

**LABOUR**

- 54. Wages to Labour:** The Contractor shall be responsible to ensure compliance with the provision of the Minimum Wages Act, 1948 (hereinafter referred to as the "said Act") and the Rules made thereunder in respect of any employees directly or through petty Contractors or sub-contractors employed by him for the purpose of carrying out this contract.

If, in compliance with the terms of the contract, the Contractor supplied any labour to be used wholly or partly under the direct orders and control of the Railways whether in connection with any work being executed by the Contractor or otherwise for the purpose of the Railway such labour shall, for the purpose of this Clause, still be deemed to be persons employed by the Contractor.

If any moneys shall, as a result of any claim or application made under the said Act be directed to be paid by the Railway, such money shall be deemed to be moneys payable to the Railway by the Contractor and on failure by the Contractor to repay the Railway any moneys paid by it as aforesaid within seven days after the same shall have been demanded, the Railways shall be entitled to recover the same from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

- 54-A. Apprentices Act:** The Contractor shall be responsible to ensure compliance with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued there under from time to time in respect of apprentices directly or through petty Contractors or sub-contractors employed by him for the purpose of carrying out the Contract.

If the Contractor directly or through petty Contractors or sub-contractors fails to do so, his failure will be a breach of the contract and the Railway may, in its discretion, rescind the contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation of the provisions of the Act.

- 55. Provisions of Payments of Wages Act:** The Contractor shall comply with the provisions of the Payment of Wages Act, 1936 and the rules made thereunder in respect of all employees employed by him either directly or through petty Contractors or sub-contractors in the works. If in compliance with the terms of the contract, the Contractor directly or through petty Contractors or sub-contractors shall supply any labour to be used wholly or partly under the direct orders and control of the Engineer whether in connection with the works to be executed hereunder or otherwise for the purpose of the Engineer, such labour shall nevertheless be deemed to comprise persons employed by the Contractor and any moneys which may be ordered to be paid by the Engineer shall be deemed to be moneys payable by the Engineer on behalf of the Contractor and the Engineer may on failure of the Contractor to repay such money to the Railways deduct the same from any moneys due to the Contractor in terms of the contract. The Railway shall be entitled to recover the same from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India all moneys paid or payable by the Railway by way of compensation of aforesaid or for costs of expenses in connection with any claim thereto and the decision of the Engineer upon any question arising out of the effect or force of this Clause shall be final and binding upon the Contractor.

**55-A. Provisions of Contract Labour (Regulation and Abolition) Act, 1970:**

- 55-A.(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.
- 55-A.(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.
- 55-A.(3)** The Contractor shall pay to the labour employed by him directly or through sub-contractors 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.
- 55-A.(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.
- 55-A.(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.

**55-B. Provisions of Employees Provident Fund and Miscellaneous Provisions Act, 1952:** The Contractor shall comply with the provisions of Para 30 & 36-B of the Employees Provident Fund Scheme, 1952; Para 3 & 4 of Employees' Pension Scheme, 1995; and Para 7 & 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.

**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 the 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 (LoAs) / Contract Agreements on shramikkalyan 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.
- (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."

**55-D. 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.

**The Cess shall be deducted from contractor's bills as per provisions of the Act. Building and other construction workers cess is applicable on the total cost of construction including the cost of material. (Authority: Railway Board's letter no. 2008/CE-I/CT/6 dated 09.08.2019 with latest amendment if any).**

56. **Reporting of Accidents:** The Contractor shall be responsible for the safety of all employees directly or through petty Contractors or sub-contractor employed by him on the works and shall report serious accidents to any of them however and wherever occurring on the works to the Engineer or the Engineers Representative and shall make every arrangements to render all possible assistance.
57. **Provision of Workmen's Compensation Act:** In every case in which by virtue of the provisions of Section 12 Sub-Section (1) of the Workmen's Compensation Act 1923, Railway is obliged to pay compensation to a workman directly or through petty Contractor or subcontractor employed by the Contractor in executing the work, Railway will recover from the Contractor the amount of the compensation so paid, and, without prejudice to the rights of Railway under Section 12 Sub-section (2) of the said Act, Railway shall be at liberty to recover such amount or any part thereof from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India. Railway shall not be bound to contest any claim made against it under Section 12 Sub-Section (1) of the said Act except on the written request of the Contractor and upon his giving to Railway full security for all costs for which Railway might become liable in consequence of contesting such claim.
- 57-A. **Provision of Mines Act:** The Contractor shall observe and perform all the provisions of the Mines Act, 1952 or any statutory modifications or re-enactment thereof for the time being in force and any rules and regulations made thereunder in respect of all the persons directly or through the petty Contractors or sub- contractors employed by him under this contract and shall indemnify the Railway from and against any claims under the Mines Act, or the rules and regulations framed thereunder, by or on behalf of any persons employed by him or otherwise.
58. **Railway not to Provide Quarters for Contractors:** No quarters shall normally be provided by the Railway for the accommodation of the Contractor or any of his staff employed on the work. In exceptional cases where accommodation is provided to the Contractor at the Railway's discretion, recoveries shall be made at such rates as may be fixed by the Railway for the full rent of the buildings and equipments therein as well as charges for electric current, water supply and conservancy.
- 59.(1) **Labour Camps:** The Contractor shall at his own expense make adequate arrangements for the housing, supply of drinking water and provision of latrines and urinals for his staff and workmen, directly or through the petty Contractors or sub-contractors and for temporary creche (Bal-Mandir) where 50 or more women are employed at a time. Suitable sites on Railway land, if available, may be allotted to the Contractor for the erection of labour camps, either free of charge or on such terms and conditions that may be prescribed by the Railway. All camp sites shall be maintained in clean and sanitary conditions by the Contractor at his own cost.
- 59.(2) **Compliance to Rules for Employment of Labour:** The Contractor(s) shall conform to all laws, bye-laws rules and regulations for the time being in force pertaining to the employment of local or imported labour and shall take all necessary precautions to ensure and preserve the health and safety of all staff employed directly or through petty contractors or sub-contractors on the works.
- 59.(3) **Preservation of Peace:** The Contractor shall take requisite precautions and use his best endeavours to:
  - (i) Prevent any riotous or unlawful behaviour by or amongst his workmen and other employed directly or through the petty Contractors or sub-contractors on the works and for the preservation of peace and protection of the inhabitants and
  - (ii) Security of property in the neighbourhood of the works. In the event of the Railway requiring the maintenance of a Special Police Force at or in the vicinity of the site during the tenure of works, the expenses thereof shall be borne by the Contractor and if paid by the Railway shall be recoverable from the Contractor.
- 59.(4) **Sanitary Arrangements:** The Contractor shall obey all sanitary rules and carry out all sanitary measures that may from time to time be prescribed by the Railway Medical Authority and permit inspection of all sanitary arrangements at all times by the Engineer, the Engineer's Representative or the Medical Staff of the Railway. Should the Contractor fail to make the adequate sanitary arrangements, these will be provided by the Railway and the cost thereof recovered from the Contractor.
- 59.(5) **Outbreak of Infectious Disease:** The Contractor shall remove from his camp such labour and their families as refuse protective inoculation and vaccination when called upon to do so by the Engineer or the Engineer's Representative on the advice of the Railway Medical Authority. Should cholera, plague, or other infectious disease break out, the Contractor shall burn the huts, beddings, clothes and other belongings of or used by the infected parties and promptly erect new huts on healthy sites as required by the Engineer, failing which



within the time specified in the Engineer's requisition, the work may be done by the Railway and the cost thereof recovered from the Contractor.

- 59.(6) Treatment of Contractor's Staff in Railway Hospitals:** The Contractor and his staff, other than labourers and their families requiring medical aid from the railway hospital and dispensaries will be treated as private patients and charged accordingly. The Contractors' labourers and their Families will be granted free treatment in railway hospitals and dispensaries where no other hospitals or dispensaries are available provided the Contractor pays the cost of medicines, dressing and diet money according to the normal scale and additional charges for special examinations such as pathological and bacteriological examination, X- Ray, etc. and for surgical operation.
- 59. (7) Medical Facilities at Site:** The Contractor shall provide medical facilities at the site as may be prescribed by the Engineer on the advice of the Railway Medical Authority in relation to the strength of the Contractor's resident staff and workmen.
- 59. (8) Use of Intoxicants:** The sale of ardent spirits or other intoxicating beverages upon the work or in any of the buildings, encampments or tenements owned, occupied by or within the control of the Contractor or any of his employees shall be forbidden and the Contractor shall exercise his influence and authority to the utmost extent to secure strict compliance with this condition.
- 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.
- 60.(1) Non-Employment of Labourers below the age of 15:** The Contractor shall not employ children below the age of 15 as labourers directly or through petty Contractors or subcontractors for the execution of work.
- 60.(2) Medical Certificate of Fitness for Labour:** It is agreed that the Contractor shall not employ a person above 15 and below 19 years of age for the purpose of execution of work under the contract unless a medical certificate of fitness in the prescribed form (Proforma at Annexure-VIII) granted to him by a certifying surgeon certifying that he is fit to work as an adult, is obtained and kept in the custody of the Contractor or a person nominated by him in this behalf and the person carries with him, while at work; a token giving a reference to such certificate. It is further agreed that the responsibility for having the adolescent examined medically at the time of appointment or periodically till he attains the age of 19 years shall devolve entirely on the Contractor and all the expenses to be incurred on this account shall be borne by him and no fee shall be charged from the adolescent or his parent for such medical examination.
- 60.(3) Period of Validity of Medical Fitness Certificate:** A certificate of fitness granted or renewed for the above said purposes shall be valid only for a period of one year at a time. The certifying surgeon shall revoke a certificate granted or renewed if in his opinion the holder of it, is no longer fit for work in the capacity stated therein. Where a certifying surgeon refuses to grant or renew a certificate or revoke a certificate, he shall, if so required by the person concerned, state his reasons in writing for doing so.
- 60.(4) Medical Re-Examination of Labourer:** Where any official appointed in this behalf by the Ministry of Labour is of the opinion that any person employed in connection with the execution of any work under this contract in the age group 15 to 19 years is without a certificate of fitness or is having a certificate of fitness but no longer fit to work in the capacity stated in the certificate, he may serve on the Contractor, or on the person nominated by him in this regard, a notice requiring that such persons shall be examined by a certifying surgeon and such person shall not if the concerned official so directs, be employed or permitted to do any work under this contract unless he has been medically examined and certified that he is fit to work in the capacity stated in the certificate.

#### **EXPLANATIONS:**

- (1) Only Qualified Medical Practitioners can be appointed as "Certifying Surgeons" and the term "Qualified Medical Practitioners" means a person holding a qualification granted by an authority specified in the Schedule to the Indian Medical Degrees Act, 1916 (VII to 1916) or in the Schedule to the Indian Medical Council Act, 1933 (XXVII) of 1933.
- (2) The Certifying surgeon may be a medical officer in the service of State or Municipal Corporation.

## DETERMINATION OF CONTRACT

**61.(1) Right of Railway to Determine the Contract:** The Railway shall be entitled to determine and terminate the contract at any time should, in the Railway's opinion, the cessation of work becomes necessary owing to paucity of funds or from any other cause whatever, in which case the value of approved materials at site and of work done to date by the Contractor will be paid for in full at the rate specified in the contract. Notice in writing from the Railway of such determination and the reasons therefor shall be conclusive evidence thereof.

**61.(2) Payment on Determination of Contract:** Should the contract be determined under sub clause (1) of this clause and the Contractor claims payment for expenditure incurred by him in the expectation of completing the whole of the work, the Railways shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction of the Engineer. The Railway's decision on the necessity and propriety of such expenditure shall be final and conclusive.

**61.(3)** The Contractor shall have no claim to any payment of compensation or otherwise, howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of determination of contract.

**62.(1) Determination of Contract owing to Default of Contractor:**

If the Contractor should:

- (i) Becomes bankrupt or insolvent, or
- (ii) Make an arrangement for assignment in favour of his creditors, or agree to carry out the contract under a Committee of Inspection of his creditors, or
- (iii) Being a Company or Corporation, go into liquidation (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or
- (iv) Have an execution levied on his goods or property on the works, or
- (v) Assign the contract or any part thereof otherwise than as provided in Clause 7 of these Conditions, or
- (vi) Abandon the contract, or
- (vii) Persistently disregard the instructions of the Engineer, or contravene any provision of the contract, or
- (viii) Fail to adhere to the agreed programme of work by a margin of 10% of the stipulated period, or
- (ix) Fail to Execute the contract documents in terms of Clause 8 of the Instructions to Tenderers.
- (x) Fails to submit the documents pertaining to identity of JV and PAN in terms of Clause 17.11 of Tender Form available in the Regulations for Instructions to Tenderers.
- (xi) Fail to remove materials from the site or to pull down and replace work after receiving from the Engineer notice to the effect that the said materials or works have been condemned or rejected under Clause 25 and 27 of these Conditions, or
- (xii) Fail to take steps to employ competent or additional staff and labour as required under Clause 26 of the Conditions, or
- (xiii) Fail to afford the Engineer or Engineer's representative proper facilities for inspecting the works or any part thereof as required under Clause 28 of the Conditions, or
- (xiv) Promise, offer or give any bribe, commission, gift or advantage either himself or through his partner, agent or servant to any officer or employee of the Railway or to any person on his or on their behalf in relation to the execution of this or any other contract with this Railway.
- (xv) Fail to adhere to the provisions of Para 16 of Tender Form (Second Sheet) of Instruction to Tenderers, or provision of above Clause 59(9) of these conditions.
- (xvi) Submits copy of fake documents / certificates in support of credentials, submitted by the tenderer.

Then and in any of the **said Clause**, the Engineer on behalf of the Railway may serve the Contractor with a notice (Proforma at Annexure-IX ) in writing to that effect and if the Contractor does not within seven days after the delivery to him of such notice proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid of the entire satisfaction of the Engineer, the Railway shall be entitled after giving 48 hours' notice (Proforma at Annexure-X or XII, as the case may be) in writing under the hand of the Engineer to rescind the contract as a whole or in part or parts (as may be specified in such notice) and after expiry of 48 hours' notice, a final termination notice (Proforma at Annexure-XI or XIII, as the case may be) should be issued.

**Note:**

Engineer at his discretion may resort to the part termination of contract with notices (Proforma at Annexure-IX, XII and XIII), only in cases where progress of work is more than or equal to 80% of the original scope of work.

**62.(2) Right of Railway after Rescission of Contract owing to Default of Contractor:** In the event of any or several of the courses, referred to in Sub-Clause(1) of this Clause, being adopted:

- (a) The Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any commitments or made any advances on account of or with a view to the execution of the works or the performance of the contract and Contractor shall not be entitled to recover or be paid any sum for any work thereto for actually performed under the contract unless and until the Engineer shall have certified the performance of such work and the value payable in respect thereof and the Contractor shall only be entitled to be paid the value so certified.
- (b) In the contract which has been rescinded as a whole, the Security Deposit already with railways under the contract shall be encashed/ forfeited and the Performance Guarantee already submitted for the contract shall be encashed. The balance work shall be got done independently without risk & cost of the failed Contractor. The failed Contractor shall be debarred from participating in the tender for executing the balance work. If the failed Contractor is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV /partnership firm.  
  
Further the authorized representative of failed Contractor cannot be accepted as authorized representative in new contract.
- (c) In the contract rescinded in part or parts,
  - (i) The full Performance Guarantee for the contract shall be recovered. No additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract. The contract value of part terminated contract stands reduced to the balance value of work under the contract.
  - (ii) The Security Deposit of part terminated contract shall be dealt as per clause 16(2) of these conditions.
  - (iii) The defaulting Contractor shall not be issued any completion certificate for the contract.
  - (iv) The balance work shall be got done independently without risk & cost of the failed Contractor. The failed Contractor shall be debarred from participating in the tender for executing the balance work. If the failed Contractor is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV /partnership firm.
  - (v) Further the authorized representative of failed Contractor will not be accepted as authorized representative in new contract.
- (d) The Engineer or the Engineer's Representative shall be entitled to take possession of any materials, tools, implements, machinery and buildings on the works or on the property on which these are being or ought to have been executed, and to retain and employ the same in the further execution of the works or any part thereof until the completion of the works without the Contractor being entitled to any compensation for the use and employment thereof or for wear and tear or destruction thereof.
- (e) The Engineer shall as soon as may be practicable after removal of the Contractor fix and determine ex- parte or by or after reference to the parties or after such investigation or enquiries as he may consider fit to make or institute and shall certify what amount (if any) had at the time of rescission of the contract been reasonably earned by or would reasonably accrue to the Contractor in respect of the work then actually done by him under the contract and what was the value of any unused, or partially used materials, any constructional plant and any temporary works upon the site. The legitimate amount due to the Contractor after making necessary deductions and certified by the Engineer should be released expeditiously.

#### **SETTLEMENT OF DISPUTES – INDIAN RAILWAY ARBITRATION AND CONCILIATION RULES**

##### **63. Conciliation of Disputes:**

- (i) This clause is applicable in the tender having advertised value less than or equal to Rs 50 Crore.
- (ii) 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 "Chief Engineer" or "Divisional Railway Manager" through "Notice of Dispute" provided that no such notice shall be served later than 30 days after the date of issue of Completion Certificate by the Engineer. Chief Engineer or Divisional Railway Manager shall, within 30 days after receipt of the Contractor's "Notice of Dispute", notify the name of conciliator(s) to the Contractor.

- (iii) The Conciliator(s) shall assist the parties to reach an amicable settlement in an independent and impartial manner within the terms of contract.
  - (iv) If the parties reach agreement on a settlement of the dispute, they shall draw up and sign a written settlement agreement duly signed by Engineer In-charge, Contractor and conciliator(s). When the parties sign the settlement agreement, it shall be final and binding on the parties.
  - (v) The parties shall not initiate, during the conciliation proceedings, any arbitral or judicial proceedings in respect of a dispute that is the subject matter of the conciliation proceedings.
  - (vi) The conciliation proceedings shall be terminated as per Section 76 of 'The Arbitration and Conciliation Act, 1996.
- 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 63.2.1 of the Standard General Conditions of Contract or in any Clause (stated as excepted matter) 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.
- 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.
- 64.(1) : Demand for Arbitration:**
- 64.(1)(i):** 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)(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 these conditions.
- 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 claims 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 defence 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.
- 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.
- 64.(3) :** **Appointment of Arbitrator:**
- 64.(3)(a): Appointment of Arbitrator where applicability of section 12 (5) of Arbitration and Conciliation Act has been waived off:**
- 64.(3)(a)(i):** In cases where the total value of all claims in question added together does not exceed Rs.1,00,00,000/- (Rupees One Crore), the Arbitral Tribunal shall consist of a Sole Arbitrator who shall be a Gazetted Officer of Railway not below Junior Administrative Grade, nominated by the General Manager. The sole arbitrator shall be appointed within 60 days from the day when a written and valid demand for arbitration is received by General Manager.
- 64.(3)(a)(ii):** In cases not covered by the Clause 64(3)(a)(i), the Arbitral Tribunal shall consist of a panel of three Gazetted Railway Officers not below Junior Administrative Grade or 2 Railway Gazetted Officers not below Junior Administrative Grade and a retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrators. For this purpose, the Railway will send a panel of at least four (4) names of Gazetted Railway Officers of one or more departments of the Railway which may also include the name(s) of retired Railway Officer(s) empanelled to work as Railway Arbitrator to the Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.
- Contractor will be asked to suggest to 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 shall appoint at least one out of them as the Contractor's nominee and will, also simultaneously appoint the balance number of arbitrators either from the panel or from outside the panel, duly indicating the 'presiding arbitrator' from amongst the 3 arbitrators so appointed. General Manager shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of Contractor's nominees. While nominating the arbitrators, it will be necessary to ensure that one of them is from the Accounts Department. An officer of Selection Grade of the Accounts Department shall be considered of equal status to the officers in Senior Administrative Grade of other departments of the Railway for the purpose of appointment of arbitrator.
- 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): Appointment of Arbitrator where applicability of Section 12 (5) of Arbitration and Conciliation Act has not been waived off:**
- (i) In cases where the total value of all claims in question added together does not exceed Rs.50,00,000/- (Rupees Fifty Lakh), the Arbitral Tribunal shall consist of a Retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrator. For this purpose, the Railway will send a panel of at least four (4) names of retired Railway Officer(s) empanelled to work as Railway Arbitrator duly indicating their retirement dates to the Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.
- Contractor will be asked to suggest to General Manager at least 2 names out of the panel for appointment as arbitrator within 30 days from the date of dispatch of the request by Railway. The General Manager shall appoint at least one out of them as the arbitrator within 30 days from the receipt of the names of Contractor's nominees.

- (ii) In cases where the total value of all claims in question added together exceed Rs.50,00,000/- (Rupees Fifty Lakh), the Arbitral Tribunal shall consist of a Panel of three (3) retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrators. For this purpose, the Railway will send a panel of at least four (4) names of retired Railway Officer(s) empanelled to work as Railway Arbitrator duly indicating their retirement date to the Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.

Contractor will be asked to suggest to 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 shall appoint at least one out of them as the Contractor's nominee and will, also simultaneously appoint the balance number of arbitrators either from the panel or from outside the panel, duly indicating the 'Presiding Arbitrator' from amongst the 3 arbitrators so appointed. General Manager shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of Contractor's nominees. While nominating the arbitrators, it will be necessary to ensure that one of them has served in the Accounts Department.

- 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 fails to act without undue delay, the 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 Arbitrator (s):**

- (a) Serving Gazetted Railway Officers of not below JA Grade level.
- (b) Retired Railway Officers not below SA Grade level, one year after his date of retirement.
- (c) Age of arbitrator at the time of appointment shall be below 70 years.
- (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)(i), 64.(3)(a)(ii), 64.(3) (b) (i) & 64.(3)(b)(ii) 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 therefrom.

- 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.

- 64.(4):** In case of the Tribunal, comprising of three members, 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.
- 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.
- 64. (6):** The cost of arbitration shall be borne by the respective parties. The cost shall inter-alia include fee of the arbitrator(s), as per the rates fixed 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 condition after/ while referring these disputes to Arbitration. Further, the fee payable to the arbitrator(s) would be governed by the instructions issued on the subject by Railway Board from time to time irrespective of the fact whether the arbitrator(s) is/are appointed by the Railway Administration or by the court of law unless specifically directed by Hon'ble court otherwise on the matter.
- 64.(7)** Subject to the provisions of the aforesaid Arbitration and Conciliation Act 1996 and the rules thereunder and relevant para of General Conditions of Contract (GCC) and any statutory modifications thereof shall apply to the appointment of arbitrators and arbitration proceedings under this clause.
- 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 08<sup>th</sup> 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.



## CHAPTER-6A

### ADDITIONAL CONDITIONS OF CONTRACTS WITH MEMASUREMENT CONDITIONS

#### 1.0 Stage payment on supply of steel:

This clause will be applicable for works contract of value more than **Rs.15.00 (Fifteen)** crore. Stage payment will be applicable for steel physically brought by the contractor to the site (even before its actual use in the work), subject to the following conditions:-

- a) The material shall be strictly in accordance with the contract specifications.
- b) The tender schedule shall provide for individual NS rate to be quoted by the tenderers for steel separately.
- c) The material shall be delivered at site and properly stored under covered sheds in measurable stacks.
- d) The quantities of materials shall be brought to the site only in such instalments that would facilitate smooth progress of work and consumed in reasonable time.
- e) Proper accountal in the material register to be maintained in the prescribed format at the site for the receipt and use of the material.
- f) Ownership of such material shall be deemed to vest with the Railways for which the contractor should submit an indemnity bond in prescribed format.

#### Indemnity Bond Performa is available at Annexure-2 of Chapter-6

- g) Before releasing the stage payment, the contractor shall insure the material at his own cost in favour of Railways against theft, damages, fire etc.
- h) 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. .
- i) The price variation claim for steel would continue to be governed as per extant PV clause and with reference to delivery at site.
- j) The quantity of steel to be brought to site, and for which stage payment will be admissible, shall be worked out by the contractor in consultation with the Engineer, for the first quarter, from date of issue of LOA + 15 days. Subsequent supply to site shall be done with approval of Engineer, on a quarterly basis, based on actual progress.

#### 2.0 SAFETY MEASURE: The following measures should be adopted to ensure safety of the trains as well as work force.

- 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 so 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 counselled about safety measures. A competency certificate to the contractor's supervisor as below shall be issued by AXEN/XEN, which will be valid only for the work for which it has been issued.

#### COMPETENCY CERTIFICATE

Certified that Sri.....supervisor of M/s .....has been examined regarding working on ..... work. his knowledge has been found satisfactory and he is capable of supervising the work safely.

AXEN/XEN

- 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.

- vi) Supplementary site specific instructions, wherever considered necessary, shall be issued by the Engineer-in-charge.
- vii) Contractor's employees should wear proper protective equipment such as dust mask, helmet, safety shoes etc.
- viii) Safety of the Contractor's workmen is also the responsibility of Principal Employer viz. N.E. Railway/Izzatnagar. The Contractor should ensure to obtain a certificate that they will take all safety precautions in respect of their employees provided under the rules/laws and in case of failure on their part, the Contractor shall be responsible for injury caused to their employee and N.E. Railway/Izzatnagar.
- ix) Portable Electrical equipment should be connected properly by experienced persons only. The connections should be without any joint and have proper earthing.
- x) All equipment brought by Contractor will be checked and certified to be safe by an identified officer of the N.E. Railway/Izzatnagar.
- xi) All Safety precaution to be followed by Contractor's employees.
- xii) Payment will be made after certification from the concerned department that he has cleared the place after the work is over.
- xiii) Contractor should ensure that if A.C./ Metal Sheets are used during cutting, drilling etc. concerned man must wear mask. Scrap of items shall also be disposed in disposal pit as per ISO-14001.
- xiv) Contractor must ensure all safety measures while working welding, cutting or doing any operation to protect fire incident. In case of failure on their part, the Contractor shall be responsible for injury caused to their employee and N.E. Railway/ Izzatnagar or any loss.

### **3.0 PAYMENT OF ROYALTY CHARGES:**

**3.1** The payment of Royalty Charges etc. to the State Government as demanded by them in connection with execution and supply of Rubble Stone/Stone ballast- Sand, River Bed Material (RBM-Blanketing) and earthwork etc. have to be borne and paid by the contractor. The respective State Government will confirm the rate of royalty charges as applicable at the time of execution of work with respect to sub- minerals. The contractor has to submit proof of payment of royalty charges as per demand of State Govt. If the relevant documents or proof of payment to the concerned revenue authority is not submitted along with the bill, the Railway Administration will be entitled to deduct Royalty Charges from the contractor's bills and keep in deposit such amount equal to the proportionate royalty charges from each on A/c bills. The same will be released to the contractor as and when contractors submit a receipt of payment challan/clearance certificates from the concerned authorities/revenue authorities of respective State Government and produce the same to the Engineer -in-charge. If the contractor does not produce the necessary relevant proof of payment of the required royalty charges within 45 days or at the time of submission of next on-account bill, whichever is earlier, the amount withheld will be paid to the concerned revenue authority. Once the withheld amount paid to the revenue authority, it will not be refundable. After completion of the work, if contractor fails to submit the clearance certificates regarding royalty charges, final bill will be passed after retaining an amount equal to the amount of un-paid royalty charges, as intimated by the concerned authorities/Revenue authorities/Collector or as calculated on the basis of relevant applicable rates. No interest will be paid to the contractor towards retained amount of Royalty Charges”.

### **3.2 FOR INTERNAL PROCESSING OF BILL:**

- (i) The Executive will certify the payment/non-payment of the Royalty Charges by the contractor in each bill with documentary evidence issued from the respective revenue authority and then accordingly deduction of Royalty Charges will be made.
- (ii) The executive will also indicate the concerned district authority to whom relevant royalty charges are to be remitted so that accordingly action may be taken by the Accounts branch.

### **4.0 Letter of credit:**

- 1. All works tenders or service tenders invited by Railway through IREPS, having advertised value of Rs. 10 lakh and above will have option to take payment from Railways through a letter of credit

(LC) arrangement, with the following condition:

2. Following special conditions are included:-

- (i) 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.
- (ii) The option so exercised, shall be an integral part of the bidder's offer.
- (iii) 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.
- (iv) In case tenderer opts for payment through LC, following shall be the procedure to deal with 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 toward issue of LC and its operation thereof shall be borne by the contractor.
  - (c) 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 finalized by the engineer in consultation with contractor on the basis of expected progress of work.
  - (e) The LC terms and conditions shall inter-alia indemnity and save 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 Authorization (**format enclosed as Annexure- 5 of Chapter -6**) 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 Authorization.
  - (h) The Document of Authorization shall be issued by Railway Accounts Office against each bill passed by Railways.
  - (i) On issuance of Document of Authorization, a copy of Document of Authorization shall be posted on IREPS for downloading by the contractor. A digitally signed copy of Document of Authorization 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 Authorization 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 Authorization, Bill of Exchange

and Bill.

- (k) The payment against LC shall be subject to verification from Railway's Bank (Local Branches).
  - (l) The contractor's bank (advising bank) shall submit the documents to the Railway's bank (Local SBI Branches).
  - (m) The railway's bank (issuing bank) shall, after verifying the claim so received w.r.t. the digitally signed Document of Authorization 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 payment 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.
3. For opening of LC, executive department shall make a request letter to concerned Accounts Department on a format, placed as **(Annexure- 4 of Chapter-6)**. .

**5.0 MEASUREMENT OF WORK BY CONTRACTOR IN WORKS CONTRACT HAVING VALUE MORE THAN RS.5 CRORE OR AS PER LATEST INSTRUCTIONS.**

- (i) Measurements recorded by contractor shall be checked by railway within 45 days of submission of measurements.
- (ii) While processing 75% provisional payment bill concerned executives shall ensure that supply items given by contractor are commensurate with requirement for execution of works.

**2.0** Guide Line for Measurement of work by contractor is allowed as per the provisions of Engineering Code Para 1316 A mentioned below. (Advance Correction Slip No.50 circulated vide Railway Board's letter No.2016/CE-I/CT/14/ Measurement/1 dated 21.09.2017).

**1316A (Applicable for contracts wherein the measurement of work by contractor is permitted):** Para 1316 of Engineering Code shall not be applicable for these contracts. For such contracts, contractor shall be responsible for carrying out measurements of work executed and recording of measurements for the release of on account/final payment. In such cases, the detailed procedure for recording of measurements, provisional payment, test check and final payment shall be as follows:

**Contractor's Measurement Book:**

- 1 Railway shall arrange contractor's measurement book (CMB), each having sheet No, 1A to 4A(Form E 1313), followed by 100 machine number pages (Form E 1313, sheet No, 5A). On the top of each sheet of CMB, there shall be provision for recording the name of the work, agreement number, name of contractor and CMB number.
- 2 CMBs shall be printed in such a way so as to keep a clear margin of 50 mm on the left side of page, Further, the left side shall have pinhole tear line at a distance of 15 mm from edge for ease of taking out sheets from these books. The binding shall be within 15mm of the margin available between edge and pinhole tear line. This shall ensure availability of minimum 35 mm clear margin to re-bind measurement books later on.

**Movement and upkeep of Contractor's Measurement Book:**

- 3. Sr.DEE(G)/IZN in charge of contract shall hand over required No. of CMBs to Assistant/Executive Engineer in-charge of contract (ADEE/COACHING/IZN) after taking receipt of the same on sheet No. 2A (Form E.1313) for further issuance to contractor time to time as per progress of work.
- 4. CMB shall be registered with unique No. in the Register of Measurement Books(Form E.1314) maintained In the office of Sr.DEE(G)/IZN Separate accountal of CMBs for each agreement shall be maintained in the office of Sr.DEE(G)/IZN and ADEE/COACHING/IZN.
- 5. In case of change of 'contractor's authorized engineer', fresh approval shall be taken from Sr.DEE(G)/IZN before recording of measurement.

6. While issuing the CMB to contractor, ADEE/COACHING/IZN shall take out sheet No. 2A to 4A from the CMB, take receipt of CMB from contractor on sheet No. 3A (Form E.1313), and keep the same in safe custody.
7. Similar system as for CMB, shall be followed for issuing Field Book/Level Book (E.1317/A) to contractor for recording of levels in the field book/level book.

**Measurement:**

8. The contractor's authorized engineer shall record the measurements in CMB neatly in his own handwriting, without any use of eraser/overwriting, without use of any typing fluid or any such thing. All cuttings shall be initialed. No page shall be damaged /destroyed. No page shall be kept blank in between the measurements.
9. The Contractor shall communicate the date of measurement to Nominated Railway Site Engineer in sufficient advance' to witness the measurement. Joint witnessing of measurement by railways is not compulsory except for initial levels in case of earthwork and hidden measurements. Initial levels of earthwork and hidden measurements of cable laying, wiring are to be recorded in the presence of railway official/supervisor and test checked as prescribed.
10. In oil account contract certificate, measurement shall be recorded for the items and quantities to be paid in the concerned on account contract certificate.
11. However, in every 4th on account contract certificate and final contract certificate, the recording of measurement for works executed shall include all the items and their quantity included in previous on account contract certificates, irrespective of whether to be paid or not in the current On Account Contract Certificate/Final Contract Certificate.
12. No payment shall be processed on Lump sum measurement taken by contractor's authorized engineer except for earthwork. For earthwork, every 4th bill shall be based on actual levels taken and detailed calculations carried out for the work done.
13. The contractor shall take out carefully from CMB the used pages of CMB with one extra blank page for processing the bill; staple them for submission to ADEE/COACHING/IZN along with bill, duly signing the measurements. The contractor shall keep a photocopy of the measurements with him for future reference.
14. At the time of submission of final bill, the contractor shall submit all the remaining CMBs (unused as well as partially used) with him along with bill to ADEE/COACHING/IZN.
15. The contractor shall submit required copies of invoice and on account contract certificate/final contract certificate (similar to form E.1337 and E.1338) to the ADEE/COACHING/IZN duly marking them - original or copy. Original shall be used for release of payment whereas duplicate copies shall be used for record purpose in different offices.
16. In case contractor requires provisional payment of on-account bill; the contractor shall submit his invoice and provisional on account contract certificate for 75% of amount of work done (before deduction of taxes). The contractor shall write 'For Provisional payment 'on top of such on-account contract certificate.
17. ADEE/COACHING/IZN while issuing receipt of stapled sheets of CMB to contractor shall clearly record the same in sheet 4 (E.1314) of concerned CMB, kept in the office of ADEE/COACHING/IZN.

**Release of Provisional Payment:**

18. Senior Section Engineer/ 'Junior Engineer with 5 year experience' (SSE/JE) and ADEE/COACHING/IZN shall sign & record a certificate on the original provisional 'on account contract certificate' as under:

***"Certified that the payment being made is less than the amount due for the quantities of works executed by the contractor".***

In case of payment of earthwork items in any contract, calculation of quantity of such items along with field book /level book must be enclosed. This shall be cross checked, as considered appropriate by SSE/JE & ADEE/COACHING/IZN, to ensure that no excess payment is being made. At this stage no test check of measurements by railway is required.

19. ADEE/COACHING/IZN shall keep a copy of contractor's invoice & provisional on account contract certificate in his office, and submit original invoice & original provisional on account contract certificate along with required number of duplicate copies, and used sheets of CMB to the Sr.DEE(G)/IZN unit for passing the bill and release of payment.
20. The provisional on account contract certificate shall be passed by Sr.DEE(G)/IZN and payment shall be released by associate based on above certification of concerned SSE/JE and AEE/Coaching/IZN. After release of payment, blank sheet of CMB (if any) shall be crossed by Sr.DEE(G)/IZN before sending the measurement sheets back to ADEE/COACHING/IZN for carrying out required test checks. At this stage measurements shall not be crossed.
21. No provisional payment shall be allowed in final contract certificate, Further, once provisional payment has been released in any on-account contract certificate, the next on account contract certificate can be raised by contractor only when accounts of previous on account certificate (Provisional as well as remaining payment) has been finalized.

**Test Check**

22. Necessary test checks shall be carried out by the SSE/JE and AEE/DEE for the works done before full payment of on-account contract certificate/final contract certificate; SSE/JE and AEE/DEE shall communicate the date of test checks to contractor in advance. The contractor can accompany during test check. The contractor shall provide necessary support staff and all required tools& plants to facilitate test check by railway officials.
23. The stipulated test checks for AEE/DEE and SSE/JE Level is tabulated as under:

S. NO.	Description of works	Test Check in terms of % of value by	
		SSE/JE	ADEE/COACHING/IZN
(a)	Measurement of Ballast, pitching stone, Earth work and hidden items.	100%	100%
(b)	Measurement of all other items.	100%	20%
(c)	Initial and Final levels along center line for Earth work in embankment and cutting.	100%	100%
(d)	Intermittent levels along center line for Earth work in embankment and cutting.	100%	20%
(e)	Initial, intermittent and final levels except center line for earth work in embankment and Cutting.	100%	20%

**Note:** The check regarding levels of earthwork invariably shall be carried out in cross sections having heavy cross slopes.

24. Contractor's recorded measurement sheets shall be checked for any corrections/over writing during test check. All the corrections/over writing shall be initialed by SSE/JE.
25. The discrepancy noted (if any) during test check of recorded measurement shall be communicated by ADEE/COACHING/IZN to the contractor.
26. In case of discrepancy noticed during test check, the contractor shall submit original and required copies of fresh invoice of amount corrected for discrepancy, and in case provisional payment has been released earlier, the required copies of fresh invoice of remaining amount corrected for discrepancy (if any), along with on account/final contract certificate to ADEE/COACHING/IZN.

**Full payment of On Account Contract Certificate/Final Contract Certificate:**

27. ADEE/(COACHING/GENERAL)/IZN shall submit original copy of invoice and on account contract certificate of remaining amount/ Final Contract along with required number of duplicate copies and used sheets of CMBs (all used/blank CMBs in case of final contract certificate), duly signed by SSE/JE and ADEE/(COACHING/GENERAL)/IZN to the Sr.DEE(G)/IZN for passing the bill and release of payment.
28. Once the payment is released, Sr.DEE(G)/IZN shall return back the used sheets of CMB to ADEE/COACHING/IZN for safe custody, duly crossing of measurements by finance officer.
29. Once all used of a particular CME is received back by ADEE/COACHING/IZN from Sr.DEE(G)/IZN, the ADEE/COACHING/IZN shall re-bind all 100 pages of CMB along with sheet No. 1A to 4A for submission of CMB to Sr.DEE(G)/IZN office shall record the receipt of same in sheet No. 2A of CMB and Register of Measurement Books (Form E1314).

30. The final contract certificate shall be passed by Sr.DEE(G)/IZN only receipt of all CMBs (used/blank) from ADEE/(COACHING/GENERAL)/IZN.
31. The provisions of this pare 1316A shall be applicable to all the departments of Indian railways and to be executed through equivalent authorities of respective departments.

Railway .....

CMB No. ....

**CONTRACTOR'S MEASUREMENT BOOK**

Department .....

Division/Construction Unit.....

Name of Work .....

Agreement No.....

Name of Agency.....

Name to Whom Issued .....

Designation .....

Date of issue .....

Date of return .....



(Title page)

**E.1313**

(Sheet 2A)

Railway .....

CMB No. ....

**CONTRACTOR'S MEASUREMENT BOOK**

Department .....

Division/Construction Unit .....

Name of Work .....

Agreement No. ....

Name of Agency .....

Issued to .....

(Name & designation)

(station)

on .....

(date)

Received by .....

(Signature)

(Designation)

(Station)

on .....

(date)

Date of first entry .....

Date of last entry .....

Date received back in Division/Const. Unit }

office after completion of book

Certified that this Measurement Book contains 100 machine numbered pages from ..... to ..... (both pages inclusive) which have been counted by me and are correct.

Signature .....

Date .....

Designation .....

Initial ( ) Binding Space

Tearing line

Re Binding ( ) Space

Tearing line

Railway .....					
CMB No. ....					
<b>CONTRACTOR'S MEASUREMENT BOOK</b>					
Name of Work .....					
Agreement No. ....					
Name of Agency .....					
Issued to.....					
(Contractor's name)					
.....		on.....		.....	
(station)				(date)	
<p>Certified that this Measurement Book contains 100 machine numbered pages from .....to ..... (both pages inclusive) which have been counted by me and are correct. No sheet is torn.</p> <p>I understand that the measurement book is very important document and hence I shall ensure its proper upkeep and safe custody.</p>					
Received by.....					
(Signature of contractor)					
.....		.....		.....	
(Name)		(Station)		(Date)	
Date of first entry.....					
Date of last entry.....					
<p>Certified that this Contractor's Measurement Book pages returned by contractor have been counted by me and are correct. The details of pages received by me is as under:</p>					
S. No.	On Account Bill No.	Page No. From.....To	No. of Pages	Date of receipt in AEN/XEN office	Sign & Designation Of Railway official
1					
2					
3					
4					
5					
6					
7					

Railway .....

CMB No. ....

**CONTRACTOR'S MEASUREMENT BOOK**

Name of Work .....

Agreement No.....

Name of Agency.....

## INDEX OF M.B

[illegible]

Space for Machine numbering  
with six digits unique number  
\*\*\*\*\*

## Name of Work .....

Agreement No.....

Name of Agency.....

[illegible]

\*\*\*\*\*

LCDA No. (18 DIGIT IPAS GENERATED NO.)

Dated.....

## DOCUMENT OF AUTHORIZATION

Reference: (i) Works Contract/Supply Contract No..... Dated.....

(ii) Inland Letter of Credit No.....Dated.....

This document is issued again contract No.....(FROM IREPS).....dated supply/work of  
 .....(DESCRIPTION OF GOODS/WORK FROM IREPS).....

The beneficiary of the aforementioned Letter of Credit M/s .....(NAME AND  
 VENDER CODE)..... (Vendor Code.....as per IREPS.....) is receive aggregating  
 INR.....(FROM ABSTRACT OF BILL PASSED).....out of a total LC amount of INR..... (FROM  
 MASTER TABLE OF LC OPENED).....against the first/second commercial invoice No.  
 (FROMIPAS).....dated.....FROMIPAS.....for INR (FROM  
 IPAS).....raised against the above contract from State Bank of India .....(branch – FROM  
 LC MASTER TABLE) ..... on the strength of this Certificate.

The details of payment already made to the beneficiary under this Letter of Credit are as follows:

S. No.	Invoice No.	Invoice date	Invoice Amount (INR)	LCDA No.	LCDA date	Amount paid (INR)
-----------	-------------	--------------	-------------------------	----------	-----------	----------------------

Total Paid

THIS PAYMENT:-\_\_\_\_\_

LC BALANCE AFTER THIS PAYMENT:-\_\_\_\_\_

(Signature of authorised Railway authority)

Name:

Designation:

Official Seal

**Request letter from Executive branch to Accounts Office for opening of LC.**

**Office.....**

**..... Railway**

**No.** \_\_\_\_\_

**Dated** \_\_\_\_\_

**The PFA/Sr. DFM/Dy. FA  
HQ/Division/Workshop/Cost**

**Sub: - Opening of LC.**

**Ref: - Supply Order/Contract Agreement No.**

It is requested to open a sight LC against the above referred Order/Agreement in favour of \_\_\_\_\_-. The details of beneficiary are as under:

- (i) Name of Contractor/Supplier
- (ii) Vendor Code
- (iii) Address
- (iv) Tender No.
- (v) Contract Agreement No.
- (vi) Description of Goods/Service
- (vii) Value of Contract
- (viii) Stage of Payment
- (ix) Expected payment within 6 months (LC Amount)
- (x) Beneficiary bank details:
  - (a) Bank name
  - (b) Address
  - (c) Account No.
  - (c) IFSC Code
- (xi) Validity/Period for which LC is to be opened.

It is certified that the supplier/contract has exercised the option of taking payment due against the tender, through LC arrangement in IREPS portal at the time of bidding itself and the option has been flagged in the IREPS. This has the approval of

\_\_\_\_\_

**(Signature)**

**Name:-**

**Designation:**

**(Official Seal)**

## NORTH EASTERN RAILWAY

[NE RAILWAY ORGANISATION]  
SPECIMEN FORMAT OF BANK GUARANTEE BOND

## PROFORMA FOR BANK GUARANTEE

*(Executed on non-judicial stamp paper)*

Name of the Bank -----

Bank Guarantee Bond No. and date -----, Valid up to-----

Amount of Bank Guarantee Bond ----- ,

## PERFORMANCE GUARANTEE BOND

In consideration of the President of India acting through, Sr. Divisional Electrical Engineer (G)/N.E. Railway, Izzatnagar/ North Eastern Railway (hereinafter called "The Government") having agreed under the terms and conditions of contract under Acceptance Letter No.-----dated ----- made between Sr. Divisional Electrical Engineer (G)/N.E. Railway, Izzatnagar/ North Eastern Railway and agency M/s/Shri ----- (herein after called "the said contractor(s)" for the work "-----" (here in after called "the said contract") having agreed for submission of an irrevocable Bank Guarantee Bond equivalent to 5% of the contract value as indicated in the aforesaid contract for Rs.\_\_\_\_ (Rupees -----only) as a performance security Guarantee Bond from the contractor (s) for compliance of his obligations in accordance with the terms & conditions in the aforesaid contract.

1. We,----- (indicate the name of the Bank) hereinafter referred to as the Bank, under - take to pay to the Government an amount not exceeding Rs.----- (Rupees ----- - -----only) on demand by the Government.

2. We,----- (indicate the name of the bank), further agree that and promise) to pay the amounts due and payable under this guarantee without any demur merely on a demand from the Government through the **FA & CAO / N.E. Railway, Gorakhpur**, stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by the Government by reason of any breach by the said contractor of any of the terms of conditions contained in the said contract/agreement or by reason of the contractor failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.----- (Rupees----- - ----- Only).

3. (a) We,----- (indicate the name of Bank) further undertake to pay to the Government any money so demanded notwithstanding any dispute or dispute raised by the contractor(s) in any suite or proceeding pending before any court or Tribunal relating to liability under this present being absolute and unequivocal.

(b) The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

4. We,----- (indicate the name of bank) to further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged by contracting authority on behalf of the Government, certify that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s) and accordingly discharge this guarantee.

5 (a) Notwithstanding anything to the contrary contained herein the liability of the bank under this guarantee will remain in force and effect until such time as this guarantee is discharged in writing by the Government or until (date of validity/ extended validity) whichever is earlier and no claim shall be valid under this guarantee unless notice in writing thereof is given by the Government within validity/extended period of validity of guarantee from the aforesaid date.

(b) Provided always that We----- (indicate the name of the Bank) unconditionally undertakes to renew this guarantee or to extend the period of guarantee from year to year before the expiry of the period or the extended period of the guarantee, as the case may be on being called upon to do so by the Government. If the guarantee is not renewed or the period extended on demand, we ----- (indicate the name of the Bank) shall pay the Government the full amount of guarantee on demand and without demur.

6. We,----- (indicate the name of Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without effecting in any manner out of obligations hereunder to vary any of the terms and conditions of the said contract from time to time or to postpone for any time or from time to time any to the powers exercisable by the Government against the said contractor (s) and to forbear or enforce any of the terms and conditions of the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor(s) or for any forbearance act or omission on the part of the Government or any indulgence by the Government to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties for the said provision would relive us from the liability.

7. This guarantee will not be discharged by any change in the constitution of the Bank or the Contractor(s).

8. **This guarantee shall be valid up to----- (Date of Completion plus 60 days). Unless extended on demand by Government. Notwithstanding anything to the contrary contained hereinbefore, our liability under this guarantee is restricted to Rs. .... (Rupees ..... ) unless a demand under this guarantee is made on us in writing on or before..... We shall be discharged from our liabilities under this guarantee thereafter.**

9. The expressions Bank and Railway herein before used shall include their respective successors and assigns.

10. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the Railway. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No.758.

11. 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

11. The Guarantee shall be valid in addition to and without prejudice to any other security Guarantee(s) of Bidder in favour of the Railway. The Bank, under this Guarantee, shall be deemed as Principal Debtor of the Railway.

Date .....

Place.....

Bank's Seal and authorized signature(s)

[Name in Block letters] .....

[Designation with Code No.].....

[P/Attorney] No.

Witness:

1 Signature, Name & Address & Seal

2 Signature, Name& address & Seal



**PROFORMA OF INDEMNITY BOND**

Indemnity for Safe Custody of Reinforcement steel/Structural Steel as per Special Conditions of Contract Agreement  
 No.: \_\_\_\_\_ dated: \_\_\_\_\_ for the work “  
 ”

We (Name of Contractor) ..... hereby undertake that we shall hold at our Workshop at-----for and behalf of the President of India and in trust for him the stores/articles(mentioned in annexure, details to be given for quantity for each section and grade) which may be and/or which has been made over to us, in connection with “-----“ against the contract agreement No..... Dated.....

2. We shall be and remain absolutely responsible for the safe custody and protection of the said stores and articles against all risks, whatsoever, till those and assembled in the bridge to be fabricated against the above mentioned contract and duly delivered to the President of India or to his representative as he may direct and as such do hereby indemnify the president of India against any loss and/or damage to the said stores and articles while in our possession/custody. The said stores and articles shall however be at all times, open to the inspection by officers who may be authorized on that behalf by ministry of Railways or its nominee.

3. Should however, at any time any loss or damage to as aforesaid, occurs or a refund become otherwise due to the President of India, he or his representative shall be entitled to recover from us compensation for, and in respect of such loss or damage, if any, or the amount to be so refunded without prejudice to any other remedies which may be otherwise available to the said president of India by way of deduction from any sum due to/or any sum which at any time hereafter may become due to us under this or any other contract.

In the event of any loss or damage as aforesaid, the assessment of such loss or damage and the assessment of the compensation therefore would be made by the President of India or his authorized nominee and the said assessment would be final and binding upon us.

For.....

---

**DECLARATION FORM**

For receiving materials from the Railways by the Firm.

“I/We hereby solemnly declare that the..... (Material) obtained is required for the purpose of Manufacturing .....(finished product) against Contract Agreement No..... dated ..... The ..... (material) will not be utilized for any other purposes or other wise disposed of without the prior approval of the president of India/Railways or his nominee”

**Note:- This Performa is only for guidance and may be changed/amended at any stage at the discretion of Engineer. This is to be submitted on stamp paper of appropriate value at the Contractor's cost.**

**N.E. RAILWAY (IZZATNAGAR DIVISION)**

**CONTRACT AGREEMENT OF WORKS**

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

1. 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.

2. 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) 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.

3. 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:**

1 \_\_\_\_\_

2 \_\_\_\_\_

**FINAL SUPPLEMENTARY AGREEMENT**

1. Articles of agreement made this day \_\_\_\_\_ in the year \_\_\_\_\_ between the President of India, acting through the \_\_\_\_\_ Railway Administration having his office at \_\_\_\_\_ herein after called the Railway of the one part and \_\_\_\_\_ of the second part.
2. Whereas the party hereto of the second part executed an agreement with the party hereto of the first part being agreement Number \_\_\_\_\_ dated \_\_\_\_ for the performance \_\_\_\_\_ herein after called the 'Principal Agreement'.
3. And whereas it was agreed by and between the parties hereto that the works would be completed by the party hereto of the second part on \_\_\_\_\_ date last extended and whereas the party hereto of the second part has executed the work to the entire satisfaction of the party hereto of the first part.
4. And whereas the party hereto of the first part already made payment to the party hereto of the second part diverse sums from time to time aggregating to ₹ \_\_\_\_ including the Final Bill bearing voucher No. \_\_\_\_\_ dated \_\_\_\_\_ of value \_\_\_\_\_ duly adjusted as per price variation clause, if applicable (the receipt of which is hereby acknowledged by the party hereto of the second part in full and final settlement of all his /its claims under the principal agreement).

And whereas the party hereto of the second part have received sum of ₹ \_\_\_\_\_ through the Final Bill bearing voucher No. \_\_\_\_\_ dated \_\_\_\_\_ duly adjusted as per price variation clause (PVC), if applicable (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto of the first part in full and final settlement of all his/its disputed claims under principal agreement.

Now, it is hereby agreed by and between the parties in the consideration of sums already paid by the party hereto of the first part to the party hereto of the second part against all outstanding dues and claims for all works done under the aforesaid principal agreement excluding the Security Deposit, the party hereto of the second part have no further dues of claims against the party hereto of the first part under the said Principal Agreement. It is further agreed by and between the parties that the party hereto of the second part has accepted the said sums mentioned above in full and final satisfaction of all its dues and claims under the said Principal Agreement.

(Applicable in case Final Supplementary Agreement is signed after release of Final Payment)

**Or**

*And whereas the party hereto of the first part already made payment to the party hereto of the second part diverse sums from time to time aggregating to ₹ \_\_\_\_\_ through various On Account Bills (the receipt of which is hereby acknowledged by the party hereto of the second part).*

*And whereas the party hereto of the second part have received sum of ₹ \_\_\_\_\_ through various On Account Bills (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto of the first part and party hereto of the second part have accepted final measurements recorded on Page No..... to Page No..... of Measurement Book No .....and corresponding Final Bill duly adjusted as per price variation clause (PVC), if applicable, for full and final settlement of all his/its disputed claims under principal agreement.*

*Now, it is hereby agreed by and between the parties in the consideration of sums already paid through various On Account Bills and sums to be paid through Final Bill duly adjusted as per price variation clause (PVC), if applicable, based on accepted final measurements including the Security Deposit by the party hereto of the first part to the party hereto of the second part against all outstanding dues and claims for all works done under the aforesaid principal agreement, the party hereto of the second part have no further dues of claims against the party hereto of the first part under the said Principal Agreement.*

*(Applicable in case Final Supplementary Agreement is signed before release of Final Payment)*

5. It is further agreed and understood by and between the parties that the arbitration clause contained in the said principal agreement shall cease to have any effect and/or shall be deemed to be non-existent for all purposes.

Signature of the Contractor/s

for and on behalf of the President of India

Witnesses

ADDRESS: \_\_\_\_\_

## **CHAPTER-7**

### **ANNEXURES –A to M**

- |                         |                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------|
| <b>1. ANNEXURE – A:</b> | HISTORY SHEET OF THE TENDERER.                                                                    |
| <b>2. ANNEXURE - B:</b> | DETAILS OF CONSTRUCTION MACHINERIES, TOOLS and PLANTS, VEHICLES ETC.                              |
| <b>3. ANNEXURE –C:</b>  | DETAILS OF TECHNICAL AND OTHER PERSONNELS AVAILABLE ON HAND and PROPOSED TO BE ENGAGED IN WORK.   |
| <b>4. ANNEXURE - D:</b> | DETAILS OF WORKS COMPLETED DURING LAST SEVEN FINANCIAL YEARS and CURRENT YEAR BY THE TENDERER[s]. |
| <b>5. ANNEXURE - E:</b> | DETAILS OF WORKS ON HAND BY THE TENDERER[s].                                                      |
| <b>6. ANNEXURE - F:</b> | DECLARATION REGARDING ASSOCIATION OF RAILWAY OFFICER[S] WITH TENDERER[S].                         |
| <b>7. ANNEXURE - G:</b> | LIST OF COURT CASES DURING LAST 7 YEARS.                                                          |
| <b>8. ANNEXURE –H:</b>  | LIST OF ARBITRATION CASES DURING LAST 7 YEARS.                                                    |
| <b>9. ANNEXURE–I:</b>   | BROAD PLAN OF EXECUTION OF THIS WORK WITHIN THE STIPULATED COMPLETION PERIOD.                     |
| <b>10. ANNEXURE –J:</b> | DETAILS OF OTHER CREDENTIALS/FACILITIES AVAILABLE WITH THE FIRM/CONTRACTOR.                       |
| <b>11. ANNEXURE –K:</b> | DECLARATION REGARDING VISITING SITE OF WORK.                                                      |
| <b>12. ANNEXURE –L:</b> | CONSTITUTION OF FIRM.                                                                             |
| <b>13. ANNEXURE –M:</b> | DETAILS OF REAL TIME GROSS SAVING (RTGS)/NATIONAL ELECTRONIC FUND TRANSFER (NEFT).                |

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘A’**

**HISTORY SHEET OF THE TENDERER**

i]	Name of the Company	:
ii]	Address of Registered Office	:
	<b>Phone:</b> <b>Fax:</b> <b>e-mail ID:</b>	
iii]	Constitution of the Company/Firm	:
a]	Ownership particulars whether Private Ltd., Public Ltd., or Partnership firm or Proprietorship Firm or any other type duly supported by the documents such as Partnership Deed and Articles of constitution etc. as applicable.	:
b]	Name and address of collaborator[s]	:
c]	Nature of participation by collaborator[s] in shareholding of the Company	:
d]	Extent and nature of proposed participation by collaborator[s] in execution of this work	:
iv]	Number of years the firm has been in operation in India under its present	:
v]	Any other information	

Signature of tenderer  
Along with Seal

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘B’**

**DETAILS OF CONSTRUCTION MACHINERIES, TOOLS and PLANTS, VEHICLES ETC.**

**AVAILABLE ON HAND AND PROPOSED TO BE UTILIZED IN WORK**

Sl. No.	Description of equipments	Number available [Owned/ Hired]	Date of purchase	Date of manufacture	Make	How driven [i.e] Petrol/ Diesel /electrical	Condition of the equipment	Where the equipment can be inspected
1	2	3	4	5	6	7	8	9

Signature of tenderer

Along with Seal

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘C’**

**DETAILS OF TECHNICAL AND OTHER PERSONNELS AVAILABLE ON HAND and PROPOSED TO BE  
ENGAGED IN WORK**

Sl	N a m e	Age	Technical qualification[s]	Position with the tenderer	Commencement of present employment	Total experience	Emoluments
1	2	3	4	5	6	7	8

Signature of tenderer  
Along with Seal

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘D’**

**DETAILS OF WORKS COMPLETED DURING PREVIOUS SEVEN YEARS BY THE TENDERER[s].**

Sl	Name of the work with value of contract	Full address of the authority under whom the work has been executed with Telephone No. and Fax No.	Date of Award and Original completion period	Actual Date commencement and Actual Date of completion	Final value of contract in Rs.	Documentary proof of completion of work [enclose copies separately for each work and indicate Annexure No. in this column]
1	2	3	4	5	6	7

Signature of Tenderer

Along with Seal



**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘ E’**

**DETAILS OF WORKS ON HAND OF THE TENDERER[s]**

Sl	Name of work	Total cost of contact value in Rs/-	Month and year of commencement	Date of award and Completion period	Present progress of work		Full address of the authority under whom the work is being executed	Documentary proof [enclose copies of acceptance letter and proof regarding present progress etc. and indicate Annexure No. in this column]
					Total paid amount	Total balance amount (3-6)		
1	2	3	4	5	6	7	8	9

Signature of tenderer

Along with seal

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘F’**

**DECLARATION REGARDING ASSOCIATION OF RAILWAY OFFICER[S] WITH TENDERER[S]**

Sl	N a m e	Status with the tenderer	If working in Rly. on the date of tendering, designation and place of posting	If retired on the date of tendering		
				Date of retirement	Status at retirement	Particulars of permission taken for associating with the tenderer
1	2	3	4	5	6	7

Signature of Tenderer

Along with Seal.

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘G’**

**LIST OF COURT CASES DURING PREVIOUS THREE YEARS**

Sl	Name of work	Value of work	Name of Client Deptt.	Name of the Court	Date of institution of case	Relief sought from Court	Brief reason of dispute	Final/Present position of the case
1	2	3	4	5	6	7	8	9

Signature of tenderer  
Along with Seal

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘H’**

**LIST OF ARBITRATION CASES DURING PREVIOUS THREE YEARS.**

Sl	Name of work	Value of work	Name of Client Deptt.	Amount and date of claim preferred	Claim of Deptt. if any	Brief reasons of disputes	Final/Present position of the case
1	2	3	4	5	6	7	8

Signature of Tenderer  
Alongwith Seal

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘I’**

**BROAD PLAN OF EXECUTION OF THIS WORK WITHIN THE STIPULATED COMPLETION PERIOD**

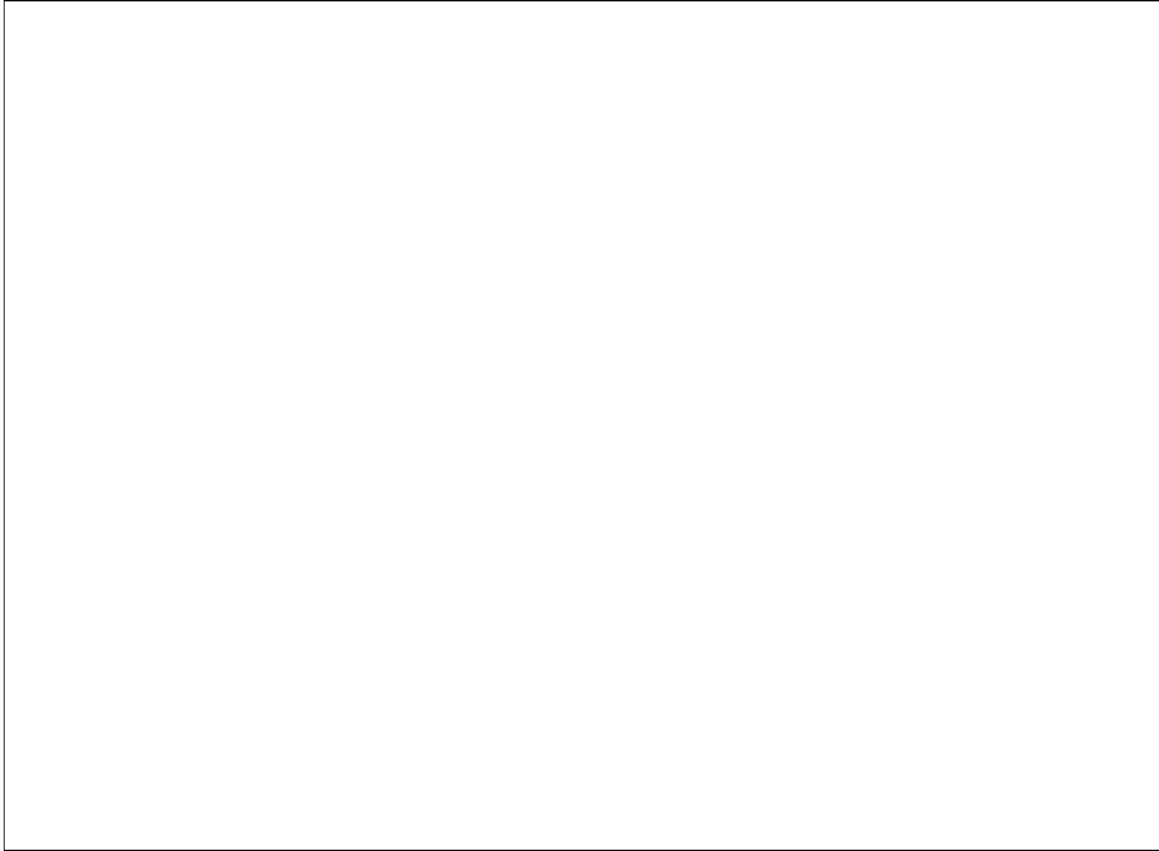
Sl.No	Activity	Period of completion in months

Signature of Tenderer  
Along with Seal

**NORTH EASTERN RAILWAY**  
**[ELECTRICAL (GENERAL)]**

**ANNEXURE – ‘J’**

OTHER CREDENTIALS/FACILITIES AVAILABLE WITH THE FIRM/CONTRACTOR

A large, empty rectangular box with a thin black border, intended for the tenderer to provide details of other credentials and facilities available with the firm or contractor.

Signature of Tenderer  
Along with Seal.

**PROFORMA**

**DECLARATION**

**Annexure-K**

I/We hereby solemnly declare that I/We visited the site of the work personally and have made myself/ourselves fully conversant of the conditions therein and in particular the following:-

1. Topography of area
2. Soil strata at site of work.
3. Source and availability of construction material.
4. Rates for construction of material, water electricity including all local taxes, royalties, octroi etc.
5. Availability of local labour (both skilled and unskilled) and relevant labour at said labour laws.
6. The existing roads and approaches to the site of work and requirements for further services roads/approaches to be constructed by me/us.
7. The availability and rates of private land etc. That shall be required by me/us for various purposes.
8. Climatic conditions and availability of working days.

I/We have quoted my/our rates for various items in the schedule of items, quantities and rates taking into account all the above factors also.

Signature of theTenderer/s

**Constitution of Firm**

1. Full name of contractor/s  
construction firm and year of  
establishment.
2. Registered Head Office Address.
3. Branch Office in India.
4. Address on which correspondence regarding this  
tender should be done.
5. Constitution of firm, give full details including  
name of partners/ executives/power of  
attorney/holders etc.
6. Particulars of registrations with Government/Semi  
Govt. Organization, Public Sectors Undertakings and  
local bodies etc.

Signature of theTenderer/s.



Real Time Gross

Settlement (RTGS)/National Electronic Fund Transfer (NEFT) (Model Mandate Form) (Investor/customer's option to receive payments through RTGS/NEFT)

1. Investor/customer's name
2. Particular's of Bank Account:
  - A) Name of the Bank:
  - B) Name of the Branch.  
Address  
Telephone No.
  - C) RTGS/NEFTIFS Code.
  - D) Type of the account (S.B./  
Current or Cash Credit)  
With code (10/11/13).
  - E) Ledger and Ledger folio number.
  - F) Account number (as appearing on the Cheque book) (in lieu of the bank certificate to be obtained asunder, please attach a blank cancelled cheque or a photocopy of a cheque or front page of your savings bank pass book issued by your bank for verification of the above particulars)
3. Date of effect

I hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all or incomplete or incorrect information, I would not hold the user institution responsible. I have read the option invitation letter and agree to discharge the responsibility expected of me as a participant under the scheme.

Date

(.....)

Signature of the Investor/Customer

Certified that the particulars furnished above are correct as per our records.

Signature of Bank Authority

(With seal)

Signature of the tenderer

## CHAPTER-8

### Additional special TECHNICAL conditions of contract (Technical Specifications/Requirement) Electrical Department

**1 GENERAL:**

- 1.1 Principal items of works to be carried out by the tenderer/contractor are as noted in the tender document.
- 1.2 The quantities of works to be carried out by the tenderer/contractor will be as mentioned in the work order/Agreement.
- 1.3 The approximate value of the work is specified in the Tender Notice/Agreement.
- 1.4 Plans for the works as may be available, may be inspected in the Office of the Senior Divisional Electrical Engineer (G.)/ Izzatnagar/ N.E. Railway.
- 1.5 **COMPLETION PERIOD-** Time is the essence of contract, no relaxation shall be permitted in phase wise execution and commissioning of work. Overall this work has to be completed within time period as written in NIT, from the date of issue of Letter of Acceptance, as per phase wise work execution Plan :

Phased work completion plan	Brief Detail of Work	Approximate Cost Share in advertised Tender value
<u>Work - I</u>	General Electrification work in connection of construction of S&T service building at interlocked LC gate (Total = 19 Nos. LC).	<u>Rs. 116.79 Lakh</u>

**1.6 MAINTENANCE PERIOD AND WARRANTY**

On the completion of the work to the satisfaction of the Engineer, it will be taken over. From the date of taking over, the contractor shall be responsible for under warrantee defect liability of the work for a further period of 12 months from date of completion of work except **LED Luminaires and BLDC ceiling fan (Warrantee period for LED Luminaires and BLDC ceiling fan is 60 Months from installation)** as mentioned in schedule. The contractor shall make good and remedy at his own expenses, within such period as may be stipulated by the Engineer, any defect which may develop and intimation of which has been sent to the 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 receipt of such notices, the Engineer may without further notice make his own arrangements to rectify the defects and the cost of such rectification shall be recovered from the security deposit of the contractor.

*(This condition is applicable of all construction material/equipments supplied & erected under contract and shall not be applicable in case of contract for ballast supply, Carting/Transportation, Hiring of road Vehicles).*

**(Successful Tenderer shall submit additional security deposit @ 10 % of the Contract Value of all LED luminaire fitting items and @ 5 % of the Contract Value of the item of ceiling fan in the prescribed proforma, before claiming the final payment. This additional Security shall be released after successful completion of respective items defect liability period.)**

- 1.7 All the works included in the tender/contract shall be completed within the time specified in the tender/agreement.
- 1.8 The additional special conditions dealt in the document, Instructions to Tenderer[s] and the stipulations made in the Schedules of items of works shall govern the works under this contract, in addition to and/or in part supersession of Indian Railway Standard General Conditions of Contract corrected up to date of closing of tender.
- 1.9 Where there is any conflict between the Instructions to Tenderer[s], Additional Special Conditions of Contract and the stipulations contained in the Schedules of Items quantities and rates on the one hand and Indian Railway Standard General Conditions of Contract corrected up to date of closing of tender on the other, the former shall prevail.
- 1.10 **Any notes appearing in the Schedule of Quantities and Rates will take precedence over Additional Special Conditions of Contract and also GENERAL CONDITIONS OF CONTRACT and STANDARD SPECIFICATIONS. The**

**Railway will take for granted that Tenderer[s] has/have acquainted himself/themselves with all terms and words used in the tender before submitting the tender.**

**SPECIFICATIONS:**

- (i) All the works shall be carried out in accordance with the specifications contained in the book, GCC, to the extent amended or modified, by the special Specifications in this documents.
  - (ii) Any specifications, not covered by these documents, shall be in accordance with relevant IRS Codes, BIS Codes, IRC codes and MORTH specifications read in the said order.
- 1.11 Any specifications/conditions stated by the Tenderer[s] in offer submitted by him/them along with the tender shall be deemed to be a part of the contract only to such an extent as has been expressly accepted by the Railway.
  - 1.12 All measurements, methods of measurements, meaning and item of specifications and interpretation of Special Conditions of Contract given and made by the Railway or by the Engineer on behalf of the Railway shall be final and binding and shall be considered as “**excepted matters**” in terms of Clause 63 of INDIAN RAILWAY STANDARD GENERAL CONDITIONS OF CONTRACT corrected up to date of closing of tender.
  - 1.13 Any change in the address of the contractor shall be forthwith intimated in writing to the Railways. The Railway will not be responsible for any loss or inconvenience suffered by the contractor on account of his failure to comply with this.
  - 1.14 The Railway Administration reserves the right to alter the detailed plans and sections and to carry out minor alterations in the plans resulting in the corresponding increase /decrease in the quantity of work without being liable to pay enhanced rates for the work and to allow extra time for completion of the work

**2.0 REMOVAL OF OBSTRUCTIONS**

- 2.1 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 etc., by the contractor at his own cost.
- 2.2 The contractor shall not have any claim in case of delay by the Railway in shifting, raising, removing of telegraph, telephone, or electric lines (overhead or underground) and other structures, if any, which may come in way of the work.

**3.0 REMOVAL OF DEFECTIVE WORKS**

If, in the opinion of the Engineer, any of the works had been executed with improper materials or defective workmanship, the contractor when required by the Engineer, shall re-execute the same and substitute proper material and workmanship forthwith at his own cost and in case of default of the contractor in doing so within a week, the Engineer shall have full power to employ other person to execute the work and the cost thereof shall have to be borne by the contractor.

**4.0 MEASUREMENT, CERTIFICATE AND PAYMENT:**

*100% payment will be made on successful execution of work & certification by the Railway site-supervisor on month to month basis, for all scheduled/Non-scheduled items.*

*Note :- Material procurement and work execution shall be executed only after approval of respective design and drawings for electrification of station yards and buildings, as provisioned vide schedule item code MIC-03, MIC-04 & MIC-05.*

- 5.0 The tenderer for carrying out any construction work in UP/Uttrakhand must get themselves registered from the Registering Officer under Section-7 of the building and other construction workers [Regulation of Employment and Conditions of Service] Act 1996 and Rules made thereto. The tenderer shall be required to submit certificate of Registration issued from the Registering Officer of the Govt. of UP/ Uttrakhand [Labour Department]. The cess shall be deducted from the contractor's bills as per provisions of the Act. As per this Act, the tenderer shall be levied a cess @ 1% of cost of construction work.

**Accountal of Recovery:-**

[i] The contractor bill amount shall be debited to concerned work and the recoverable amount of BOCW Cess @ 1% shall be credited under Suspense Head-Deposit Misc [BOCW Cess] before arranging payment to the contractor.

[ii] Suspense Head-Deposit misc [BOCW Cess] shall be cleared/debited at the time of payment to respective BOCW Fund/Board by credit to the Suspense Head-Cheques and Bills.

**6.0 TIME IS THE ESSENCE OF CONTRACT:**

- 6.1 Time is the essence of contract. All the works are required to be completed in all respects as stipulated by the Railway within the completion date. Progress shall be maintained strictly in accordance with the programme given by the Contractor and accepted by the Engineer-in-charge from time to time as per the programme chart as per [BAR/CE/PERT chart] as will be finalized.
- 6.2 Failure on the part of the contractor to complete the works in the date stipulated in the Agreement for completion of respective

works will entitle the Railway Administration to impose penalty on the contractor in terms of Indian Railway Standard General Conditions of Contract, together with its correction slips issued up to the date of opening of tender.

- 6.3 If the work is terminated during execution of the work, in accordance with the prescribed conditions of Clause-61 and/or 62 of General Conditions and any other relevant Clause appearing in the Indian Railway Standard General Conditions of Contract with the correction slips issued upto the date of closing of tender, the Railway Administration reserves the right to invite fresh tenders for the whole or any portion of the work.

#### **7.0 APPROVAL OF SAMPLES OF MATERIALS**

All materials to be used in the work by the contractor shall be subject to the prior approval of the Engineer-in-charge of the work. Before using in the works, the contractor[s] shall submit samples and technical specification and test reports of equipment/construction materials per quality assurance plan QAP (attached) and arrange for the supplies, for the work only, if the same are approved.

#### **8.0 IS CODES/IRS's SPECIFICATIONS.**

- 8.1 [i]Whenever any reference to Code, Specification, Act, etc. is made in the documents, it shall be taken as a reference to the latest version thereof, including all amendments and corrections thereto or otherwise specified.
- 8.2 [ii]The Contractor shall not be entitled to any extra payment on any account for compliance with the various provision of I.S. Specifications and Additional Special Conditions. The rate indicated in the Schedule shall be deemed to include all works required to be done in compliance with the specifications.
- 9.0 Tenderers are advised not to put their own special conditions particularly related to specification and nature of work.

10.0 The following deduction will be done on the time of passing bill for payment: -

1. 2% Income Tax on the total cost of the contract.
2. TDS: -1% CGST & 1% SGST or 2% IGST whichever applicable.

Moreover, any other charges will be deducted from contractor's bill as per Railway board latest guidelines.

- 11.0 Conservancy cess charges shall be recovered from the contractor's bill @ given below:-

Description of category	Average no. Of labour/workman employed per day	Conservancy cess charges to be recovered (per Month)
1- Railway Contractors		
(a) Engg. Works contractors (Engg. Elect. Mech. & Signal etc.)	1 to 5	Rs. 159.00
	6 to 10	Rs.312.00
	11 to 25	Rs. 785.00
(b) Genl. Goods handling contractors including contractors awarded by store deptt.	26 to 50	Rs. 1143.00
	51 to 100	Rs.1534.00
	101 to 200	Rs. 1926.00
(c) Coal handling ash pit cleaning contractors	201 to 300	Rs. 2318.00
(d) Railway siding use by the contractors.	301 to 750	Rs. 2676.00
	751 to 1500	Rs.5382.00
(e) Contractor supplying water to Engines.	1501 to 3000	Rs. 10768.00
	3000 & over	Rs. 21508.00

## EARTHING

- 1.1.0 General :-Earthing shall conform to the following specifications. For other details nos covered in this specification relevant Indian standards shall be referred to :-
- 1.1.1 Types of earth electrodes:-
  - (a) Pipe earth electrode
  - (b) Plate earth electrode
  - (c) Strip or conductor earth electrode
- 1.2.1 Selection of earth electrode: -
- 1.2.2 G.I. Pipe or G.I. Plate earth electrode shall be used except where it is unavoidable to use copper plate earth electrode due to corrosive soil conditions for direct current system or for large capacity sub-stations.
- 1.2.3 Strip or conductor electrode is recommended for hard and rocky soils and in locations Where there are limitations to the use of pipe or plate earth electrode.
- 1.2.4 Where the soil is highly corrosive the earth electrode shall be copper. Where soil contains sulfur, copper electrode shall be adequately tinned.
- 1.3. Arrangement for earth electrode: -
- 1.3.1 Pipe earth electrode: - G.I. Pipe shall be of medium class, 40mm dia, and 4.5mm in Length galvanized of the pipe shall conform to relevant in Indian standard G.I. Pipe electrode shall be cut tapered at the bottom and provided with holes of 12mm dia drilled not less than 7.5 cm from each other up-to 2M. of the length from the bottom. The electrode shall be buried in the ground vertically with its top not less than 20cm below ground level (Details shown in the drawings).
- 1.3.2 Plate earth electrode :- For plate electrodes minimum dimension of the electrodes shall be as under :-
  - (a) G.I. Plate electrode – 60cmx60cmx6cm thick.
  - (b) Copper plate electrode:- 60cmx60cmx3cm thick. The electrode shall be buried in ground with its faces vertical and top not less than 3cm below ground level. (Details shown in the drawing).
- 1.3.3 Strip or conductor electrode:-
  - (a) Strip electrodes shall not be less than 25mmx4mm of galvanized iron and 25mmx1.6mm of copper. For conductor electrodes the size of round conductor shall be not less than 6 SWG of G.I. and 8 SWG copper.
  - (b) The length of buried strip or conductor earth electrode shall be not less than 15M. This conductor length shall be increased if necessary on the basis of the information available about soil resistance so that the required earth resistance is obtained.
  - (c) The electrodes shall be buried in trench not less than 0.5 cm deep. If conditions necessitate use of more than 1 strip or conductor electrode they shall be laid as widely distributed as possible preferably in a single straight or circular trench or in number of trenches radiating from one point.
- 1.4 Method of Installing watering arrangement :-
- 1.4.1 In the case of plate earth electrodes a watering pipe of 20mm dia of medium class G.I. pipe shall be provided and attached to the electrodes as shown in the drawing. A funnel with mesh shall be provided on the top of this pipe for watering the earth. In the case of pipe electrode a 40mmx20mm reducer shall be used for fixing the funnel. The watering funnel attachment shall be housed in masonry enclosure of not less than 30cmx30cmx30cm.
- 1.4.2 A cast iron/MS frame with cover having locking arrangement shall be suitably embedded in the masonry enclosure.
- 1.5 Location for earth electrode :-

Normally an earth electrode shall not be situated less than 1.5M from any building care shall be taken that the excavation for earth electrode may not effect the column footings or foundation of the building in such cases electrodes may be further away from the building. The location of the earth electrode will be such where the soil has reasonable chance of remaining moist as far as possible. Entrances, pavements and roadways are definitely avoided for locating the earth electrode.
- 1.6 Artificial Treatment of soil :-

In case there is no option of site and earth electrode resistance is high, the earth electrode resistance shall be reduced by artificial chemical treatment of the soil – For this purpose the most commonly used substances are sodium carbonate, copper, sulfate and salt mixed with salt coke or charcoal in suitable proportion. But before any chemical treatment is applied, possible corrosive effects on the electrode material and connection must be taken into consideration. When this treatment is resorted to the electrode shall be surrounded by charcoal coke and salt as indicated in the drawing. This treatment of soil shall be specified in the schedule of work and in such cases excavation for earth electrode shall be as per dimension indicated in the drawing.
- 1.7 Size of earthing lead :-
- 1.7.1 Main earthing lead :-The main earthing lead shall be of G.I. wire in the case of G.I. pipe earth electrode, G.I. wire or G.I. Strip, in case of G.I. strip or G.I. Plate earth electrode and copper wire or copper strip in the case of copper earth electrode. For all electrical installations except sub-stations and generating station, the earthing lead shall be not less than one half of sectional area that of the largest conductor to be protected but that a conductor to be protected but that a conductor to be protected but that a conductor larger than 100 sq.mm nominal cross sectional

area (2/0 SWG) in case of G.I. conductor need not to be used. The minimum size main earthing lead shall not be less than 8 SWG of copper or G.I. wire and 20mmx3mm in case of copper strip or 25mmx4mm in case of G.I. strip.

1.7.2 SIZE OF EARTH LEAD FOR SUBSTATIONS/GENERATING STATIONS :

The recommended size of copper earth bus in case of generating station sub-stations shall be :-

Capacity of transformer/Generating set	Size of copper strip in mm.
a) Up to 300 KVA	20x4
b) Above 300 KVA but not exceeding 500 KVA	32x5 or 40x4
c) Above 500 KVA but not exceeding 800 KVA	40x6.3 or 50x5
d) Above 800 KVA but not exceeding 1000 KVA	50x6.3 or 232x5 40x4

1.7.3 Size of Earth Continuity Conductor: -

The nominal minimum cross sectional area of an earth continuity conductor not contained within a cable or flexible cord shall be 14 SWG copper or 12 SWG of G.I. or 4 Sq.mm aluminum wire.

1.8 Method of connecting Earthing lead to Earth Electrode :-

6.8.1 In the case of plate earth electrode the earthing lead shall be securely bolted to the plate with two bolts, nuts, checknuts and washers. In the case of pipe earth electrode, it shall be connected by means of a through bolt, nuts and washers and cable socket as indicated in the drawing.

1.8.2 All materials used for connecting the earth lead with electrode shall be G.I. in case of G.I. pipe and G.I. plate earth electrode and of tinned brass in case of copper plate electrode.

1.8.3 The earthing lead shall be securely connected at the or end to the main board.

1.8.4 Loop earthing shall be provided for all mountings of main board and other metal clad switches and distribution fuse boards with not less than 14 SWG copper or 12 SWG G.I or 4 sq mm aluminum wire .

1.9 Protection of Earthing Lead :-

The earthing lead from electrode onwards shall be suitably protected from mechanical injury by a 15mm dia GI pipe in case of wire and by 40mm dia medium class GI pipe in case of strip. Portion of this protection pipe within ground shall be buried at least 30cm deep ( to be increased to 60 cm in case of road crossing and pavements). The portion within the building shall be recessed in walls and floors to adequate depth.

1.10 No. of Earth Electrodes for Installation :-

1.10.1 In all cases the relevant provisions of rule 33.61 and 67 of Indian Electricity Rules 1956 as amended shall be complied with.

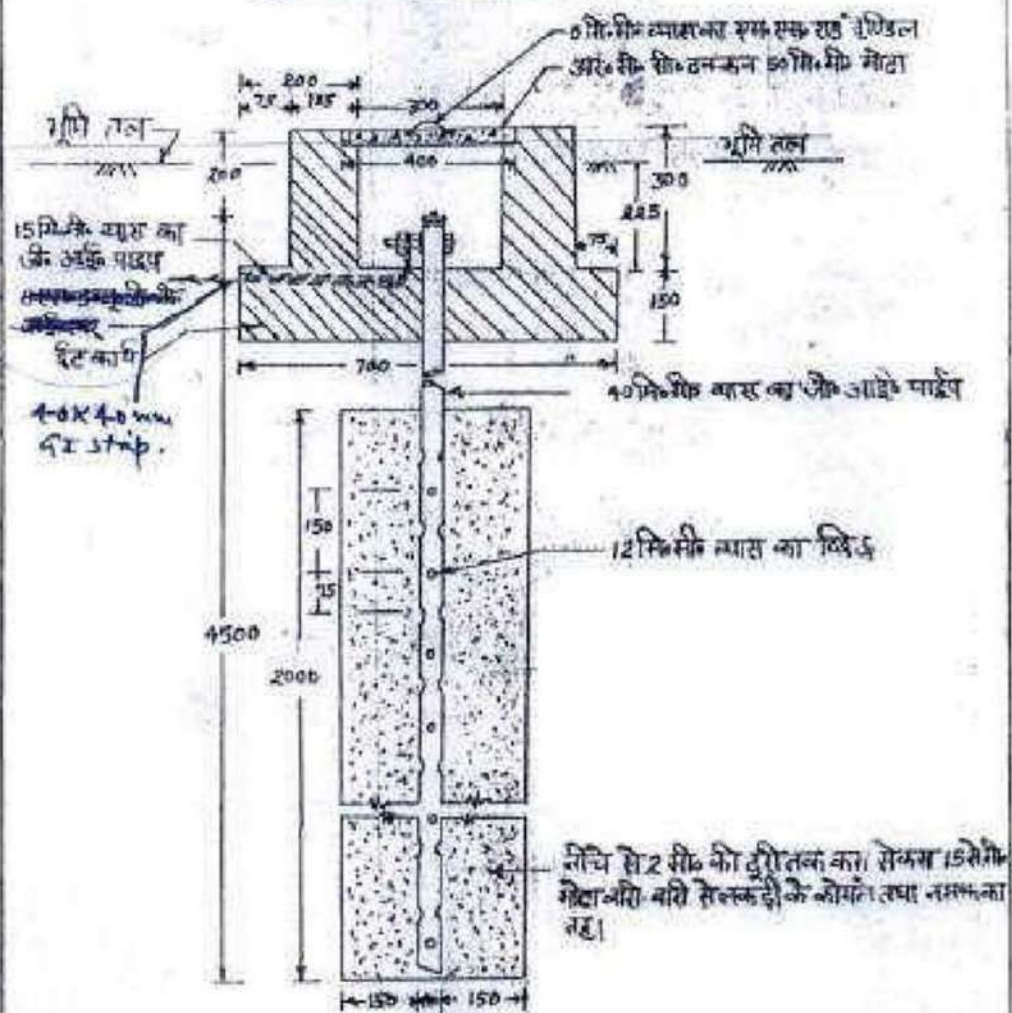
1.10.2 Metallic covers or supports of all medium pressure or HT apparatus or conductors shall, in all cases be connected to not less than two separate and distinct earths including electrodes.

1.10.3 The number of earthing electrodes for substations having one transformer or one generating set shall be not less than four (two for neutral and two for earthing the metal frame). Separate earth electrodes shall be provided for lightning arresters/lighting conductor.

1.11 Earth Resistance :-

No earth electrode shall have a greater Ohmic resistance than five Ohms as measured by an approved earth testing apparatus. In rocky soil the resistance may be upto eight Ohms.

पाईप अर्थिंग का डिटेल्स  
(सभी मशीनों में दिखाना सगर्ह)



डा. अ. ग. स. - ३९ मु. नि. बं. (निर्माण)/गोरखपुर/मानक/५/०४९८

उप मुख्यालय दिनांक	संज्ञित वन विभाग	मुख्य अधिकारी	दिनांक
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## **Specification No. CEE/Maintenance Free Earthing/July 2009**

### **1.0 Scope of Work:**

This Specification covers Installation, Testing and Commissioning of Maintenance Free Earth Electrode and its component, to achieve earth resistance less than 1 Ohm. The purpose of this specification is to provide guide lines for latest and long lasting earthing system for various application to meet Rules 51 & 61 of Indian Electricity Rule – 1956. This specification covers in detail the component to be used and the procedure for constructing the pit for maintenance free earthing system. The main purpose of using this new technology is to ensure that the resistance between the earth electrode and the equipment is nearly zero, consistently throughout the year. The earth electrode shall not rise the temperature, deforms the chemical characteristic of Earth enhancing material and soil under normal and during faulty currents flow. It is also required that the earth resistance shall not vary during the flow of faulty current and allow to drain the faulty/leakage current.

**2.0 Reference :** This Specification requires the reference to the following documents.

- IS 3043 -1947 : Code of practice for earthing.
- IE Rule 1956 With Latest Amendments.

**3.0 Objective :** Earthing is a essential part of any electrical installation which provides safety to human as well as electrical machines/equipment.

At present conventional type earthing system are provided for various application. Due to presence of salts and acidic media, corrosion is comparatively much faster and conductor gets corroded very fast, further increased soil resistivity & fluctuating earth resistance, also hamper the performance of earthing system. So there is need to develop maintenance free, corrosion free, fluctuation free & less ohmic value earthing system.

The purpose of this is to ensure that in general, all parts of apparatus other than live parts, shall be at earth potential as well as to ensure that operators and users shall be at earth potential at all times. Thus the purpose of the earthing is to save human being from electrical shock and safe working in Electrical installation in any fault condition due to leakage of currents.

### **4.0 Application :**

- ❖ Transmission and distribution System.
- ❖ Substation & Generators.
- ❖ Transformer Neutral Earthing.
- ❖ Pumping Installation.
- ❖ Lightning Arrester Earthing.
- ❖ Computers & data processing centres etc.

### **5.0 Earth Resistance :**

The value of Earth resistance at earth BUS Bar should be less than 0.5  $\Omega$ .

### **6.0 System Earthing And Equipment Earthing:**

Earthing associated with current carrying conductor is normally essential to the security of the system and is generally known as system earthing. While earthing of non current carrying metal work and conductor is essential to the safety of human life, animal and property and is generally known as equipment earthing.

### **7.0 Technical features of Earthing Installation:**

7.1 The Value of Earth Resistance should be less than 1  $\Omega$  for single earth installation.

7.2 Electrode & Chemicals should be corrosion free.

7.3 Least fluctuation of ohmic value.

7.4 Galvanization should be adequate i.e. thickness 80 to 100 micron.

7.5 Practically no need to maintain i.e. maintenance free (Fit & Forget).

7.6 The system should be of “Dual Pipe Technology”.

7.7 Pit size should be of the order of 5 feet  $\times$  5 feet  $\times$  10 feet.

7.8 The electrode shall be of 3 meter in length with the outer pipe of 80 mm diameter & inner pipe of 50 mm diameter dully tested & certified by CPRI.

7.9 The chemical earth electrode should be tested in CPRI for Peak & RMS Currents.

7.10 The chemical earth electrode shall be surrounded by resistance lowering grounding minerals to increase the overall conductive surface area in order to lower the ohmic value and also to minimize the corrosion process.

7.11 The Earth electrode should be able to carry the peak short circuit withstand current of minimum 50 kA and dully tested & certified by CPRI.

7.12 Resistance lowering grounding material should be electrolytic gel of highly conductive. It should be made of natural components (graphite, minerals etc.), it absorbs the moisture from surrounding soil & is non corrosive.

7.13 To improve the overall efficiency of the earthing system, 5 litres of J. K. Enhancer liquid should be added at appropriate intervals during the time of installation.

7.14 The packing material for one pit should be 75 Kg.



**8.0 Earth Electrode:** The earth electrode is the component of the earthing system, which is in direct contact with the ground and thus provides a means of releasing or collecting any earth leakage currents. The material should have good electrical conductivity and should not corrode in a wide range of soil conditions. Copper or Galvanised steel is generally the preferred material.

**8.1** Primary conductor diameter 25/40 mm pipe ISI marked as per IS 1239 with addition of 15 micron galvanization and length of pipe not less than 3000 mm. The surface area of Primary conductor pipe should not be less than 23500 Square mm.

**8.2** Secondary Conductor diameter 50/60/80 mm pipe ISI Marked as per IS 1239 with addition of 15 micron galvanization and length of pipe not less than 3000 mm. The surface area of Primary conductor pipe should not be less than 470000 Square mm. An additional coating of 30 to 40 micron EC grade copper should be applied on the outer surface for better corrosion protection and enhancing the life of earthing system.

**8.3 Crystalline Conductive mixture:** To be filled between the annular space between two co-axial pipe and inside inner pipe as well. Crystalline Conductive mixture to be injected in the electrode assembly. It is a combination of high conductivity material alloys such as copper & aluminium powder, conductive carbon and bonding materials etc. mixed in different proportion. The mixture is forced (Pressurized) filled inside the earth electrode in the paste form and after solidification of the same, the cap is placed. The metal alloys helps in conducting the current and conductive carbon gives anti corrosive property.

**8.4 X-Ray quality welds :** For all joints the welds should be X-Ray quality.

**8.5** Its surface shall be clean and free from any visible oxide layer or foreign material.

**8.6 Current Carrying capacity :** The design of the electrode should be such that it is able to carry minimum 20 kA (for 10 sec) current with test certificate from Central Power Research Institute or any Govt. Laboratory.

**8.7 Corrosion test :** It should be as per IS 2119. Salt spray test for analysis of effect of corrosion for the specific design be done through reputed testing lab, preferably 500 Hrs of salt spray test or more is required.

**8.8 Life cycle analysis :** Life cycle analysis against corrosion protection for the design should be done through reputed test lab & copy of test report to be enclosed with the tender.

#### **9.0 Earthing Conductor :**

**9.1** A copper bus bar of size 200mm×25mm×5mm to be installed in the equipment room and with preferably a copper conductor of 25mm×3mm or 6 mm<sup>2</sup> suitable length bare copper wire from instrument to the BUS BAR. The connecting terminal of the earth electrode to the BUS BAR must be connected by copper strip of 25mm×3mm />6mm<sup>2</sup> bare solid copper conductor of suitable length buried inside a trench of 300mm width × 600mm depth (from the earth pit to the nearest well). However, it shall be ensured that only minimum required length is used and any extra length is cut away to keep the earth impedance minimum.

**9.2** It shall be highly conductivity copper. The maximum specific resistance of the copper strip earthing conductor shall be 17.241×10<sup>-7</sup> Ohm-cm at 20°C.

**9.3** It shall be connected to earth electrode with the help of two rivets or nut bolt as suitable and to earth BUS BAR with welding.

#### **10.0 Packing / Backfill Material/ Soil Enhancer Earthing Compound:**

**10.1** It should have low resistivity preferably below 10 ohm meter.

**10.2** It should be a little alkaline in nature with pH value >07 but <10, test certificate be provided for composition so designed.

**10.3** It should have better hygroscopic properties to absorb moisture.

**10.4** It should have capacity to have >10% moisture at 105°C. Test certificate from reputed labs to be submitted for the composition so designed.

**10.5** It should have water solubility less than 5%, test certificate from reputed labs to be submitted for the composition so designed.

**10.6** It should be Eco-friendly and containing natural curing clays.

**10.7** The Soil enhancer Earthing compound shall be in fine powder form free from lumps and moisture.

**10.8** It shall contain minimum 70% carbon.

**10.9** Its maximum specific resistance shall be 30×10<sup>-6</sup> Ohm –cm.

**10.10** Its bulk density shall be 1.3 – 1.95 gm/cm<sup>3</sup>.

**10.11** In all cases back fill medium must be non corrosive, be of a relatively small particle size and should, if possible, help to retain the moisture. The soil should have a pH value between 6.0 (acidic) and 10 (alkaline). Normal, stiff clay is not a suitable backfill as, if heavily compacted, it may become almost impervious to water and could remain relatively dry. It may also form large lumps, which do not consolidate around the rod. Material, which should not be used as back fill, includes sand, coke – breeze, cinders and powder – station ash, many of which are acidic and corrosive. Normally the excavated soil shall be used if it free from sand gravel and stones. In cases the excavated soil contains sand gravel and stones lines be removed by appropriate methods such as hand picking sieving etc. small proportion of sand in the soil may be permissible. If the excavated soil contains sand, gravel and stones in large proportion and it is not feasible to remove these economically, good quality soil from other place may be used for backfilling.

While back filling the soil shall be thoroughly compacted with at least 5 Kg compactor. In case the soil is dry, small quantity of water may make the soil muddy which is not suitable for compacting and after drying the soil may contain voids which may permanently increase earth resistance.

### **11.0 Construction of Unit Earth :**

- 11.1 Make 5feet ×5feet ×10feet earth pit (expect in Rocky soil).
- 11.2 Sieve the soil digged and remove the gravells and stones. If soil quitly is good (without murum and rocks) then add some quantity of packing material in the soil for using as back fill.
- 11.3 If the soil seems unusable (containing large quantity of gravel, stones, murum, sand etc.) then replace the soil with black cotton soil.
- 11.4 insert the electrode at the center of the earth pit and arrange to keep it vertical in the pit.
- 11.5 Arrange for water supply for the earth pit.
- 11.6 Fill the pit with the back fill and keep on adding the packing material surrounding the electrode and simultaneously watering the pit.
- 11.7 The procedure to be repeated till completion of the filling of the earth pit along with the packing material and sufficient watering adequate ramming.
- 11.8 The pit should be very compactly rammed and watering for 2-3 days and addition of soil if required be done.
- 11.9 Make trench of 600mm depth × 300mm wide from the earth pit to the nearest point of the connection.
- 11.10 Connect the copper tape / bare copper solid conductor (06mm thickness) to the connection terminal of the electrode and lay the copper tape and fill up the trench properly. Connect to the BUS bar.
- 11.11 Construct earth pit with cover for the installation.
- 11.12 Measure the earth resistance as per IS 3043/1987 Code of practice.
- 11.13 If less resistance is required Than multiple earth can be constructed and interconnect. Distance between earthing electrode should not be less than the length of earth electrode. Combined earth resistance can be calculated as :

$$\frac{1}{\text{Req.}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots$$

where Req.=Equivalent Earth Resistance.

R1, R2, R3, .... = Individual Earth Resistance.

### **12.0 Earth pit Chamber & Cover :**

This shall be square shaped frame of 450 (±10) mm ×450 (±10) mm size made from 25 (±3) mm × 25 (±3) mm ×3 (±0.5) mm mild steel angles welded at corners and with 4(±1) mm dia ribbed mild steel rods. Welding shall be sufficiently strong. The welded mild steel angle frame with rods shall be supplied in the set and masonry work shall be done during installation by installation agency.

**13.0 Marking:** Following information shall be legibly marked on the earth pit. The marking shall be clear, distinct and visible to the naked eyes from a distance of about one meter, the size of marking shall be minimum 25 mm.

- Specification No.
- ER Values with dates.

**14.0 Test report & drawings :** The tenderer will submit the documents shown in clause No. 10 and CPRI test report of earthing electrode and chemical used with this. The tenderer will also submit the essential drawings of earthing system complete.

**15.0 FREE SERVICE:-** Supplier shall agree to do free servicing of Earthing electrode & chemical used during guarantee / warrantee period. Any fault occurring in it during guarantee period shall be attended and rectified within the time frame given by the Railways.

**16.0 DEVIATION:-** Deviation from any of the clauses of the above specification shall be clearly indicated in the offer, otherwise it will be presumed that the offer is strictly as per this specification.

**17.0 WARRANTY:** The manufacturer shall warranty the material covered by this specification to be free from defects in design, material and workmanship under ordinary use and service this obligation under this warranty being limited to replace free of cost those parts which part shall be found defective within 05 year after installation & commissioning. This warranty shall not apply to any component which shall have been repaired are altered in any way by any one other than the manufacturer or its representative. The tenderer has to give the earthing system's expected life minimum 15 to 20 years.

**18.0** Earthing Electrode of following manufacturer/supplier or of The firm having experience in the field of maintenance free earthing electrode of minimum eight years or more only shall be acceptable.

- Sanbros Spares Pvt. Ltd. – Nagpur.
- Galaxy Earthing Electrodes Pvt. Ltd. – Chennai.
- BBN Trading Company, Plot No. 1555, Sector-7, Ext. Gurgaon.

### **19.0 Questionnaire**

(To be filled by tenderer)

	DESCRIPTION	TENDER SPECIFICATION	TENDERER's OFFER
19.0	Earthing Electrode type	GI or Copper	
19.1	Length of electrode	3000 mm	
19.2.0	Outer pipe.	Galvanisation 80 to 100 micron.	
19.2.1	Outer pipe.	Thickness of pipe– 3.25 mm to	

		3.65 mm or more.	
19.2.2	Outer pipe.	Outer shell diameter–50 mm to 80 mm or more.	
19.3.0	Inner pipe.	Galvanisation 200 to 300 micron.	
19.3.1	Inner pipe.	Thickness of pipe– 3.25 mm or more.	
19.3.2	Inner pipe.	Inner shell diameter–25 mm.	
19.4	Value of probable Earth resistance per electrode.	Tenderer to be specify.	
19.0	Brand, Name & Quantity of Chemical used as moisture booster around the outer shell pipe.	Quantity should not not less than 50 Kg and Tenderer to be specify Brand, Name & Quantity.	
19.1	Quantity of Chemical used as moisture highly conductive compound in between both pipes.	Tenderer to be specify Brand & Name.	

**TECHNICAL SPECIFICATION FOR LED BASED LUMINARIES  
(INPUT VOLTAGE SINGLE PHASE 230 VOLT AC, 50Hz) FOR  
GENERAL SERVICE APPLICATIONS****INDEX**

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**TECHNICAL SPECIFICATION FOR LED BASED LUMINARIES (INPUT VOLTAGE SINGLE PHASE 230 VOLT AC, 50Hz) FOR GENERAL SERVICES APPLICATIONS AND LED BASED SIGNAGES.**

**1.0 SCOPE:**

This specification defines the requirement of Design, Manufacture, Supply, Testing & Inspection of LED based luminaries/fixtures for various applications such as Street Lights, Office Buildings, Platform Lighting and LED based signages etc. for General services ~~and for indoor & outdoor applications.~~

**2.0 REFERENCE STANDARDS:**

The following documents given below are for reference to the manufacturer for design, manufacture, performance, safety, environmental, biological & other type test requirements. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of this specification shall prevail.

**IS/IEC:**

SN	Specification no.	Description
1.	IEC: 61347-2-13/EN: 61347-2-13/ IS: 15885 (Part-2/Sec.-13)-2012	LED Driver Safety Requirements- Lamp control gear, particular requirements for DC or AC supplied electronic control gear for LED modules.
2.	IEC:62384/IS:16104-2012	LED Driver Performance Requirements-DC OR AC supplied electronic control gear for LED modules performance requirements
3.	IS:14700 (Part-4/Section-2)	Standard Testing of LED Driver
4.	CISPR-15/IS:6573, IEC:61547	EMI/EMC tests for LED Driver
5.	IEC: 62031/ IS: 16103 (Part- 1 & 2)- 2012	LED Modules for general lighting- Safety Requirements and Performance Requirements.
6.	IS: 16101-2012	General Lighting-LED/LED module – Terms and Definitions
7.	IS: 16102 (Part-I &II)-2012 & IEC/PAS 62612	Self Ballasted LED Lamps for General lighting Services (Safety Requirements & Performance Requirements).
8.	IS: 16104-2012	Electronic Control Gear for LED modules – Performance Requirements

9	LM-80/IS 16105-2012	Approved Method for Measuring Lumen Maintenance of LED Light Source
10	LM-79/IS:16106-2012	Approved Method for Electrical and Photometric Measurements of Solid State LED Lighting Products
11	L-70 (IEC-60081-1997)/IS:16107-Part-2	LED Life Expectancy
12	IEC 62471/EN 62471/IS: 16108-2012	LED Photo Biological Safety requirements
13	IEC: 60571/IS: 9000	Luminaries- Environmental Requirements
14	IEC: 60068-2-38	Environmental Testing/ Humidity Cycle Test
15	IEC 60332-1/IS: 11000	Luminaries-Fire Retardant Test
16	IEC 60081-1997 (Annexure-B,C &D)/ANSI_NEMA_ANSI C78.377-2008	Ra (Colour Rendering Index) Measurement Test
17	IEC 60529	Luminaries- Ingress Protection Test
18	IEC: 60598-2-1/ 60598-1	Fixed General Purpose Luminaries/ Luminaries-General Requirement & Tests
19	IEC: 61000-3-2	EMC (Electro Magnetic Compatibility)- Limits for Harmonic Current Emission
20	IS: 513	Specification of Cold Rolled Low Carbon Steel Sheets and Strips
21	IS: 4905	Method of Random Sampling
22	IS: 10322 (Part-5/Sec.-1)-2012 & Part-1	Requirements of fixed general purpose LED Luminaries
23	IEC: 61373	Electric shock Testing



### 3.0 COMMON TECHNICAL PARAMETERS FOR ALL TYPES OF LED LUMINARIES:

#### 3.1 GENERAL TECHNICAL REQUIREMENTS:-

- 3.1.1 The suitable connector make-Tyco/Wago/Molex/Phoenix shall be provided for LED connection between driver output and LED for high power LED luminaries and for low power LED fittings connection with conformer coating.
- 3.1.2 The material of grommet shall be of Silicon rubber and PG gland of make-Rotex/Intraflux/Roster/Jigo/Phoenix should be provided.
- 3.1.3 LED of make Nichia/Osram/Samsung/Lumiled/Cree/Seoul.
- 3.1.4 MOV (Metal Oxide Varistor) of make-Epcos/Littelfuse/ Samwha/ Bourns/ Vishay to be provided.
- 3.1.5 The illumination of luminaries will be uniform without dark bands or abrupt variations and smoothing to the eyes.
- 3.1.6 The luminaries works on single phase three core wires system (Phase, Neutral & Earth). Length of 50CM 'ISI' marked three core wire shall be provided with LED luminaries & LED tube light fittings.
- 3.1.7 LM 79 Test report in respect of LED luminaries of manufacturer shall be provided along with supply of material.
- 3.1.8 LM 80 Test report of the LED chip of LED manufacturer shall be provided along with supply of material.
- 3.1.9 Power Factor of luminary shall be  $\geq 0.90$  at full load.
- 3.1.10 The nominal voltage of luminary shall be 230 Volt AC  $\pm 5\%$ , 50Hz.
- 3.1.11 The input operating voltage of luminary shall be 140V- 270 Volt AC.
- 3.1.12 The working temperature of luminary shall be  $-10^{\circ}\text{C}$  to  $50^{\circ}\text{C}$ .
- 3.1.13 The insulation resistance between Earth & current carrying part shorted together shall not be less than 100 M ohm at 60% RH with 500 V megger & after HV test.
- 3.1.14 The complete unit cubicle together with its mounting arrangement shall be subjected to shock testing as per latest IEC 61373.
- 3.1.15 The firm shall provide the technical details as per Annexure 'A' attached.
- 3.1.16 The tolerance limit of technical parameters wherever not given shall be applicable as per relevant IS/IEC.

#### 3.2 LED/ LED LIGHT SOURCE

S.N.	Description	Specification
3.2.1	LED make	NICHIA/OSRAM/SAMSUNG/LUMILEDS/CREE/SEOUL
3.2.2	LED type	(a) For Street Lights, High Mast Lights, Low Bay/Medium Bay/High Bay - High Power LED (Ceramic/EMC package) ( $\geq 1$ watt) (b) For LED Bulbs, LED tube light fittings & LED Signages -Low Power LED ( $\leq 1$ watt)
3.2.3	Lumen Output	$\geq 140$ Lumens/ Watt – For High Power LED $\geq 110$ Lumens/ Watt – For Low Power LED

3.2.4	LED Life Expectancy	≥ 50,000 burning hours (To be supported by LM 80 Report & TM21 Report of manufacturer of LED chip)
3.2.5	Beam Angle of LED	120°
3.2.6	Range of Color Temperature	5500-6500K
3.2.7	Color Rendering Index	≥70 – For street lights & high mast fittings ≥80 – For LED Bulbs & LED tube light fittings
3.2.8	LED Wattage	LED should not be operated more than 90% of rated capacity in luminary

### 3.3 LED DRIVER

3.3.1	Driver type	Constant current driver with short circuit & open circuit protection  The LED driver shall be required compulsory registration as per IS: 15885 (Part-2/sec.-13)- 2012 from 'BIS' in favour of tenderer or other authorized manufacturer.
3.3.2	THD (Current)	<10%
3.3.3	Driver Efficiency	Up to 100 watt : >85% (Minimum) Above 100 watt : >90% (Minimum)
3.3.4	Driver components	Industrial Grade or above. Driver current should be less than rated current of component used to meet the rated life.
3.3.5	PCB	PCB shall be FR4 grade minimum 0.8-1.0 mm thick or more to be fixed with high thermal conductive paste or tape on the extruded Aluminum heat sink for Street Light & High Mast Light. For LED Bulbs & LED tube light the same may be provided, if required
3.3.6	Driver Cut in & Cut off Voltage	The driver should be designed at cut in voltage 120 volt AC & cut off voltage at 300 volt AC
3.3.7	Junction Temperature	Switching Device such as Transistors & MOSFETs etc. shall not exceed 85 deg. C (allowing thermal margin of 25 deg. C)



3.3.8	Surge Protection	<p>(1) <u>Internal Voltage Surge Protection</u> : To protect the luminaire from switching surges, the driver of all luminaires should have internal surge protection of MOV of <math>\geq 2.5</math> KV (Metal Oxide Varister) of Make-Epcos/Littelfuse/Samwha/Bourns/Vishay(on board).</p> <p>(2) <u>External (SPD) Surge Protection Device (For Street Light fittings, High Mast Lights, Low Bay/Medium Bay/High Bay)</u> External Surge protection of minimum 10 KV to be separately installed with the each fixture. (As per ANSI C 136.2- 2014) However, MOV make will be same as per Para 3.3.8 (1)</p>
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**4.0 TECHNICAL PARAMETERS FOR LED STREET LIGHT/HIGH MAST LIGHT:**  
General Technical Requirements of Luminaries Para 3.1, Specification of LED & LED Driver Para 3.2 & 3.3 will remain applicable

4.1	System Lumen efficacy of the complete Luminary	$\geq 110$ lm/Watt (+/- 5%)
4.2	Finishing	Anodized/Powder coated
4.3	Lamp Cover	Distortion free, clear, heat resistance Toughened Glass of thickness 4.0mm of material make-Mico/Bricker/Asahi/Saint gobain/Borosil/Laopala
4.4	Secondary optics	Polycarbonate Lens make-Ledlink/Ledil/kathod/Optical/Bicom
4.5	Mounting	Suitable for existing pole/ Universal with dedicated mounting Kits/Bracket Mounting of adjustable type.
4.6	Ingress protection	IP-66
4.7	Construction of Housing	Single Housing, Side entry, High Pressure aluminum die cast/extruded aluminum, grey color corrosion resistant polyester powder coating with separate optical and control gear compartments. The housing shall be high conductivity (LM6/ADC12/LM24) with integral heat sink & heat proof silicon rubber.
4.8	Gasket between housing & cover	Silicon Gasket

4.9	Impact Resistance	IK-07
4.10	Type of Power Supply	SMPS
4.11	Over Voltage Protection	Unit shall withstand 300 Volt AC for One Minute and cut off. It will automatically 'ON' when voltage comes in operating voltage range
4.12	Reverse Polarity	Shall be operated with Reverse Voltage for Three Minutes at Maximum Value of Voltage Range
4.13	High Voltage Test	Shall be Tested at 1500 Volt AC for One Minute between Supply Terminals & Body of the Unit.
4.14	Fixing of Cover Frame	The cover to be fixed to the housing by means of stainless steel screws.

#### 5.0 TECHNICAL PARAMETERS FOR LED TUBE LIGHT (LAMP) & TUBE LIGHT FITTING:

General Technical Requirements of Luminaries Para 3.1, Specification of LED & LED Driver Para 3.2 & 3.3 will remain applicable

##### (a) LED TUBE LIGHT (Lamp)

5.1	Type of Tube Light	T8, Indoor Type
5.2	Length	1200mm/600mm (+/- 2%)
5.3	System Lumen Efficacy	100 lm/W (+/- 5%)
5.4	LED tube light lamp construction	The LED tube light (lamp) shall be with inbuilt control driver and designed in such a way that driver should fitted in the LED tube light (lamp) or LED driver shall be fixed to the lamp in such a way that the driver end cap shall be detachable/replaceable and they provide access to the driver which may be replaced if defective.
5.5	Ingress Protection	IP20

5.6	Lamp Cover/Diffuser	The diffuser of polycarbonate sheet shall be milky to ensure uniformity of light and Polycarbonate material shall be fire retardant conforming to UL94-VO grade made from "Lexan SP 24-492x" (not less than 0.8-1.0mm thick) of GE plastic/Bayer/Mitsubishi/Sabic/ LG/Makvolon/Samsung make.
5.7	Wattage of LED used in Package	≤1 watt
5.8	High Surge Protection	As per Para 3.3.8 item no. (1)
5.9	LED Tube Light Heat Sink	Fabricated Aluminum for heat sink shall be with proper thermal management
5.10	End Cap (Both ends)	Fixed to the tube rod on both ends in such a way that these shall be detachable/replaceable

**(b) BATTEN/ FITTING WITH LED TUBE LIGHT (LAMP)**

5.11	Type of Fitting	Suitable for T8 tube light
5.12	Details of Fixture	Suitable for Single /Double Tube Light (lamp)
5.13	Type of Diffuser	Milky
5.14	Mounting Arrangement	The fixture shall be provided with suitable mounting arrangement for wall mounting as well as for platform mounting on steel structure complete with SS mounting clamps
5.15	Tube Holder	The fixture shall be fitted with Bi-Pin G13 holder suitable for T8 tube light (lamp)
5.16	Batten (Box Type)	The batten should be high pressure Die-Cast/ extruded aluminum with ADC12 alloy or CRCA sheet (0.6mm thick) power coated to white colour
5.17	Tube light (lamp)	Specification of Tube light (lamp) will remain applicable as per para 5.0 (a)



## 6.0 TECHNICAL PARAMETERS FOR LED BULBS:

General Technical Requirements of Luminaries Para 3.1, Specification of LED & LED Driver Para 3.2 & 3.3 will remain applicable

6.1	Type of Bulbs	LED Bulb up to 23 Watt
6.2	Type of Base	B 22
6.3	System Lumen Efficacy of the Bulb	100 lm/W (+/- 5%)
6.4	High Surge Protection	As per Para 3.3.8 (1)
6.5	Beam Angle of Luminary	270°
6.6	Construction of Housing	Injection molded plastic housing with Aluminum insert minimum thickness 1.0 mm
6.7	Lamp Cover/Diffuser	Polycarbonate milky diffuser shall be fire retardant conforming to UL94-VO grade made from "Lexan SP 24-492x" (not less than 0.8-1.0mm thick) of GE plastic/Sabic/LG/Makvolon/Bayer/Mitsubishi/Covestro make.
6.8	LED Life	≥25,000 burning hours
6.9	Ingress Protection	IP20
6.10	Wattage of LED used in Package	≤1 watt

## 7.0 TECHNICAL PARAMETERS FOR LED SIGNAGE BOARDS:

General Technical Requirements of Luminaries Para 3.1, Specification of LED & LED Driver Para 3.2 & 3.3 will remain applicable

7.1	Type of Signage	(a) Backlit Signage (b) 3D Character Backlit Signage
7.2	Backlit signage for utility services (a)	SMD (Surface Mounted Device) LED Glow Sign Board etc.
7.3	3D Character Backlit Signage (b)	SMD LED Glow Sign Railway Station Name Boards etc.

7.4	Color Scheme (a)	Sizes may be referred for the purpose of uniformity and standardization over Northern Railway for Part-I as per Booklet "Signage for Rail users" by Chief Traffic Manager, Delhi, Northern Railway for guidance only. However boards shall be sleek type having thickness equal to or less than 75 mm or 3 inch
7.5	Color Scheme (b)	As per CTM booklet "Signage for Rail uses" for Part-II for guidance only and Size may be decided by Consignee/ Purchaser as per site requirement for station name boards etc. However boards shall be sleek type having thickness equal to or less than 75 mm or 3 inch.
7.6	Luminous Intensity	<b>Backlit Signage:</b> Minimum 990 mcd (milli candela) <b>3D Character Backlit Signage:</b> Minimum 3000 mcd (milli candela)
7.7	Signage Board	<b>Backlit Signage:</b> Sleek type energy efficient SMD LED based glow sign boards made of MS steel square tube of size 25mm x 25mm x14 gauge for frame and with 24 mm Aluminum extrusion male- female clip on fixture to catch and release the sheet <b>3D Character Backlit Signage:</b> The background of board shall be made of 3mm thick ACP (Aluminum composite panel) of prescribed color by consignee. The enclosure shall be fabricated from MS steel square tube of size 25 x 25 mm of 14 gauge.
7.8	Language	All matter shall be written in Hindi, English or other Regional Language in 3 D shape as per purchaser consignee requirement.

#### 8.0 GUARANTEE:

The complete luminaire/LED Bulb shall have replacement guarantee for satisfactory performance and manufacturing defects for a period of 60 months from the date of commissioning or 72 months from the date of supply whichever is earlier.

#### 9.0 IDENTIFICATION:

The firm shall embossed/engraved firm name, month & year of manufacture, guarantee period, serial number, rated input voltage & wattage inside & outside the fittings and also screen print on LED Panel and LED Driver, the firm name & year of manufacturing.

## 10.0 INSPECTION:

The inspection shall be done by M/s RITES at manufacturers works. In case of works tender, respective Branch Officer will decide/deviate for consignee inspection with proper justification. The manufacturer should have full facility for carrying out acceptance tests as per IS/IEC specification shall be made available by the manufacturer to inspecting authority at manufacturers cost. The inspection of material shall be carried out as per Railway Board letter no. 2000/RS(G)/379/2 dated 10.09.2013 for minimum value of Stores or latest instruction issued from Railway Board.

## 11.0 TESTS:

The LED, LED driver and luminaries shall be tested with the applicable IS/IEC reference standards given in Para 2.0 of this specification.

### 11.1 TYPES OF TESTS:

#### 11.1.1 Type Tests:

Inspecting Agency M/s RITES will verify the documents available with the firm for type tests mentioned in Para 11.1.4 carried out from Govt. Laboratory/National/International Accredited Laboratory to ensure the confirmation with the requirement of specification for the luminaries. For signages, Type Tests mentioned in Para 11.1.4 are not applicable. However, for signages following checks are applicable to Para 7.4, 7.5, 7.6 & 7.7.

#### 11.1.2 Acceptance Tests:

These tests shall be carried out by an inspecting Agency at the manufacturer works on sample taken from a lot for the purpose of acceptance of material.

#### 11.1.3 Routine Tests:

These tests shall be performed by the manufacturer on each item and the records shall be shown to the inspecting Agency during the inspection of lot offered for acceptance tests.

#### 11.1.4 TESTS SCHEME:

SN	Description of test	Reference Para of the specification	Type Test	Acceptance Test	Routine Test
1.	Visual and Dimension Check	As per requirements	-	Y	Y
2.	Checking of documents i.e. Bills/Invoice for purchase of LED	Para 3.2.1	-	Y	Y



3.	Checking of documents of purchase of Connector, Grommet, PG gland, LED Driver & LED Driver Components, MOV	Para 3.1.1 for Connector Para 3.1.2 for Grommet & PG Gland Para 3.3.1 & 3.3.4 for LED Driver & LED Driver Components Para 3.1.4 for MOV	-	Y	Y
4.	Checking of documents of Lamp Cover, Secondary Optics, Diffuser.	Para 4.3 for Lamp Cover Para 4.4 for Secondary Optics Para 5.6 & 6.7 for Diffusers	-	Y	Y
5.	Operating Voltage	Para 3.1.10	-	Y	Y
6.	Input Voltage Range of Luminary	Para 3.1.11	-	Y	-
7.	Over Voltage Protection	Para 4.11	Y	Y	-
8.	HV Test	Para 4.13	-	Y	-
9.	Power Factor	Para 3.1.9 As per IS: 18102 (Part 2)- 2012 Para 15	Y	Y	-
10.	Harmonics (THD)	Para 3.3.2 As per IS: 18102 (Part 2)- 2012 Para 15	Y	-	-
11.	Type of power Supply (SMPS)	Para 4.10	-	Y	Y
12.	High Power LED $\geq 1$ watt	Para 3.2.2 (a)	Y*	-	Y
13.	Low Power LED <1watt	Para 3.2.2 (b), Para 5.7 & Para 6.10	Y*	-	Y
14.	Beam Angle - LED	Para 3.2.5 (Covered under LM80)	Y*	-	-
15.	LED Life Test (L-70 & TM-21)	Para 3.2.4 & Para 6.8	Y*	-	-
16.	All Tests as per LM-79	Para 3.1.7	Y	-	-
17.	All Tests as per LM-80	Para 3.1.8	Y*	-	-
18.	LED Driver Cut in & Cut off Voltage	Para 3.3.6	Y	-	-
19.	LED Driver Efficiency	Para 3.3.3	Y	-	-
20.	LED Driver Certificate from BIS	Para 3.3.1	Y*	-	-

21.	High Surge Protection (Street Lights)	Para 3.3.8 (1 & 2)	Y	-	-
22.	Surge Protection (LED Bulbs & LED Tube Lights)	Para 3.3.8 (1), Para 6.4 and Para 5.8	Y	-	-
23.	System Lumen Efficacy	Para 4.1, Para 5.3 & Para 6.3	Y	Y	-
24.	3 Core wire of 50 CM length	Para 3.1.6 (IS: 694)	-	Y	Y
25.	Beam Angle of Luminaries	Para 6.5	Y	-	-
26.	Checking of Tube Light Length & Batten	Para 5.2 & Para 5.17	-	Y	-
27.	Type of Base for LED Bulb	Para 6.2 (As per IS: 16102 (Part 1-2012) Para 6.1)	-	Y	-
28.	Finishing of Luminaries	Para 4.2	-	Y	Y
29.	Mounting of Luminary	Para 4.5 & Para 4.14	Y	Y	-
30.	Construction of Housing of Luminary	Para 4.7 & Para 5.6	Y	Y	-
31.	Gasket of Luminary	Para 4.8	-	Y	Y
32.	Impact Resistance of Luminary	Para 4.9	Y	-	-
33.	Checking of PCB	Para 3.3.5	Y	-	-
34.	Lux Measurement	IS: 16106- 2012, Para 11.0	-	Y	Y
35.	Fire Retardant Test	UL94-VO	Y	-	-
36.	Reverse Polarity	Para 4.12	-	Y	Y
37.	Protection Against Electric Shock	Para 3.1.14 IEC: 61373	-	Y	Y
38.	Junction Temperature	Para 3.3.7	Y	-	-
39.	Working Temperature	Para 3.1.12 IS: 16105- 2012, Para 4	Y	-	-
40.	Wattage Measurement Test	Para 3.2.8 & Para 6.1	-	Y	-
41.	Insulation Resistance Test	Para 3.1.13	-	Y	-



42.	Ra (Color Rendering Index ) measurement test	Para 3.2.7 (cover under LM80)	Y*	-	-
43.	CCT (Correlated Colour Temperature)	Para 3.2.6 (Covered under LM80)	Y*	-	-
44.	Test for IP Protection	Para 4.6, Para 5.5 & Para 6.9	Y	-	-
45.	Identification	Para 9.0	-	Y	Y
46.	Luminous Intensity Test For Signages	Para 7.6	-	Y	-
47.	Signages Board	Para 7.4, 7.5 & 7.7	-	Y	-

Y - Lab Test Report Documents

Y\*- Document to be submitted from OEM

# ANNEXURE 'A'

SN	Description Para as Per specification	Technical Requirement as per specification	Technical Parameter offered by the Firm
<b>Common Technical Parameters For All Types of LED Luminaries</b>			
1	LED make	NICHIA/OSRAM/SAMSUNG/LUMILEDS/CREE/SEOUL	
2	Lumen Output	≥140 Lumens/ Watt – For High Power LED ≥110 Lumens/ Watt – For Low Power LED	
3	Range of Color Temperature	5500-6500K	
4	Color Rendering Index	≥70 – For street lights & high mast fittings ≥80 – For LED Bulbs & LED tube light fittings	
5	Driver type	Constant current driver with short circuit & open circuit protection The LED driver shall be required compulsory registration as per IS 15885 (Part-2/sec-13)-2012	
6	THD (Current)	<10%	
7	Working Temperature	-10°C to 50°C	
<b>(A) For Street Light/High Mast Light</b>			
(i)	System Lumen efficacy of the complete Luminary	≥110 lm/Watt (+/- 5%)	
(ii)	Ingress protection	IP-66	
(iii)	Surge Protection	1. Internal Voltage Surge Protection: MOV of ≥2.5 KV (Metal Oxide Varistor) of Make-Epcos/Littelfuse/Samwha/ Bourns/ Vishay (on board) 2. External (SPD) Surge Protection Device (For Street Light fittings, High Mast Lights, Low Bay/Medium Bay/High Bay): External Surge protection of minimum 10 KV to be separately installed with the each fixture.	
(iv)	Over Voltage Protection	Unit shall withstand 300 Volt AC for One Minute and cut off. It will automatically 'ON' when voltage comes in operating voltage range	
(v)	Wattage of LED used	≥1 watt	
<b>(B) For Tube Light Fitting/Lamp</b>			
(i)	System Lumen efficacy of the complete Luminary	≥100 lm/Watt (+/- 5%)	
(ii)	Ingress protection	IP-20	
(iii)	Surge Protection	MOV of ≥2.5 KV (Metal Oxide Varistor) of Make-Epcos/Littelfuse/ Samwha/Bourns/Vishay (on board)	

(iv)	Wattage of LED used	≤1 watt	
(iv)	LED tube light lamp construction	The LED tube light (lamp) shall be with inbuilt control driver and designed in such a way that driver should fitted in the LED tube light (lamp) or LED driver shall be fixed to the lamp in such a way that the driver and cap shall be detachable/replaceable and they provide access to the driver which may be replaced, if defective	
<b>(C) For LED Bulb (Lamp)</b>			
(ii)	Wattage of Bulb	Wattage as per description	
(ii)	Type of Base	B 22	
(iii)	System Lumen Efficacy of the Bulb	100 lm/W (+/- 5%)	
(iv)	High Surge Protection	MOV of ≥2.5KV (Metal Oxide Varistor) of Make-Epcos/Littelfuse/Sanyo/Bourns/Vishay (on board)	
(v)	Beam Angle of Luminary	270°	
(v)	Ingress protection	IP-20	
(vi)	Wattage of LED used	≤1 watt	

# TECHNICAL SPECIFICATION FOR LED BASED LUMINARIES

Revision, of the above specification on 3 pages has been issued and shall be followed as given below

S No	Clause No.	Subject	Details of items in existing specification	Revised with Revision: '4'																																												
1	12.0	Implementation of the public procurement Order-2017	Not included, added as 12.0	To implement the public procurement Order-2017 vide Railway Board letter no. 2015/RS(G)/779/5 dated 16.03.2018 preference to 'Make in India'																																												
2	13.0	Technical Parameters for Pit light	Not included, added as 13.0	<p>The technical parameters are as under</p> <table border="1"> <thead> <tr> <th>S N</th><th>Description</th><th>Specification for 18W</th><th>Specification for 22W (Bulkhead)</th></tr> </thead> <tbody> <tr> <td>1</td><td>Rated Voltage</td><td>110V AC</td><td>110V AC</td></tr> <tr> <td>2</td><td>Front Cover</td><td>Toughened glass diffuser as per Para 4.3 of the specification</td><td>Toughened glass diffuser as per Para 4.3 of the specification</td></tr> <tr> <td>3</td><td>LED Test</td><td>LM79 &amp; LM80 certified LED as per Para 3.1.7 &amp; 3.1.8</td><td>LM79 &amp; LM80 certified LED as per Para 3.1.7 &amp; 3.1.8</td></tr> <tr> <td>4</td><td>Control Gear/LED Driver</td><td>External constant current driver as per Para 3.3 of the specification (max placement distance 1 mtr)</td><td>External constant current driver as per Para 3.3 of the specification</td></tr> <tr> <td>5</td><td>Internal Wiring</td><td>Teflon insulated, Copper conductor</td><td>Teflon insulated, Copper conductor</td></tr> <tr> <td>6</td><td>Hardware</td><td>MS zinc plated &amp; passivated</td><td>MS zinc plated &amp; passivated</td></tr> <tr> <td>7</td><td>Ingress Protection</td><td>IP66</td><td>IP66</td></tr> <tr> <td>8</td><td>Impact Test</td><td>IK10</td><td>IK10</td></tr> <tr> <td>9</td><td>Lumen maintenance</td><td>50,000hrs. &amp; L70</td><td>50,000hrs. &amp; L70</td></tr> <tr> <td>10</td><td>Operating Temperature</td><td>-10°C to 50°C</td><td>-10°C to 50°C</td></tr> </tbody> </table>	S N	Description	Specification for 18W	Specification for 22W (Bulkhead)	1	Rated Voltage	110V AC	110V AC	2	Front Cover	Toughened glass diffuser as per Para 4.3 of the specification	Toughened glass diffuser as per Para 4.3 of the specification	3	LED Test	LM79 & LM80 certified LED as per Para 3.1.7 & 3.1.8	LM79 & LM80 certified LED as per Para 3.1.7 & 3.1.8	4	Control Gear/LED Driver	External constant current driver as per Para 3.3 of the specification (max placement distance 1 mtr)	External constant current driver as per Para 3.3 of the specification	5	Internal Wiring	Teflon insulated, Copper conductor	Teflon insulated, Copper conductor	6	Hardware	MS zinc plated & passivated	MS zinc plated & passivated	7	Ingress Protection	IP66	IP66	8	Impact Test	IK10	IK10	9	Lumen maintenance	50,000hrs. & L70	50,000hrs. & L70	10	Operating Temperature	-10°C to 50°C	-10°C to 50°C
S N	Description	Specification for 18W	Specification for 22W (Bulkhead)																																													
1	Rated Voltage	110V AC	110V AC																																													
2	Front Cover	Toughened glass diffuser as per Para 4.3 of the specification	Toughened glass diffuser as per Para 4.3 of the specification																																													
3	LED Test	LM79 & LM80 certified LED as per Para 3.1.7 & 3.1.8	LM79 & LM80 certified LED as per Para 3.1.7 & 3.1.8																																													
4	Control Gear/LED Driver	External constant current driver as per Para 3.3 of the specification (max placement distance 1 mtr)	External constant current driver as per Para 3.3 of the specification																																													
5	Internal Wiring	Teflon insulated, Copper conductor	Teflon insulated, Copper conductor																																													
6	Hardware	MS zinc plated & passivated	MS zinc plated & passivated																																													
7	Ingress Protection	IP66	IP66																																													
8	Impact Test	IK10	IK10																																													
9	Lumen maintenance	50,000hrs. & L70	50,000hrs. & L70																																													
10	Operating Temperature	-10°C to 50°C	-10°C to 50°C																																													



				11	Main Housing & Frame	Aluminum casting with powder coating as per Para 4.7 of the specification	Aluminum casting with powder coating as per Para 4.7 of the specification
				12	Wattage	18 watt +/- 10%	22 watt +/- 10%
				13	Power factor	>0.90 as per Para 3.1.9 of the specification	>0.90 as per Para 3.1.9 of the specification
				14	Lumen Output	2340 lm	1760 lm (If bulkhead type)
				15	CCT	5500K-6500K	5500K-6500K
				16	CRI	>70	>70
				17	Protection	System covers the open & short circuit protection, reverse polarity protection & surge protection as per Para 3.3.8 of the specification	System covers the open & short circuit protection, reverse polarity protection & surge protection as per Para 3.3.8 of the specification
				18	Other applicable standard	IS-10322 (Pt.-5/sec.-1)-1985/IEC 60598 or latest	IS-10322 (Pt.-5/sec.-1)-1985/IEC 60598 or latest
3.	7.0	Technical details for Signages for A1 & A category Railway Station	Not included and added as 7.9	Type- A, B, C, D & other accessories as per following details:-			

**Para 7.9, Type- 'A'**

Entry gate & Exit gate, Lane Marking Gantry, Parking entry, Parking Exit, Freight entry, Freight Exit, Way Finding Sign External (6panelsx6 directories) Panels, Way Finding Sign External, Building Titles, On Staircase east gate sign, double sided sign shall be of size: 30"x 5', 60"x 2.5', 20"x5', 72"x10', 18"x2', 16"x1.5' etc. Dimension may vary as per site requirement conforming to following technical details:-

Made of Laser cut aluminum panel of 4mm thick aluminum sheet with painted face having 3mm letter fascia to be laser cut out from opal perplex sheet of 4mm thickness to use as per signage size: 20 w, 40 w, 60 w, 100 w, 150w constant current mode power supply, universal AC input/Full range.

(a) Signage Support Gantry Structure: Made up of 50mmX50mmX2mm pipe sections for fixing sign board both front and back.

(b) Anchor Plates: To use plates from existing gantry structure (RCC) Base (M40/50 concrete) of size 900x1800x1800mm each pole.

#### **Type- 'B'**

Way finding signage external shall be of Size 30"x8" (4x1"panels, 1x1"panels, 2x1" panels), way finding Signage Internal (4x1) Panels shall be of Size 30"x8", dimension may vary as per site requirement conforming to following specifications.

Signage Panel Sides front and back illuminated, from aluminum sheet with laser cut graphics, painted to required colour to use as per signage size: 20 w, 40 w, 60 w, 100 w, 150w, constant current mode power supply universal AC input/Full range.

#### **Type- 'C'**

Establishment Titles, Amenities Signs, Platform Number, Gate Entry/Exit shall be of Size 3'x1' 2'x1.5' 5'x1.5' etc. dimension may vary as per site requirement conforming to following specifications.

Signage Panel, sides - front and back illuminated, from aluminum sheet with laser cut graphics, painted to required colour to use as per sign size: 20 w, 40 w, 60 w, 100 w, 150w, constant current mode power supply universal AC input/Full range.

#### **Type- 'D'**

Layouts sign shall be of size 8'x4' Feet dimension may vary as per site requirement conforming to following specification.

Signage Panel, Sides - front and back illuminated, from aluminum sheet with laser cut graphics, painted to required colour to use as per signage size: 20 w, 40 w, 60 w, 100 w, 150w, constant current mode power supply universal AC input/Full range.

### **7.10 OTHER ACCESSORIES**

- (i) **Fixing:** To wall with anchor bolts of 50mmX6mm Size, fixed with HILTI HS V M-12 expansion fastener.
  - (ii) **Fixing Hanging Type:** Telescopic pipes of size - 25mmX25mmX10'4' fixed to sign with size bolt of 25mmX6mm size and SS 304 plate of size 75mmX150mmX 3mm with a stiffening bar support and fixed to roof with fasteners of size - 75mmX8mm through a 150mmX150mm, SS 304 plate of 4mm thickness.
  - (iii) **Fixing Projecting Type:** Two pipes of thickness 50mmX50mmX300mm with SS 304 plate of size - 4"x8"x3mm for anchoring to wall with fasteners of size - 75mmX8mm.
  - (iv) **Support Structure:** Support structure of stainless steel grade-304, two square pipe of size 75mmX75mmX1mm of length 10' fixed with use of SS 304 anchor plates of size - 200mmX2mmX4mm fixed to RCC base with anchor fasteners, RCC Base size - 24"x18"x18".
-

- (v) Pole Mounting, Type-I: Single MS pole mounting with 200mm dia x 5mm x 6m with MS plate base of size 720mmx720mmx20mm with 3mmx25mm dia anchor rods (8 each plate) grouted in ground with 1:1.5m:1.5m RCC - M40/50 Conforming to IS: 1239-2004 or latest HPW pipe of class A.
- (vi) Pole Mounting, Type-II: Single MS pole mounting with 300mm/dia x 5mmx 6m with MS plate base of size 920mmx920mmx20mm with 3mmx25mm dia anchor rods (8 each plate) grouted in ground with 1.5m:1.5m:2m RCC-M40/50 Conforming to IS: 1239-2004 or latest HPW pipe of class A.
- (vii) Fixtures: Signage structure made of 40mm round pipes in scissor pattern Conforming to IS: 1239-2004 HPW pipe of class A.

**Note:-** (i) The RSCS document regarding 'Functional Requirement Specification' for LED based luminaires for P&T lighting shall be followed.

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CEE Specification No.: CEE/LED Tube light 18-20 watt/16/ Oct. 2016

**DESCRIPTION:** "LED Tube light 18-20W with batten complete to replace standard T8 tube 36/40W, T5 PTLs as per attached specification."

### SPECIFICATIONS

[illegible]



Tele/Fax : 0522-2455109  
Rly. Phone : 032-42559  
e-mail : diremrdsq@gmail.com



भारत सरकार-रेल मंत्रालय  
अनुसंधान अधिकांश और मानक संगठन  
लखनऊ- 226011  
Government of India - Ministry of Railways  
Research, Design & Standards Organisation,  
Lucknow - 226011

No. RDSO-EEMOLKO(GUID)/1/2020

Date: 27.01.2026

To,

**PCEE all 7Rs : As per enclosed mailing list.**

**Sub:**Guidelines for inverter tube light/bulb or emergency light at platform/passenger movement area to provide minimum uninterrupted illumination

**Ref:** (i) CESE/ER letter no. EL/203/Power Maint dated 19.12.2025.  
(ii) Rly Bd letter no. 2025/EEM/150/9 dated 21.01.2026.

It is often observed that whenever there is a power outage due to any reason, the station is plunged into complete darkness during night time. This situation may cause serious threat to passenger safety. Use of Inverter type LED tube light batten/Lamp based lighting fixtures with internal battery backup (3 to 4 hours), at platform/passenger movement area as alternate arrangement for emergency light may solve this problem of complete darkness in case of power failures. Since, these inverter/emergency fittings are of retrofit type, so there is no need of separate wiring and they can be directly used in place of existing fittings.

Based on the necessity of these lights at Railway stations a pilot project was assigned to Eastern Railway to check the feasibility and requirements of inverter type LED batten as alternate arrangements for emergency light. Eastern Railway has installed 10 nos. of inverter type luminaire at platform number 5 of BANDEL Railway station on trial basis. Eastern Railway has maintained 5 meter distance between two Inverter type LED battens for trial purpose. The trial was successful as during availability of normal power supply, the observed illumination level was around 90 lux, while during power outage, it was 18 lux (sufficient for emergency lighting). A brief report along with the estimated cost for a 600 meter long platform has also been included in the report.

After review of the report submitted by ER, it is clear that use of inverter lamps/battens as emergency lighting is a solution to avoid complete darkness at platform during power outages. Therefore, the general arrangement and technical parameters of the Inverter tube lights, which may be followed to maintain the emergency illumination even in case of power outage, are as below:

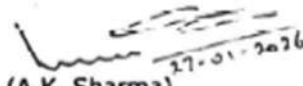
**General arrangements of emergency inverter tube light at platform:**

- i. After every two continuous normal fitting third fitting should be of inverter/emergency type. The optimum distance between two inverter/emergency type fittings should be 5-10 meter.
- ii. This arrangement may be modified suitably, if required, to maintain minimum illumination level of 15-20 lux in case of power cut. Also, there should not be any dark patches on the platform (uniform illumination to be maintained).
- iii. For non-covered area of platform, at alternate location existing fittings may be replaced by inverter/emergency type fittings or in case of multi fittings on same pole half of the fittings may be replaced by inverter type fittings. The illumination level of 15-20 lux uniformly should be maintained. The outdoor fitting should be having ingress protection rating of IP-66 or above.

**The technical parameter of the inverter/emergency fittings are as under:**

- i. LED of the fitting should be LM-79 and LM-80 certified.
- ii. The capacity of the battery should meet at least 4 hrs. backup.
- iii. Minimum 25% backup lumen to be maintained when the luminaire working on its inbuilt battery (As compare to lumen output when working on normal power supply).
- iv. Minimum life of the fitting should be 13,000 burning Hrs and its battery should have minimum 500 charging-discharging life cycle.
- v. Fitting must have auto cut facility after battery fully charged.
- vi. The fitting should have voltage surge protection up to 4kV.
- vii. Capable to switch to battery mode automatically in case of power failure.
- viii. Operating voltage of the fitting should be between 140 V to 250 V.
- ix. Type of battery inside fitting is Li-Ion.
- x. Fitting lumen efficacy should be 100 lumen/watt or above.
- xi. Fitting driver efficiency should be more than 85%.

Zonal Railways may use above these guidelines for inverter tube light/bulb or emergency light at platform/passenger movement area to ensure minimum uninterrupted illumination.

  
(A.K. Sharma)  
Executive Director/PS/RDSO

Copy to: Secretary (Electrical), Railway Board, Rail Bhavan, New Delhi-100001  
(Kind attn.: Nisha Manohar Patil, DEE/PS): for kind information.

**NORTH EASTERN RAILWAY**  
**ELECTRICAL DEPARTMENT**

**SPECIFICATION NO. CEE / SUBMERSIBLE PUMP/12 (Rev. 1) January -2014**

**1.0 SCOPE :-**

This specification covers design, manufacture and supply of **Energy efficient** electrically driven direct -coupled submersible pump set for clear cold fresh water as per specified operating parameters as well as site conditions.

**2.0 REQUIREMENT :-**

The submersible pumping set covered under this specification shall be designed and manufactured such that to meet the following parameters

- a) Discharge ----- LPM at a total head of ----- meters
- b) No. of bends -----
- c) Type of well -----
- d) Open well diameter -----
- e) Tube-well inside diameter -----
- f) Static water level below the ground level -----
- g) Draw down level ----- At rated discharge
- h) Rising Main -----

**NOTE:-** (The above parameters are to be furnished by the indenter)

- (i) Pump to be 5 star rated as per BEE's rating scheme.

**3.0 GOVERNING STANDARDS/ SPECIFICATIONS :-**

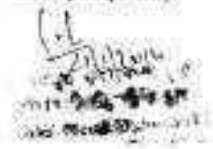
The following Indian Standards ( latest version) shall be applicable to :-

- a) IS: 8034 - 2002 Submersible pump sets for clear cold and fresh water.
- b) IS: 9283 - 1995 3 Phase induction motor for Submersible pumps
- c) IS: 1570(Pt-I to Pt-V) Schedule for wrought iron steel for general engineering purpose.
- d) IS: 5312(Pt-I) - 1984 Swing check type reflux (Non-return valves for water purposes)
- e) IS: 1239(Pt-I/90-Pt-II/92) Column pipe class "C" Heavy gauge.
- f) IS: 3624 - 1987 Pressure gauge.
- g) IS: 13010 - 1990 Energy meter.
- h) IS: 13947(Pt-IV) - 1993 DOL/Star Delta starter.

The other items not covered vide above mentioned IS shall conform to their respective IS- code

**4.0 PUMP**

- 4.1 The pump shall have required No. of stages to give the above out put at desired head. However, pump having lesser No. of stages shall be preferred. The pump shall be non-overloading type and shall be provided with a motor of suitable capacity for this purpose. The pump shall also be complete with non return valve (fitted just after the last stage of the pump); flanged type rising main in multiples of standard length of 3 meters conforming to table 3 of IS: 1239(Pt-I) of 1990, which shall not be less than discharge dia. of the pump.
- 4.2 Pump shall generally conform to IS: 8034 - 1989.
- 4.3 Preferred makes:- BEE 5 Star rated KSB, Kirtoskar and Shakti make pumps only.

  
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#### 5.0 THRUST BEARING:-

These shall be water lubricated and shall be able to tolerate all loads under unfavourable running condition. It should have self-lubricating material. (Thrust pads/Carbon thrust bearing are not accepted)

- 5.1 The pump and motors shall be directly coupled through mesh type rigid sleeve coupling of stainless steel, non-slip type with matching grooves, Collar key way arrangement. The key shall be of stainless steel.

- 5.2 Non-return valve strainer shall be integrated with the pump. Suitable adapter to couple the pump with rising main shall also be supplied.

- 5.3 Suitable type bolt arrangement shall be provided in place of threaded joint such as in motor casing, bearing housing etc. In bowl assembly, coupling through bolt shall be preferred in place of threaded arrangement. Nuts, bolts and washers shall be made of stainless steel.

#### 5.4 SIZE OF CABLES USED FOR THE PUMP SET:-

It should be selected that voltage drop at motor terminals does not exceed 3% of the supply voltage on load. The cable shall be PVC insulated flat with copper conductor conforming to IS:694/90 and in one piece of length of 10 meter more than the length of rising main i.e. if the rising main is 15 meter in length then the cable length shall be 15+10=25 Mtrs. If motor supplied along with the pump is above 5 HP then twin 3 core flat cable of suitable size shall be supplied for star/delta operation of the motor.

#### 6.0 MOTOR :-

Normal voltage supply shall be  $415 \pm 6\%$ , 3 phase, 50Hz, AC power supply, 3000 RPM (Syn.) and for continuous rating drip proof conforming to IS: 9283/1995. It shall be capable of working at 380 V without getting overheated.

- 6.1 The motor shall be totally enclosed copper wound squirrel cage, induction type water cooled and water lubricated (Allowance of about 10% of KW rating at pump shaft at its rated output shall be made while deciding the KW rating of motor). The motor shall be guided by flange type bearings of special leaded bronze metal having high water resistance.

- 6.2 Motor shall be equipped with motor sleeves in the bearings portion and dynamically balanced.

- 6.3 The motor shall be designed such that the stator stampings are properly locked in order to facilitate rewinding of motor for a number of times without any disturbance to the stampings/slots. It is, therefore, needed on the part of the tenderer to submit full details of locking arrangement of stator stampings along with the offers failing which the offers are liable to be rejected. In this respect fabricated stator type motor shall be preferred.

- 6.4 Adequate heavy duty sealing arrangement and also a sand guard shall be provided in the motor to prevent tube well impurities from entering in the motor bearings. There shall be loose fixing ring which is held in position for fixing ring which is held in position for fixing of lower and upper bearing. Fixing should be done with rigid hook bolts to ensure removal of upper and lower bearings.

*[Handwritten signature and stamp]*  
Mr. P. S. Datta  
11.11.2011

## 7.0 EFFICIENCY :-

7.1 The operating point of the pump shall be located near the peak efficiency. The tenderer shall enclose the under mentioned performance curves of the pump (at 380V) quoted by them along with their offer :-

- Head Vs output
- Output Vs overall efficiency
- Discharge Vs input characteristic

7.2 In addition to above, the tenderer shall furnish the following performance data as well.

Performance Curve at 380V

Performance at different heads	Discharge LPM	KW required	Efficiency			Overall
			Bowl	Pump	Motor	
(a) At specified head						
(b) 110% of specified head						
(c) 75% of specified head						

These above datas are required in order to evaluate the cost benefit of using the pump set on a long term basis, in respect of initial cost of the equipment offered.

7.3 The tenderer shall furnish calculation sheet in respect of selection of motor rating. The offer, if the tenderer not accompanied by above sheet shall be liable to be rejected.

7.4 The tenderer should also indicate BHP/KW required at the duty point of the pump.

7.5 The rating of the pump shall be in liter per minutes at a specified head. The pump shall be designed for continuous in tropical condition.

7.6 The tenderer shall submit current and valid 5 star rating certificate issued by Bureau of Energy Efficiency specifically for the offered Make/ Model pump.

## 8.0 ACCESSORIES FOR EACH SET :-

- Sluice valve flanged type complete with hand wheel and conforming to IS 780/1960 - 01 No.
- Reflux valve flanged type conforming to IS 5312/1969 - 01 No.
- Pressure gauge complete with cock etc 152.4mm(6")dia. - 01 No.
- Air pipe line of length rising main +5 meter complete with depth gauge, air pump and other fittings - 01 set.
- Clips for holding cable, air pipe line and wire rope - 02 Nos/Mtr run of rising main
- Supporting clamps with nut & bolts for holding rising mains - 02 pair
- Suitable size of steel wire rope of length rising mains +5 mtrs shall also be supplied with each pump set to arrest the pump from falling in the well.
- Thrust bearing for pump motor - 01 No.
- Steel bush for rotor - 01 set
- Gan metal bush for top housing of motor - 01 set
- Gan metal bush for bottom housing of motor - 01 set

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 27/12/2014  
 [Stamp: ...]  
 [Signature]

## **9.0 SUBMERSIBLE STARTER CONTROL PANEL:-**

- 9.1 Wall mounting type dust and vermin proof control panel shall be made of CRCA sheet of not less than 3 mm thick in cubical form with hinged front door. It shall be duly painted with anti-corrosive super enameled paint. The panel shall be duly and neatly wired with copper conductor cable inter-connecting following electrical equipments inside the panel:-

### **9.1.1 For motor up to SHP rating.**

Direct on line starter, air break contactor type in open execution with thermal over load relay manual resetting type. It shall be suitable for starting/ stopping the motor and protects the motor against overload, underload (Dry-run) and single phasing condition.

### **9.1.2 For motor above SHP rating.**

Automatic star delta starter having air break contactor of adequate rating with thermal over load relay and electronic timer to control change over from star to delta and start/ stop push button mounted on control panel door. It shall have the provision of:-

- MCB/ SFU of adequate capacity and shall be of L&T, Havell, BCH, CGL or Siemens make
- Electronic motor protection relay having multiple protection functions as over current, under current (Dry-run), phase loss, phase reversal, phase unbalance, locked rotor short circuit and earth fault,
- Surge protector,
- Inbuilt ammeter / 3-phase current display with three integral current transformer. The ammeter shall be of reputed make such as Automatic electric, Meco, Rishabh, Essen Denki, Havells, HPL etc.
- Digital voltmeter 500 volts and selector switch to view the voltage in all the 3-phases. The voltmeter shall be of reputed make such as Automatic electric, Meco, Rishabh, Essen Denki, Havells, HPL etc.
- Trip cause display for trouble shooting.
- Trip cause memory. Last 3-trip cause stored regardless of power failure.
- Manual (Instantaneous) electronic (Remote) reset and.
- Real time based pump ON-OFF timer for multiple programmable for a day and for a week as per requirement.
- Manual trip facility to check the trip operation and also on-site conversion between automatic to manual.

**Make of the Starter control panel-** Siemens, BCH, L&T, Havell's, HPL & "Suraksha - Kvaach" of M/S Shree Industrial Agency, Kolkata

- 9.3 Two nos. earthing terminals shall also be provided on the control panel.
- 9.4 Six or three terminal boards (for star delta or DOL) of suitable current rating and 4 terminals boards for incoming supply shall also provided for connecting motor cables and incoming supply. The terminals shall be suitable for terminating through cable terminal lugs and operating 100 Amp. Other control gears connection to the starters inside the control panel shall be taken from these terminal boards and all wiring inside control panel shall be with copper conductor PVC cables of adequate rating.
- 9.5 All power and control cable terminals shall be provided with wire markers duly numbered and control & power circuit diagram shall be pasted inside the control panel.
- 9.6 A three phase Electronic type energy meter of suitable rating with current transformer shall be provided in control panel to measure the consumption of the pump.  
**Energy meter Make - GEC, Havell, Jaipur Metal works, HPL.**

21/12/2014  
[Signature]  
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**10.0 CAPACITOR BANK (Optional) :-**

3 phase 415 volt capacitor bank for improvement of power factor of suitable KVAR capacity matching with motor KVA should also be supplied along with the pump, bringing up PF to 0.95 (Lagging) at the normal working condition of the pump.

**11.0 PRICE :-**

The price shall be firm and shall include delivery F.O.R. destination basis.

**12.0 MANUFACTURER'S TEST CERTIFICATE :-**

The tenderer shall submit manufacturer's test certificate along with equipments for (a) Pump (b) Motor (c) Switchgear. These should also be furnished to inspecting authority during inspection for verification purposes.

13.0 The tenderer shall fill up the Appendix 'A' point wise for the evaluation of their offer.

14.0 The offer of manufacturer or their authorised dealers will be considered. Any offer other than the above mentioned will be rejected.

15.0 The tenderer shall submit current and valid authorisation certificate of their principle along with offer. Tenders not accompanied with the requisite documents shall liable to be rejected.

16.0 Tenderer shall mention clearly the make of pump quoted as well as make of other accessories as per Appendix 'A' failing which their offer is liable to be rejected.

17.0 Tenderer shall give guarantee to set right the pump free of cost against any manufacturing defect noticed during installation and commissioning and also for one year trouble free service from the date of commissioning as per IRS condition.

18.0 The successful tenderer shall supply in triplicate copies of illustrated leaflet characteristic curve, installation, maintenance and operating manual, spare parts list with makers reference number, of which one set will be sent to CEE/NER/GKP, one to DRM/Elec. Concerned and one to the consignee along with the supply of pumping set.

19.0 Inspection shall be carried out by RITES at manufacturer's premises.

This issues with the approval of CEE.

(Jagdish)

**Dy. CHIEF ELECTRICAL ENGINEER  
FOR CHIEF ELECTRICAL ENGINEER  
NORTH EASTERN RAILWAY,  
GORAKHPUR**

# DANGER NOTICE PLATE

IS: 8551-1988



ALL DIMENSIONS ARE IN MILLIMETRES

## NOTES:-

1. THE PLATE SHALL BE MADE FROM MILD STEEL, AT LEAST 0.5 MM THICK AND SURFACES ENAMELLED WHITE, WITH LETTERS, FIGURES AND THE CONVENTIONAL SKULL AND CROSS-BONES IN SIGNAL RED COLOUR (SEE IS: 8-1978) ON THE FRONT SIDE. THE REAR SIDE OF THE PLATE SHALL ALSO BE ENAMELLED.
2. ALL THE LETTERINGS SHOULD BE CENTRALLY SPACED.
3. THE DIMENSIONS FOR THE WORDS IN HINDI LANGUAGE ARE MAINLY FOR BALANCE. HOWEVER, CARE SHOULD BE TAKEN TO SPACE THEM CENTRALLY BETWEEN THE EDGES AND THE AREA OF THE SKULL AND CROSS-BONES.
4. THE LOCATION OF THE FIXING HOLES SHALL BE LEFT TO THE CHOICE OF THE USER.
5. THE CORNERS OF THE PLATES SHOULD BE ROUNDED OFF.
6. 11000 VOLTS IS JUST SPECIMEN, ACTUAL VOLTAGE IS TO BE INSERTED FOR DIFFERENT SYSTEM VOLTAGES.

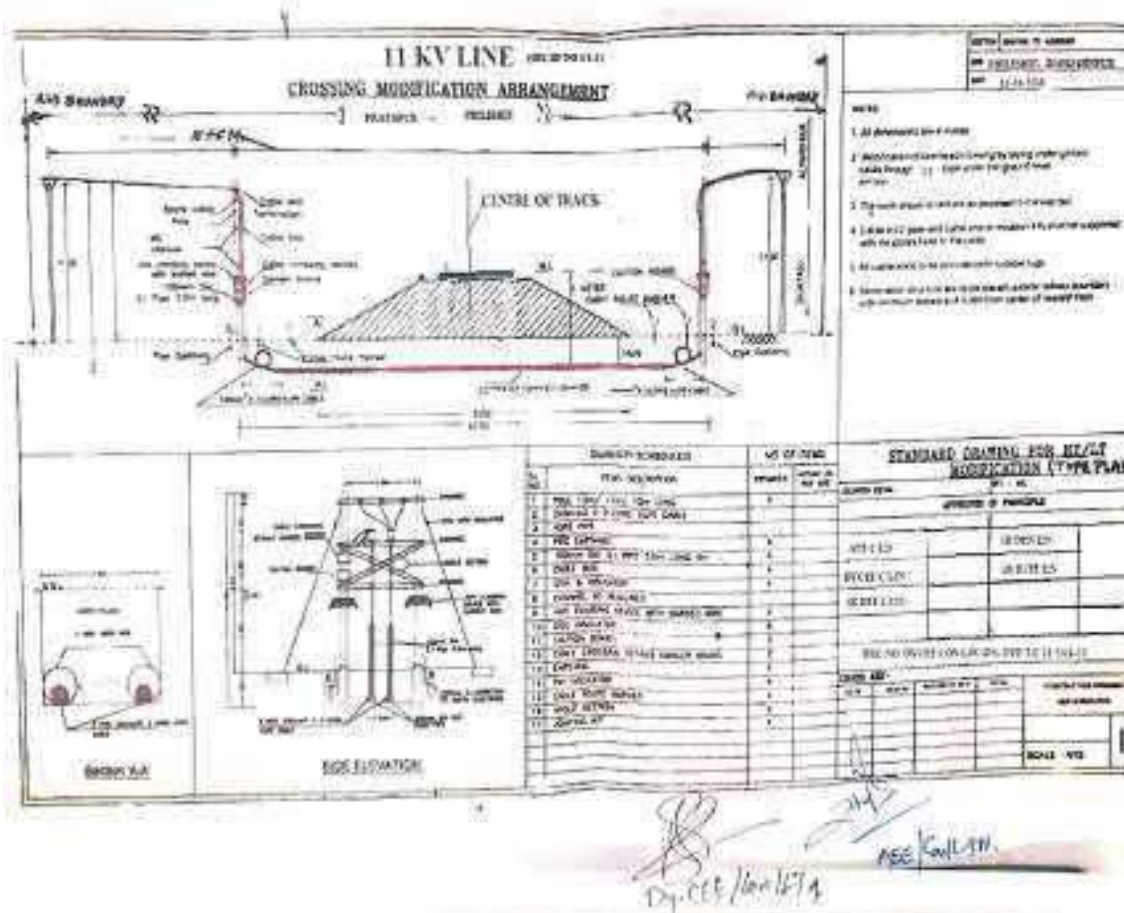
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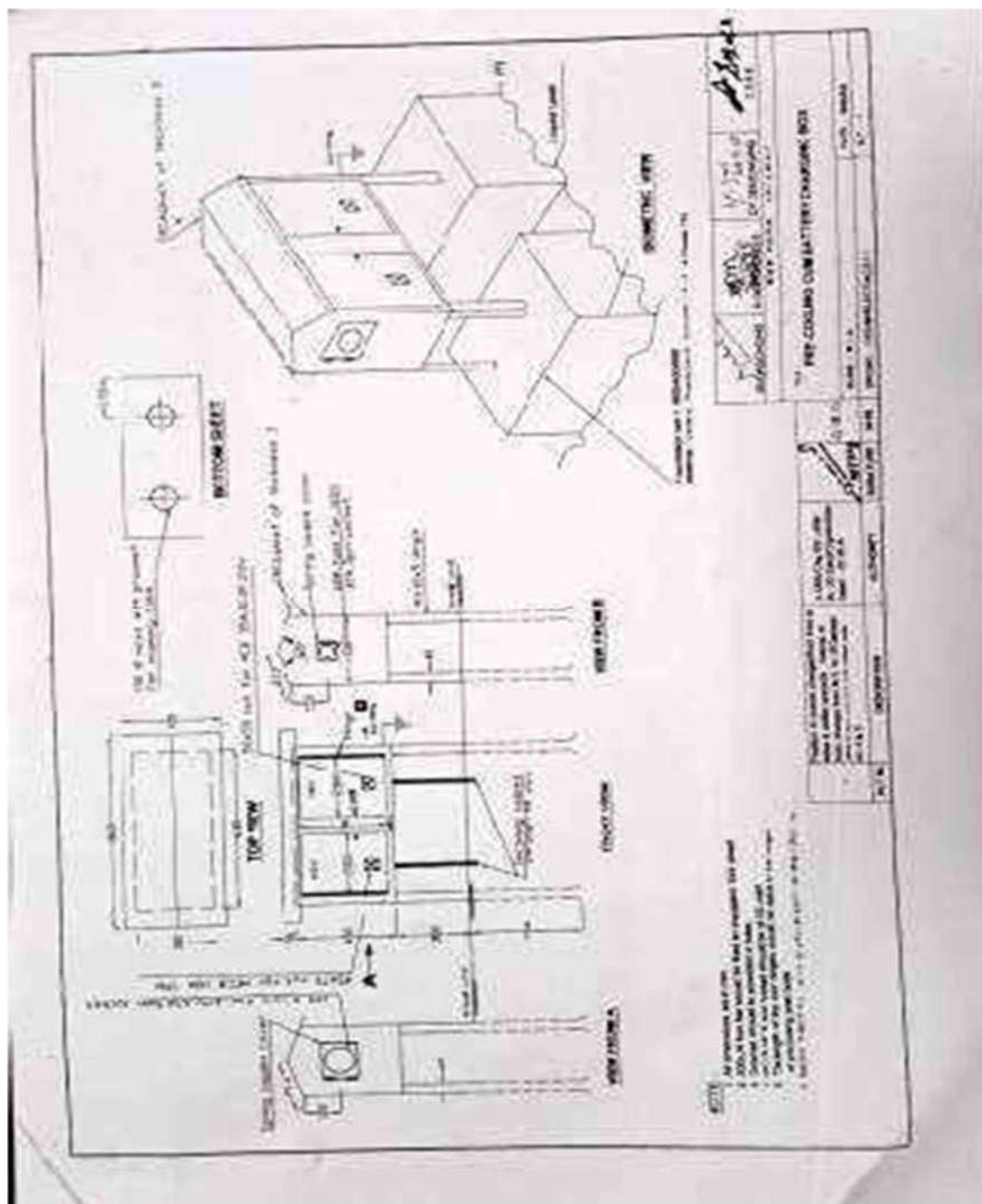
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DIRECTOR

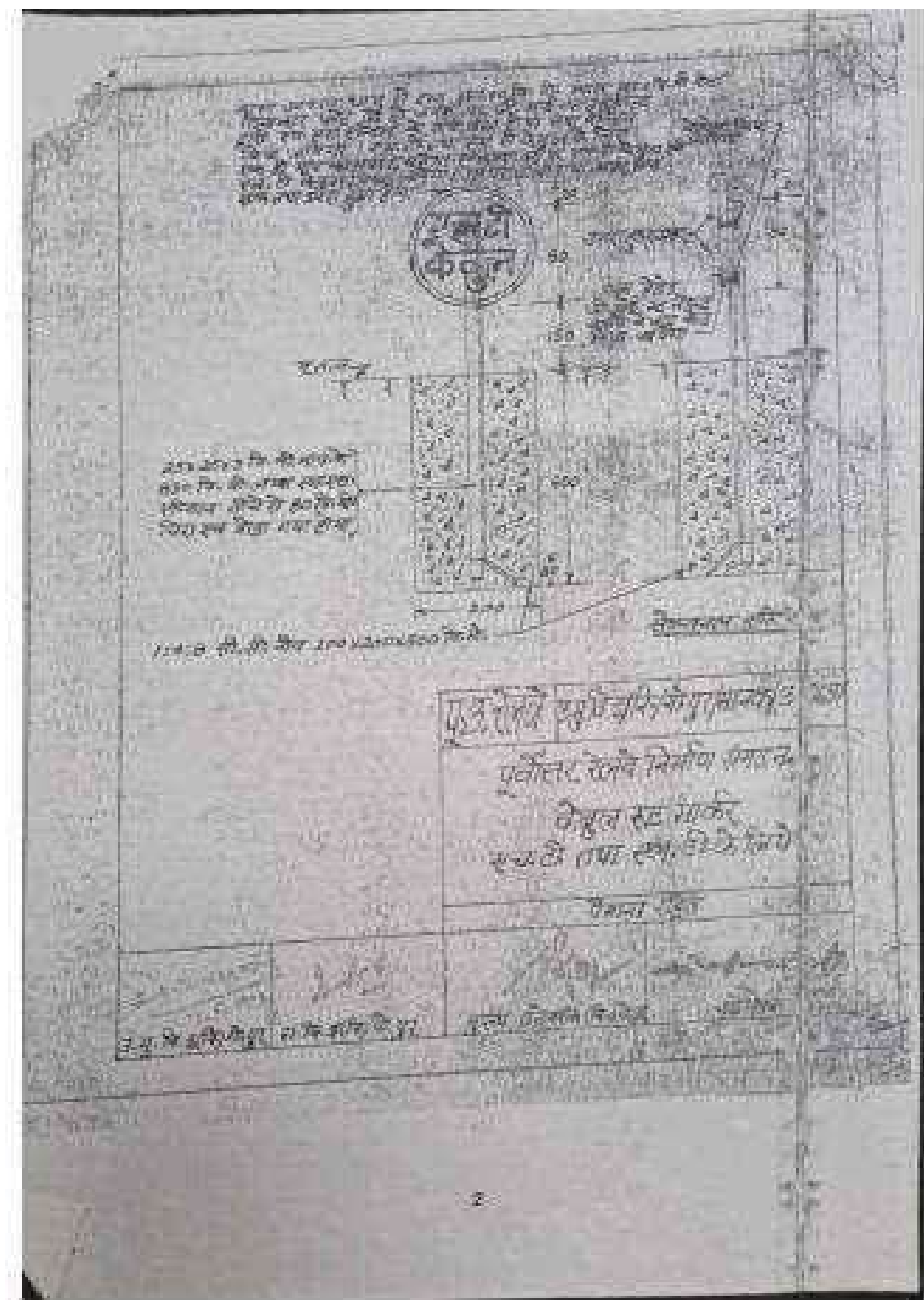
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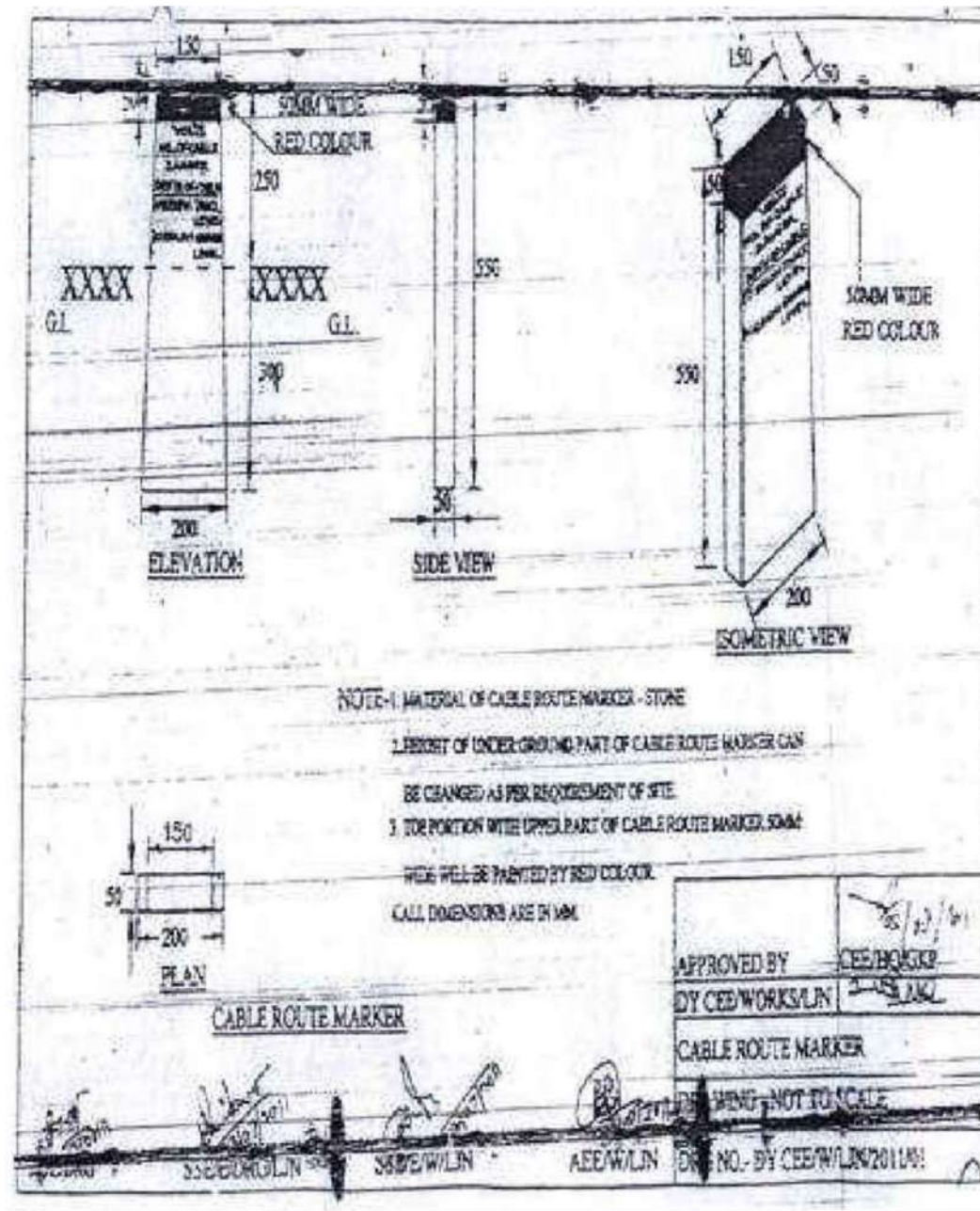


**Track Crossing (supply and erection) for 11 KV/0.4 KV of Double/Triple/Four line.**



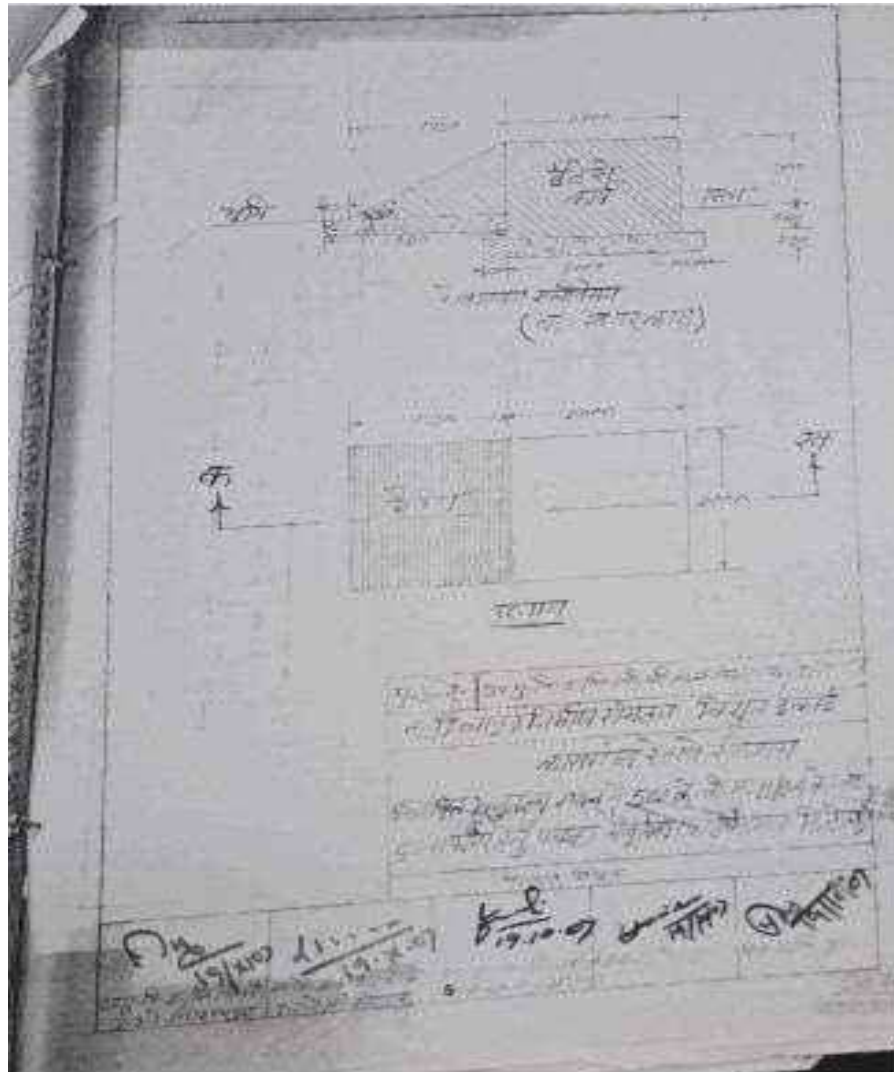


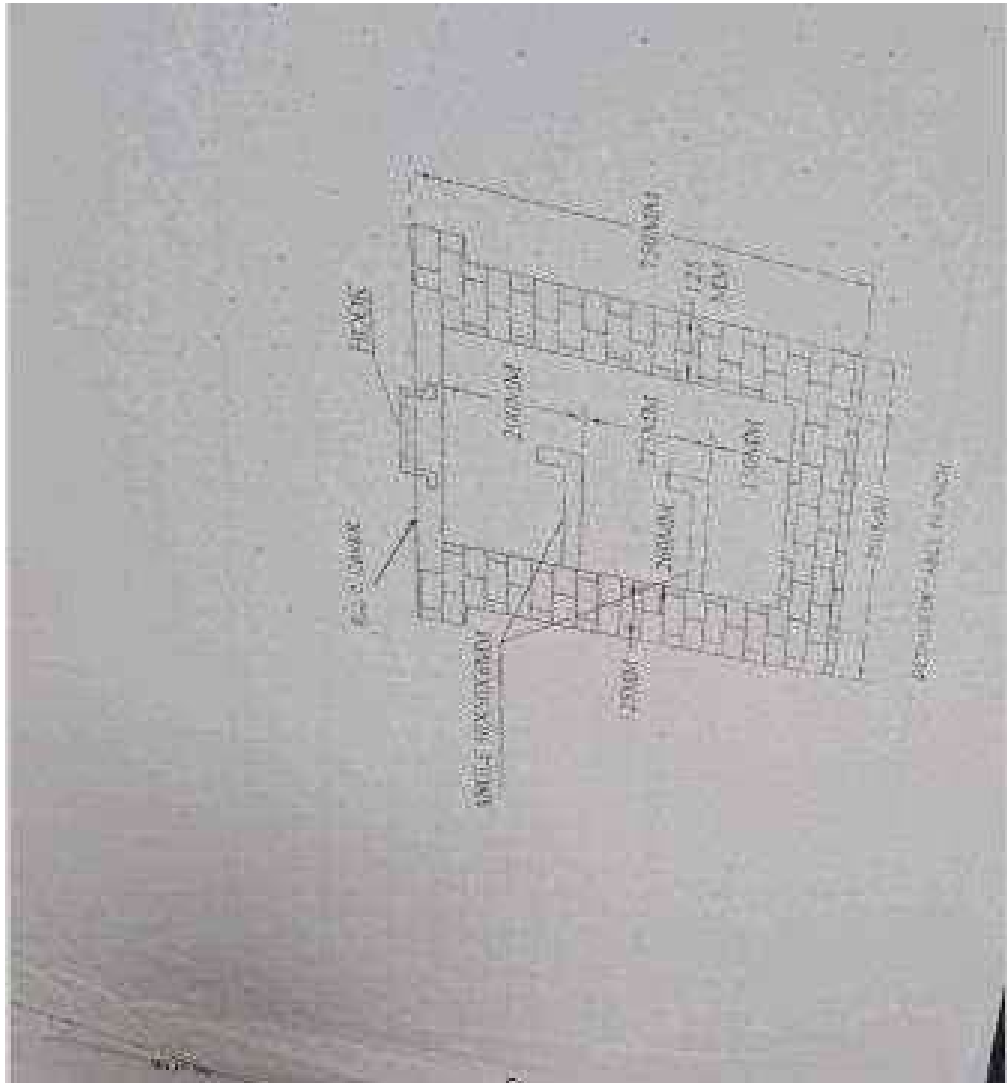














पुणे जिल्हा

कार्यालय  
महाप्रबन्धक (विद्युत)  
मोरापूर  
दिनांक = 01-12-09

०२५/११/०९

२७/११/०९

५  
२५/११

अ० - वि/इंज/आय/आय-३/१९

बॉर्डर मंडल विद्युत इंजीनियर  
राजवड, नाशिक सं उपजलकेंद्र  
अ मु वि इं/आय/मोरापूर-उपजलकेंद्र  
अ मु वि इं (आय/मोरापूर)  
अ मु वि इं/विद्युत/मोरापूर

विषय - गीत व विद्युतकृत लवट की बांध

विद्युतकृत लवट का आयोजन करताना कायदा व नियम वी. ए. ओ.  
द्वारे व असे दंडित - II रितने करताना हे विद्युत उपजलकेंद्र  
द्वारा, जिसे आपण ३-कलेक्टारिय सं उपजलकेंद्र कार्य-  
वारी हेतु दंडित करताना करताना हेतु

संलग्न :- अर्जा

०२५/०१/१०

(वी. गव)  
मु वि इं/उपजल  
हाते महाप्रबन्धक (विद्युत)





समिति  
पृष्ठ सं.  
शब्दों : १६३२  
CC-0.0 : १४७७

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147

चित्र ४

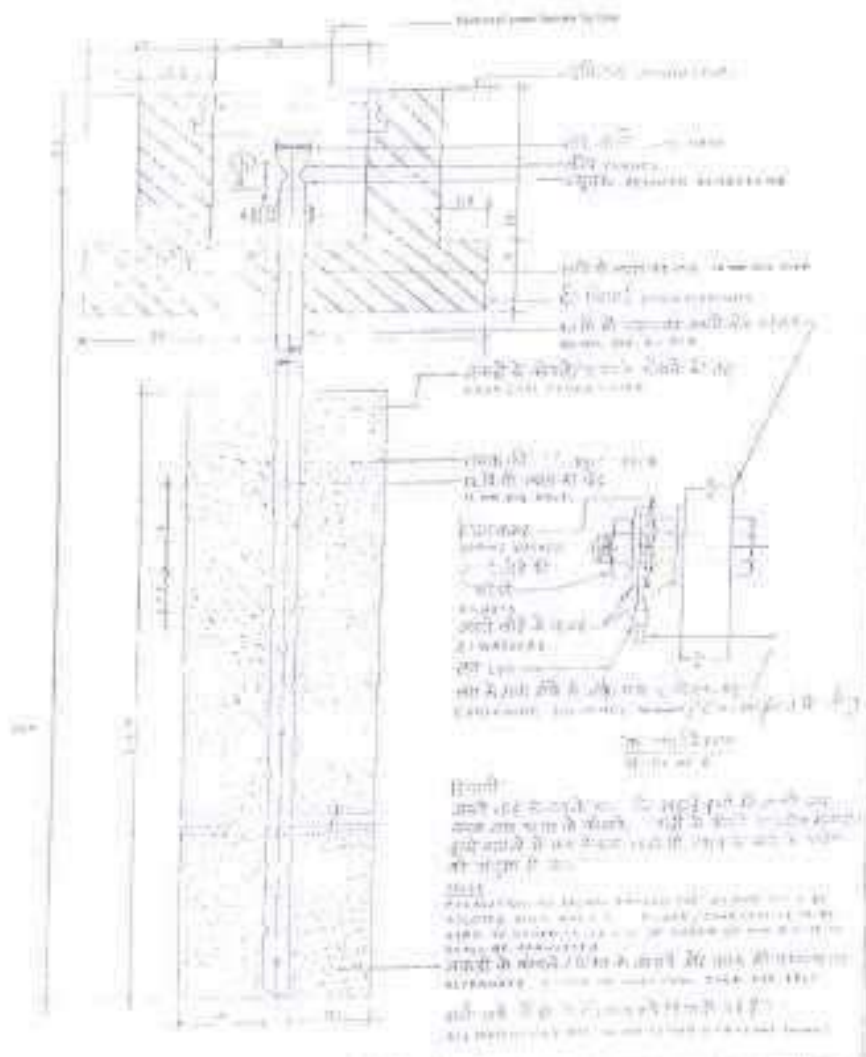
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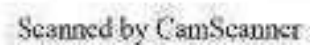
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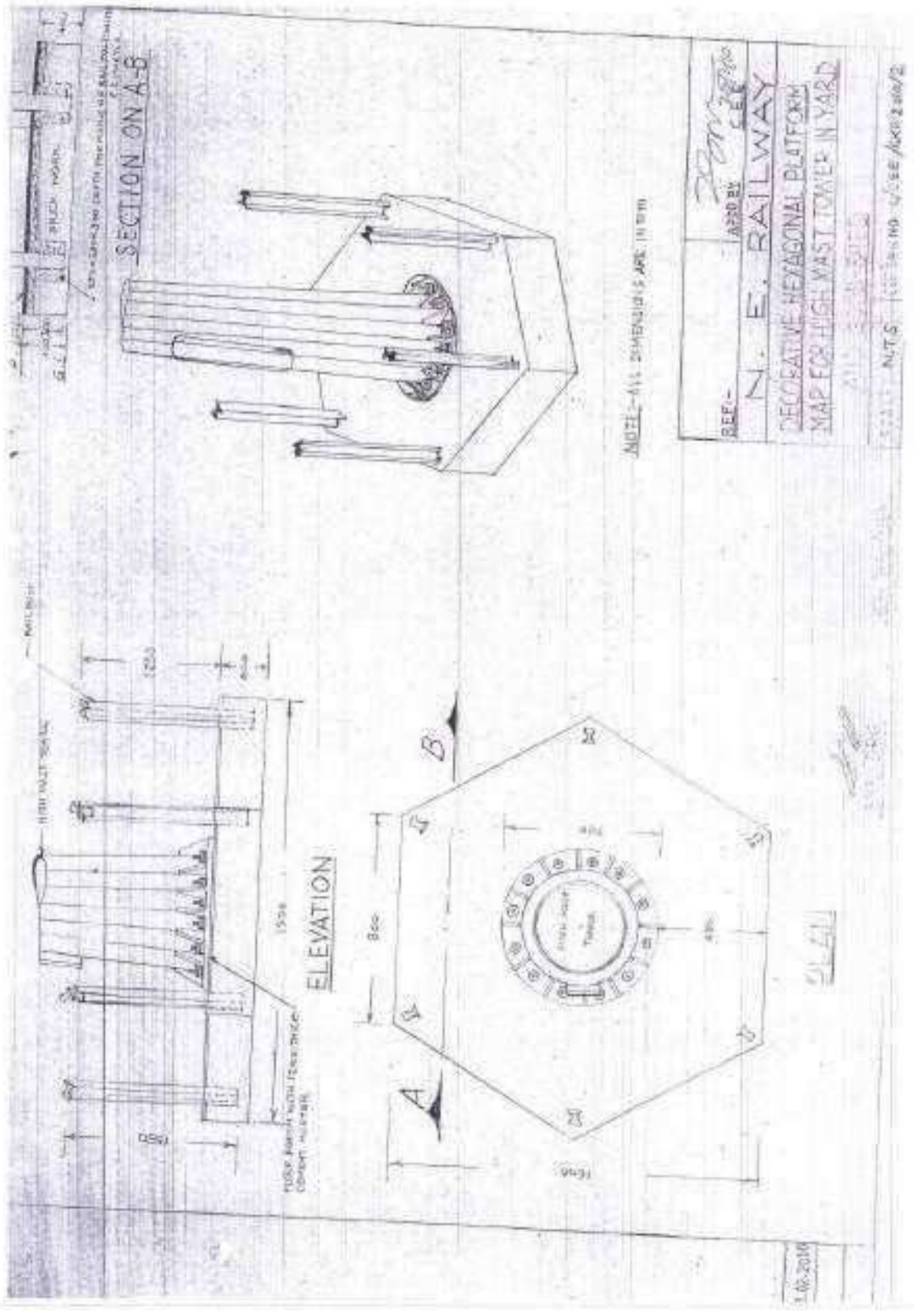
प्लान - ३६३१  
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# नल भू-संलग्न की विधि METHOD OF PIPE EARTHING

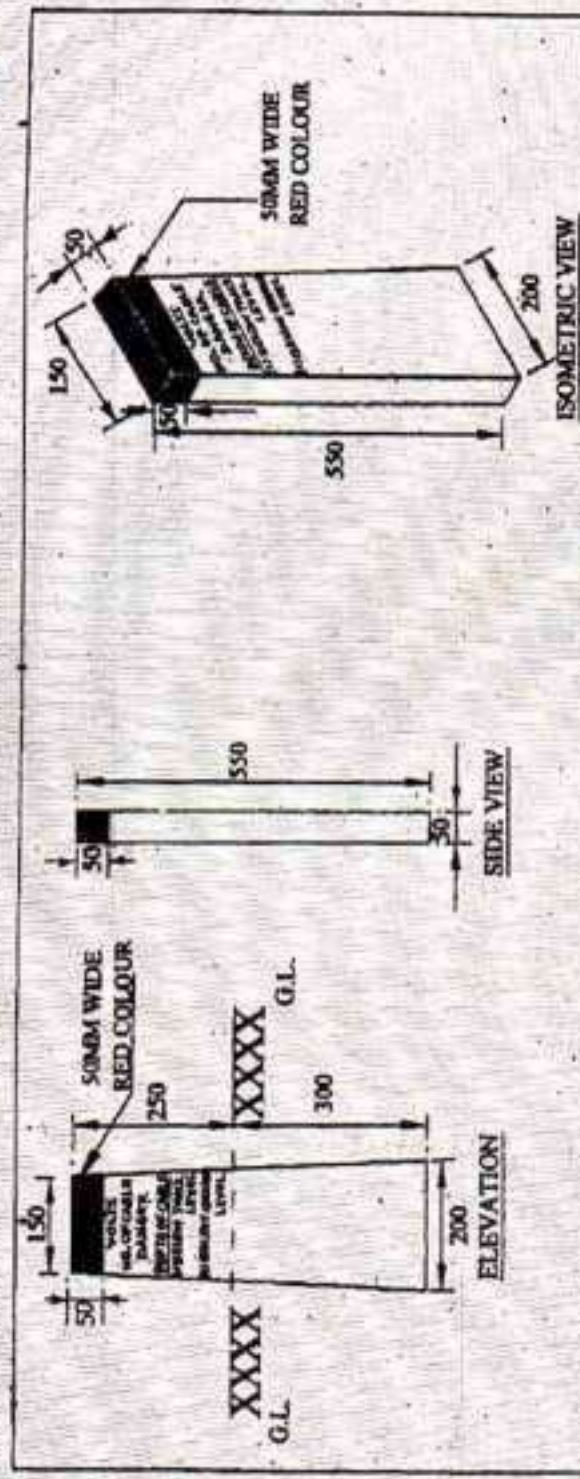








SYNOPSIS ON ARI 350730A

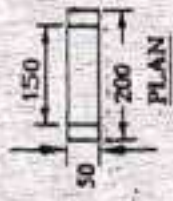


NOTE-1. MATERIAL OF CABLE ROUTE MARKER - STONE

2. HEIGHT OF UNDER GROUND PART OF CABLE ROUTE MARKER CAN BE CHANGED AS PER REQUIREMENT OF SITE.

3. TOP PORTION WITH UPPER PART OF CABLE ROUTE MARKER 50MM WIDE WILL BE PAINTED BY RED COLOUR.

4. ALL DIMENSIONS ARE IN MM.



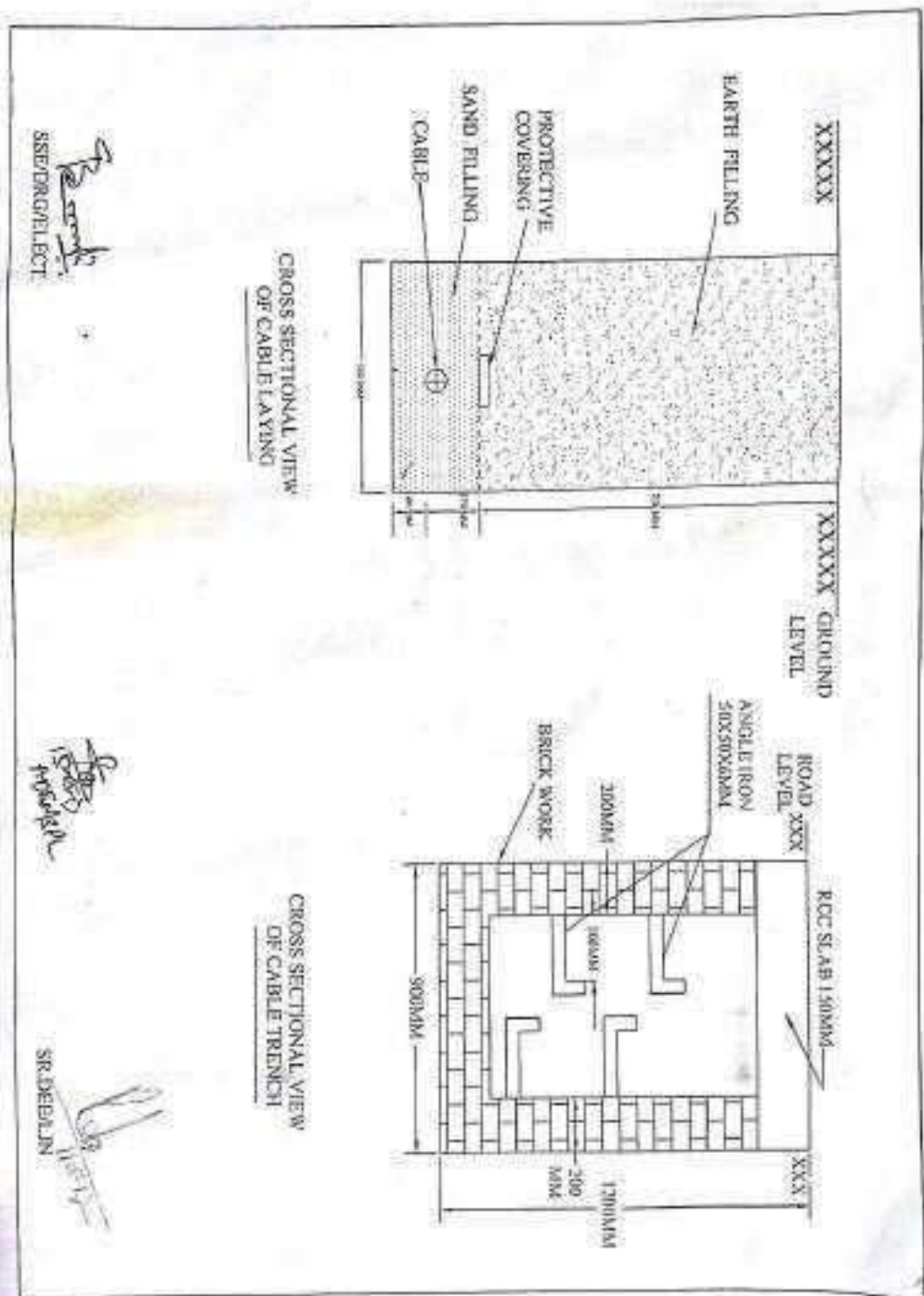
CABLE ROUTE MARKER

JET/DRG  
 SSEE/DRG/LN  
 SSEE/W/LN  
 AEE/W/LN

APPROVED BY	CEE/HQ/KKP
DY CEE/WORKS/LN	2-158/100
CABLE ROUTE MARKER	
DRAWING - NOT TO SCALE	
DRG NO. - DY CEE/W/LN/2011/01	



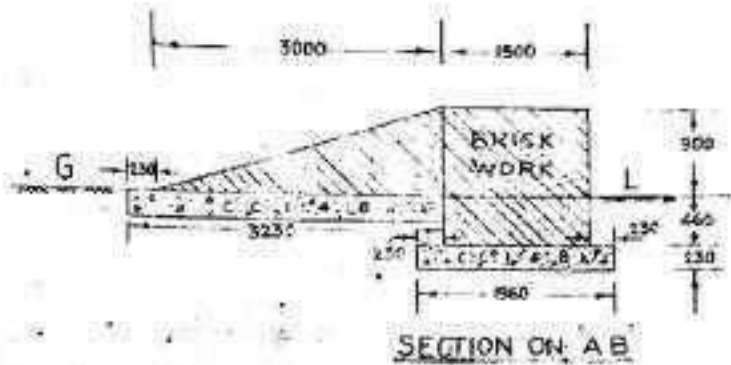




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# TRANSFORMER FOUNDATION



DATE [ ] [ ] [ ] ORG NO DEE/COL/GMP/24-37/5

PLAN SHOWING FOUNDATION  
FOR 250 KVA TRANSFORMER.

NOT TO SCALE

20237  
100  
100

*[Signature]*  
100

*[Signature]*  
100



- मु.वि.सं. ३०६८ की समीक्षा-विज्ञापन-तारीख का निर्धारण

Signature	Less	Major	Signature
04/05/2019	04/05/2019	04/05/2019	04/05/2019



पूर्वोत्तर रेलवे

कार्यालय

प्रमुख मुख्य विद्युत इंजीनियर

पूर्वोत्तर रेलवे, गोरखपुर

दिनांक 10.08.2023

संख्या - वि.भ.पारि.सी.भाग-III/ 546

अतिरिक्त प्रमुख विद्युत इंजीनियर (सा.)

लखनऊ, आवासीय इन्जलनगर

उप मुख्य विद्युत इंजीनियर/कारखाना/गोरखपुर

उप मजिस्ट्रेट/निर्माण/बी.जी. गोरखपुर, लखनऊ

मजिस्ट्रेट/कारखाना/इन्जलनगर

मजिस्ट्रेट/कारखाना/गोरखपुर।

विषय: BLDC Ceiling fans 1400mm के Technical Specification के संबंध में

संदर्भ: रेलवे बोर्ड का पत्र सं - 2021/EEM/180/5-Part(I) dt 18.04.2023

इस कार्यालय द्वारा BLDC Ceiling fans 1400 mm के रूप में प्रमुख मुख्य विद्युत इंजीनियर महोदय द्वारा निम्नलिखित Technical specifications को अनुमोदित किया गया है -

S. N.	Parameters	Value
1.	Fan Type	Energy Efficient Brushless DC (BLDC) Ceiling Fan
2.	Motor Type	Brushless DC
3.	ISI marked	Yes
4.	Rated Voltage & Frequency	175-250 V, Single Phase AC, 50 Hz
5.	Power Consumption	< 40Watt
6.	Power Factor	> 0.95
7.	Sweep size	1400 mm
8.	Winding	Copper
9.	Service ratio	≥ 7.5
10.	Regulator	Electronic regulator or Remote control
11.	No. of Blades	3
12.	Bearing	Double ball bearing
13.	Total Harmonic Distortion	< 15%
14.	Blade thickness (min.)	1.1 mm
15.	Blade material	Aluminium
16.	Canopies	2 nos.
17.	Length of down rod (without shackle)	300 mm
18.	Shank and Shackle thickness (min.)	2 mm
19.	Energy Efficient BEE star rating	5 Star
20.	Warranty	5 Years (60 Months) from the date of supply
21.	IS	IS: 374/2019 or latest
22.	Test Report	Test report shall be submitted before acceptance duly certified by NABL/ILAC accredited or Central Government laboratory to prove product specification

अतः BLDC Ceiling fans 1400 mm की खरीदारी उपरोक्त Technical Specification के अनुसार किया जाय।

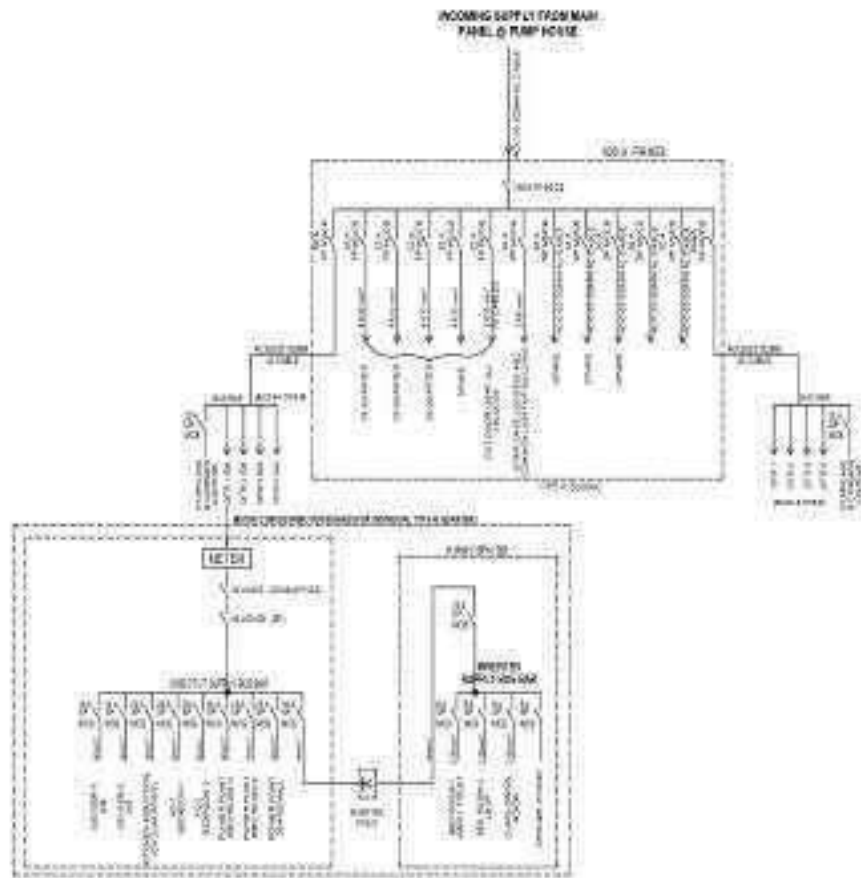
(सौम्य चौधरी)

उप(मजिस्ट्रेट)आरक्षी

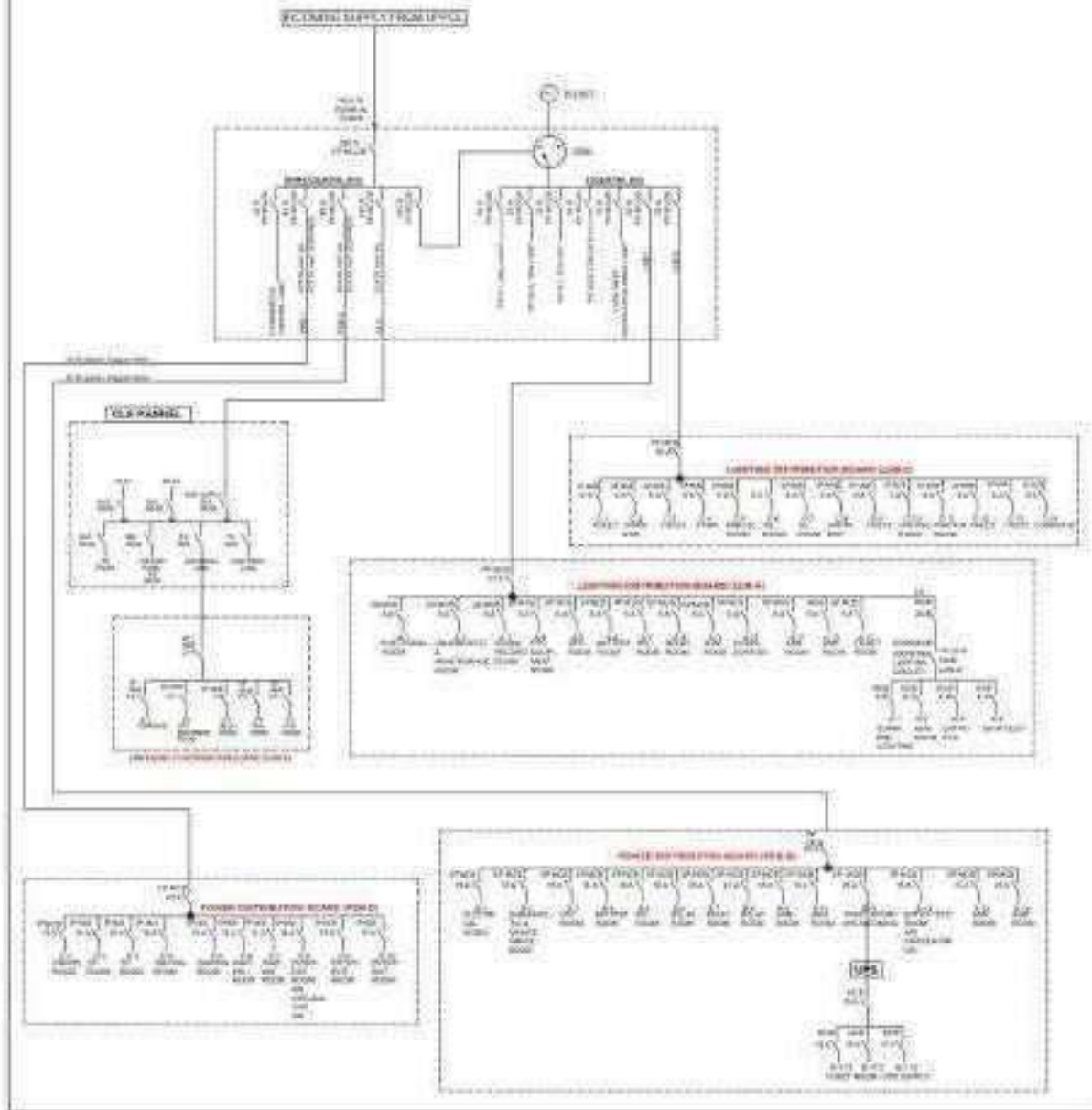
प्रतिनिधि - प्रमुख मुख्य भण्डार निरीक्षक, पूर्वोत्तर रेलवे, गोरखपुर को सूचनाई प्रेषित।

कुले प्रमुख मुख्य विद्युत इंजीनियर

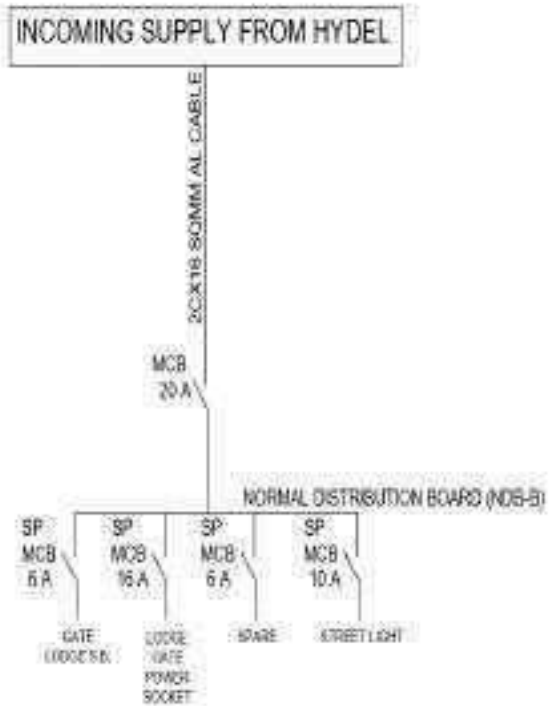
# SYMBOLIC SINGLE LINE DIAGRAM OF MULTI STORY RESIDENTIAL BLOCK



**SYMBOLIC SINGLE LINE DIAGRAM OF STATION BUILDING**



## SYMBOLIC SINGLE LINE DIAGRAM OF LC GATE



## PARTICULAR FOR 30/60/90/120 WATT STREET LIGHT FITTING

**DESCRIPTION:** "LED Street Light 30/60/90/120watt.

**GENRAL REQUIREMENT:-**

S.N.	PARAMETER	VALUE
<b>1.0 Technical Requirement of LED</b>		
1.1	Wattage	30/60/90/120 watt
1.2	Nominal input Voltage	220V. A.C,50Hz
1.3	LED efficacy	Minimum 120 lumens/watt
1.4	Type of LED	SMD type only
1.5	Make	Cree/osram/SEOUL/PHILIPS LUMILEDS/LEDIUM NICHIA
1.6	Life Expectancy	Minimum 50,000 Burning Hours.
1.7	Colour Temperature	White colour LED,5665°k±335k
1.8	Colour Rendering Index	Greater than or equal to 70
1.9	Typical View Angle	120° (Minimum)
1.10	Efficiency of driver	85% (Minimum)
<b>2.0 Technical Requirement of Luminaire.</b>		
2.1	Power factor of complete fitting	More than 0.95
2.2	Input operating Voltage	140-270 V.A.C
2.3	Driver Surge Protection	Minimum 4 kv
2.4	Total Harmonic Distortion	Less than 15% at full load.
2.5	Housing of Luminaire	Pressure die cast LM6/ADC12/LM24 Housing.
2.6	Cover type	Toughened glass or UV stabilized Polycarbonate cover
2.7	Housing Protection	IP 66
2.8	Luminaire Efficacy	Minimum 100 lumens/watt with Minimum P.F of 0.95
3.0	Test report to be mandatory submitted at the time of supply of Material.	All the certificate should be from NABL accredited Laboratory/UL/NABL/MRA/ILAC/KOLAS/NVLAP/EPA. <ul style="list-style-type: none"> <li>• Lm-79 test report in respect of the luminaire used.</li> <li>• LM-80 test report in respect of the LED used.</li> </ul>
3.1	Warranty	60 Month from the date of supply.

### TECHNICAL PARTICULAR OF OCTAGONAL POLE 6 MTR. LONG

Supply of 6 Mtr. Octagonal/polygonal poles shall be designed as per ILE TR 7 & BS 5649 for structural design & as per IS:875 (Pt.III) 1987 for dynamic loading

The pole Shaft shall be made single piece MS structure continuously tapered having polygonal (8/12 sides) cross section and a single longitudinal welding. The welding ill, be done as per BS 5135/IS:9595. No circumferential welding shall be allowed in the pole shaft. The MS shall confirm to BSEN 100025/100027. The structure shall be single hot dip galvanised as per BS 729/IS:2629. A suitably designed, hinged door shall be provided at approx. 600 mm height from the pole base. The door opening will be suitably reinforced for structural strength and neoprene rubber gasket cushioned for water egress protection. The door shall be flushed with pole external surface and shall provide easy access for electrical connections at a maintainable height. Foundation accessories will be as per IS:1367.

#### Dimensional Data

1. M.S. sheet thickness: 3 mm
2. Galvanization thickness: 65 microns (min)
3. Hinged Door: 500 mm x 80mm size with rubber gasket
4. Pole height: 6 Mtr.
5. Top diameter: 70 mm (min)
6. Bottom diameter: 140mm (min)
7. Base flange thickness: 16 mm (min)

8. Base plate dimension: 260x260x16mm
9. Foundation bolts
  - (a) Nos. 4
  - (b) Lengths- 750mm
  - (c) Type - M16
10. Double over hang bracket ( 0.5 mtr each) long made of 48.3 mm outer dia G.I.pipe.
11. Junction box chamber having provision of insulated Bakelite sheet, four connector terminal, 6 AMP MCB mounted on DIN RAIL& 2x1.5 sq mm PVC insulated copper cable from MCB/Connector terminal to first LED fitting and other LED connection looped from previous Luminary terminals. No loose joint connection shall be permitted for LED fitting connection.



### **Detailed Technical Specification for LT Distribution Panels.**

1.0 SCOPE:- This specification covers the supply of LT distribution board, cubical type , suitable for 3 phase, 4 wire , 50Hz, 0.8 PF, fabricated out of M.S. sheet, free standing, floor mounting, front hinged for indoor use (to be specified) for complete accommodation of equipments.

2.0 All equipments shall in general comply with the updated issues of –

- i) Applicable Indian Standards.
- ii) Indian Electricity Act, 1910.
- iii) Indian Electricity Rules, 1956

3.0 Some relevant Indian Standards for the equipments covered under this specification are as follow unless any thing specified contrary to this in this specification-

IS/IEC 61439-2 : 2011 - Specification for Low Voltage switch gears and control gears Assemblies  
IS/IEC 60947-1:2020 - IS specification for LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR PART 1 GENERAL RULES.

IS/IEC:60947-Part-2/2016,(Amndt-1): Low-Voltage Switchgear and Controlgear: Circuit Breakers

IS/IEC 60898:PART-1:2015- Electrical Accessories - Circuit-Breakers for Overcurrent Protection for Household and Similar Installations : Part 1 Circuit-breakers for a.c. Operation (First Revision)

IS/IEC 60529 : 2001 (Amendment-1/2024): Degrees of protection provided by enclosures (IP CODE)

IS-3842:Part1:1967 (ReaffirmedYear: 2021 ): Application guide for electrical relays for ac systems: Part 1 Overcurrent relays for feeders and transformers

IS:5082/1998 (Amendment-1,2&3)- Aluminium Bus bars

IS-613 (Amendment-1&2): Copper Bus bars

IS:2705(Pt.-I)1992 (along with Amnd-1 &2)- Current transformers

IS:6005/1998 (Reaffirmed 2021) - Code of practice of phosphating iron & steel.

IS:13925 (Pt.-I) 2012 - Shunt Capacitors For Ac Power Systems Having A Rated Voltage Above 1000 V Part 1:general

IS/IEC:60947-Part-3/2020- Low-Voltage Switchgear And Controlgear - Part 3 Switches Disconnectors Switch-Disconnectors And Fuse-Combination Units

IS: 1248(Pt.-I,II & III)/2021 - Measuring instruments

#### **4.0 GENERAL CONSTRUCTION AND TECHNICAL DETAILS: -**

4.1 All distribution boards shall be metal enclosed, indoor, front flush, natural cooled, cubical, free standing type complete with mounting hardware for directly mounting on foundation.

4.2 The panel frames shall be fabricated using cold rolled sheet steel of thickness 2.5mm/angle iron. Frames shall be enclosed in cold rolled sheet steel of thickness 1.6mm.or more (to be specified). The doors and covers shall also be of 1.6mm. thick or more (to be specified) cold rolled sheet steel.

- 4.3 The distribution boards shall be of dust and vermin proof construction with a degree of protection desired as per IS/IEC 60529 & IS 17050 : 2023. The doors shall be hinged type and operating handle/knob of the circuit breaker/fuse switch unit shall project outside. The doors shall have locking arrangement.
  - 4.4 All doors and panel removable covers shall be gasketed all around with neoprene rubber gaskets. If louvers have to be provided, these shall be provided with a very fine brass or GI mesh screen. No louvers would be permitted in the external enclosures.
  - 4.5 Distribution boards shall be of uniform height of not more than 2250mm. The height of the operating handle etc. shall not be more than 1800mm.
  - 4.6 Distribution boards shall be provided with a metal frame made of steel channel section properly drilled for mounting the distribution boards on foundations.
  - 4.7 Necessary removable gland plates shall be provided for termination of cables. The panels shall have provisions of cable entry from the bottom and/or top and shall be furnished complete with cable lugs and double compression type brass cable glands. The distribution boards shall have front access to the cable compartments allowing the board to be set against the rear wall. Danger notice plates will be provided at suitable location on panels.
  - 4.8 A galvanized steel earthing bus shall be provided at the bottom through out the length of the distribution board, which shall be bolted/welded to the frame work of each unit for double earthing. The size shall be at least 50mm.x 8 mm. or more.
  - 4.9 Entire sheet metal steel works in cubical shall have undergone rust proofing process comprising alkaline degreasing, decaling in dilute acid solution.
- The distribution board fabricated out of material, after pretreatment as above, shall be nicely finished with at least two coats of epoxy based powder and last touch up painting.
- 4.10 Switch gears shall be so designed and selection of all components should be so made that all equipments operate satisfactorily without exceeding their respective maximum temperature rise under site ambient temperature condition prevailing within the distribution board. Reference ambient temperature outside the equipments cubical shall be taken as 50°C.
- 5.0 MAIN POWER BUS BAR**
- 5.1 Distribution boards shall be provided with three phase and neutral bus bars in a separate air insulated bus- chamber.
  - 5.2 Bus bars shall be of uniform cross-section throughout the length conforming to IS:5082/1981 or IS-613 (Amendment-1&2), as applicable.
  - 5.3 Bus bar shall have a clearance in air specified in IS: 60947(Part-1) for 415 Volt, 3 phase system as under:-
 

i) Between phase to phase	30 mm
ii) Between phase & neutral	30mm
iii) Between phase & Earth	30mm
iv) Between Neutral & Earth	30mm
  - 5.4 All bus bars shall be painted with a non - metallic paint or suitable sleeves shall be provided.
  - 5.5 All Bus bar (main as well as connecting bus-bar) & Jumper connections shall be made of high conductivity copper of suitable cross section and **current density of the bus bars shall not exceed 1 Amp. per Sq.mm of the equivalent copper cross section.** It shall be suitable to withstand short circuit current for a period of 60 seconds
  - 5.6 Connections to bus bars shall be made either by clamping arrangements or by nuts and bolts as required, care should, however, be taken to ensure that current density of the bus bars at the point of connections does not exceed permissible limit.
  - 5.7 Bus bars shall be adequately supported and braced to withstand the stresses due to the specified short circuit currents for the associated switchgears. Bus bars supports shall be made of suitable insulating material ( Hylem/ Porcelain).

- 5.8 Bus bar joints shall be complete with high tensile galvanized steel nut and bolts with washer. Bus bars shall be thoroughly cleaned at the joint locations and a suitable contact grease shall be applied just before making a joint.
- 5.9 All incoming/outgoing feeder MCCB/ACB shall be connected to Main bus bars with solid bus-bar links.
- 6.0 CIRCUIT BREAKERS/ FUSE SWITCH UNITS: -**
- 6.1 Circuit breaker for incoming shall be draw-out type, 3 poles and neutral, air break type or moulded case suitable for manual operation and provided with thermal over-load and magnetic short circuit protection. The charging of spring shall be manual only. A red push button shall be on the front of the panel to trip the breaker by pressing the button. The circuit breaker shall be provided with earth leakage protection to disconnect the supply instantly on the occurrence of earth fault or leakage current.
- 6.2 All the outgoing feeders shall be provided with moulded case circuit breaker/fuse switch units of rating as indicated below in technical particular. Over load thermal release and magnetic release for short circuit protection shall be provided on MCCBs.
- 6.3 Technical particular of the circuit breakers/ Fuse switch units and distribution boards shall be as follows: -
- |                                                                                                     | Outgoing feeder                                                                  | Incoming feeder                                                            |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| (a) Rated current in Amps<br>as per single line diagram.                                            | -                                                                                | -                                                                          |
| (b) Rated voltage and frequency                                                                     | 415 V,50Hz                                                                       | 415V,50Hz                                                                  |
| (c) No. of poles.                                                                                   | 4                                                                                | 4                                                                          |
| (d) Short time rating                                                                               | 2KA for 1 Sec.                                                                   | 35KA for 1 Sec.                                                            |
| (e) Breaking current                                                                                | 20KA or above                                                                    | 55KA or above.                                                             |
| (f) Making current                                                                                  | 40KA (peak)                                                                      | 73.5 KA (peak)                                                             |
| (g) Over load release range<br>(For incoming and outgoing feeders)                                  | Thermal release shall be provided for 50% to 100% of rated current as specified. |                                                                            |
| (h) Short circuit release range<br>(For incoming and outgoing feeders)                              | Magnetic release shall be provided.                                              |                                                                            |
| (i) Earth leakage protection<br>(For incoming feeders only)<br>Not applicable for fuse switch units | -                                                                                | Relay setting<br>20% -80%(multi step)                                      |
| (j)                                                                                                 | -                                                                                | KWH metre                                                                  |
| (k)                                                                                                 | -                                                                                | Ammeter &<br>Voltmeter metre<br>with selector switch of<br>suitable range. |
| (l)                                                                                                 | -                                                                                | Indicating lamp.                                                           |
- 7.0 Air cooled current transformers of suitable ratio, 415VA burden and class I accuracy for metering and 5P10 for protection shall be used.
- 8.0 Separate current transformers shall be provided for protection and metering circuits.
- 9.0 **Bus coupler:** TPN/FP MCCB/ACB of 125/250/400/800 Amps. Capacity shall be provided as bus coupler. Bus coupler device shall be electrically interlocked with incomer MCCB/ACB of both incoming source of supply, such that bus coupler shall not close with both incomer feeder MCCB/ACB in ON condition. In case of Bus coupler is closed with one source of supply, any accidental or forcefully switching ON the other source of supply, shall cause automatic tripping of bus-coupler.

- 10.0** Change over switch shall be provided where required as per single line diagram attached with specification conforming to IS/IEC 60947-3. The change over switch shall be electrically interlocked with the incoming ACB/MCCB, so that in case of faulty operation of the change over switch, the main circuit breakers are tripped .
- 11.0** Bus bars ACB/MCCB/Fuse switch units shall be provided in the LT distribution board. The ACB shall be type tested & certified for compliance to IS:60947 from Indian testing authorities –CPRI, ERDA, the opening time for ACB shall not exceed 40 ms at any current level.
- 11.1** Indenter will specify about the equipment to be used along with sketch of cubical and thickness of sheet steel and iron etc. where scope permits and supplier will get it approved before manufacture.
- 12.0 INSPECTION:-**
- 12.1** The LT distribution board and its all components shall be subjected to routine & acceptance tests as per relevant Indian Standards at manufacturer premises by inspecting agency as nominated by NER.
- 12.2** Routine tests shall be carried out on the panels to check the degree of protection of the enclosures as per relevant standards.
- 12.3** The bidder shall furnish with the bid , type test reports for the circuit breakers, fuse switch units and LT distribution boards of the type and make offered.
- 13.0 SPARES: -**  
The tenderers shall quote separately for spares required for two years normal maintenance indicating item – wise quantity and cost.
- 14.0 SUPPLY OF DOCUMENTS –**
- 14.1** Each tenderer shall send technical particulars, leaflets of the equipments offered by them and electric wiring diagram, dimensional drawing of distribution board along with the offer.
- 14.2** The successful tenderer shall send the technical leaflets, electric wiring diagram; complete routine tests certificates and installation/operation/maintenance manuals in triplicate (one copy each to consignee, respective Sr.DEE/DEE & Chief Electrical Engineer, N. E. Railway).
- 15.0 GUARANTEE –**  
Each tenderer shall give guarantee for one year trouble free service against all defects and faults in material, workmanship and manufacture from the date of installation or eighteen months from the date of receipt of the distribution board by the consignee which ever is earlier.
- 16.0 DEVIATION** –Deviation from any of the clauses of the above specification shall be clearly indicated in the offer; otherwise it will be presumed that the offer is strictly as per this specification.

\*\*\*\*\*

**NORTH EASTERN RAILWAY  
ELECTRICAL DEPARTMENT  
CHAPTER-9**

**SCHEDULE OF ITEMS, QUANTITIES, RATES, EXPLANATORY NOTES & DRAWINGS**

Name of Work: - General Electrification work in connection of construction of S&T service building at interlocked LC gate (Total = 19 Nos. LC).

Schedule of Work and rate: As per Tender NIT Schedule Note: -

(A) INSPECTION CLAUSE:

(1) **Pre dispatch inspection by RITES at the OEM premises (inspection cost shall be borne by the contractor), provided respective schedule material cost is more than 5 Lakhs. In case of material cost is less than 5 Lakh nominated consignee inspection at work site.**

(2) For other items L.T./H.T. Panel shall be pre dispatch inspection of material/equipment by nominated Railway representative/consignee at manufacturer's premises. Before Inspection (i) Contractor has to submit detailed drawings, GTP, for approval of railway Engineer. (ii) Contractor shall also submit, equipment manufacture/fabrication infrastructure, testing facility, complete type test report from CPRI, ERDA/NABL approved Lab for manufacture of equivalent or higher capacity Product/equipment manufacturing

(3) For all other schedule items, Construction material/equipment samples, make/Model, OEM detailed technical specification, test reports etc shall be submitted by contractor for approval, which will be inspected nominate by Railway site supervisor duly accepted by site supervisor. Material can be utilized only after its consignee suitability report duly approved by Railway site Engineer.

(4) Only inspected and approved make/model material/equipment shall be permitted for utilization in work execution, any deviation from pre-approval of material requires re-approval as above.

(B) Other instructions.

1. All the materials supplied by the contractor for execution of the work should be as per IS of latest edition and of standard make and should be got checked & approved by the competent authority (ADEE) before getting it into use for execution of the work.
2. All the works mentioned in the schedule of work will be executed as per direction of Railway Engg-in-charge (SSE/Elect).
3. The materials which will be supplied by the Railway will be obtained from store depot of Sr. Section Engineer (Elect).
4. Any other item not included in the schedule will be provided/fitted/done as per site requirement with the prior approval of competent authority.
5. Released material from site should be handed over to concerned regional depot in-charge.
6. Items to be supplied by contractor should be purchased from the authorized dealer or manufacturer as per relevant IS/IEC code.
7. If specified size/dimension of material to be supplied by the Railway given in schedule is not available in that be available, the material nearer to the size/dimension of the material will be provided with the approval of competent authority.
8. Contractor have to permanently mark the Contract Agreement No and date of installation on all LED Luminaire fittings, Fans and Electrical appliances/equipment's installed under the contract.
9. All supply and executes works items shall be covered of one-year technical guarantee from date of contract completion, except LED fitting and BLDC Ceiling Fan. LED fittings & BLDC Ceiling Fan shall have 60 months' OEM warrantee from date of installation.
10. All items of the tender schedule will be governed as per detailed explanatory notes.

## EXPLANATORY NOTE

Item wise scope of works is described as below.

**SPECIAL NOTE** - The items covered under BIS specification shall not be merely "confirm to relevant BIS specification". The item should also have a current and valid approval by the BIS for affixing the relevant "BIS approved marking".

All minor items viz. hardware items, foundation bolts, termination lugs for electrical connections etc. as required and necessary for proper working of the equipment shall be deemed to have been included in the tender, whether such items are specifically mentioned in the tender documents or not.

**Item No. SS01** This item is mainly consisting of Supply, Installation, Testing and Commissioning of Bus Bar Junction Box made up of High Quality Thermoplastic Polycarbonate Enclosure, weather proof, corrosion proof, dust proof, jet water proof, fire retardant and self-extinguishing, halogen and silica free, non-toxic material with internally embedded gasket made of Polyethylene with 200A (20x10 mm CU) Bus Bar, wall mounting bottom cable entry IP 65 Degree of Protection in accordance with IEC 60529, complete in all respect. Supply of fasteners etc required for fixing of the Bus- Bar junction box and connection of cable is contractor's scope of work. Work shall be done as per standard code of practice. Work shall be in conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version) and with latest IE Rules.

**Item No. SS02**-This item work is mainly consisting of Supply, Installation, Testing and Commissioning of sheet steel junction box with bus bar as per size given in schedule. Enclosure shall conform to IS : 8623 (Part I & III)/1993 (latest version).

**Item No. SS-03 (a), (b), to SS-06 (b), (c), (d), (e), (f)** - In this item the price shall cover the Supply & Erection of factory fabricated & wired metal clad dust and vermin proof floor mounting, M.S. Channel Base with bottom cable entries Electrical control panel with incoming and outgoing switching devices TPN MCCB's/ACB and instrument chamber and protection scheme as per respective contract schedule configuration. Complete in all respects. The instrument chamber shall be separate and shall comprise of flush type digital metering system for phase to phase voltage and single phase voltage, current and other parameters (KVA, P.F, KW etc) in each phase for different readings, instrument fuses, current transformer etc. The panel board shall have suitable capacity electrolytic copper bus bars duly insulated with heat shrinkable sleeve and mounted on non-hygroscopic supports such as CMC/BMC support with detachable side covers and shall be suitable for extension on the sides. All bus bars and Cable jumpers (equivalent copper cross sectional area) should be designed for current density not more than 1A/sq mm and all MCCB shall be connected to main busbar through appropriate size solid bus bar strips. The MCCB's shall be complete with suitable cable end boxes, compression glands and indicating lamp on incoming etc. The Job includes the grouting of the distribution panel as per directions of Engineer-in-Charge. All 100A and above capacity MCCB shall be of adjustable type (70%- 100%) and provisioned with Digital Ampere meter and CT. The panel board shall be fabricated with CRCA sheet with a minimum thickness of 1.6mm/2mm. Cubicle type switch board shall be of cat B Only conforming to IS:60947 and IS/ IEC:61439. LT panels shall be designed and manufactured as per Tender schedule configuration, detailed technical specification and exemplary Single Line diagram of LT panels attached. **Both incomer ACB-1 & ACB-2 and Bus Coupler Switchgears shall be electrically interlocked through Aux. contacts and NVR coils of respective ACB/MCCBs and Panel control circuit shall be fed by inbuilt 110Vac control supply power pack.**

Panel must be manufactured from the reputed OEM switchgear manufacturer itself or their Authorized System House, having well established Panel fabrication workshop with in-house nine tank phosphate powder coating facility and routing/acceptance testing facility. Panel manufacturer have to establish manufacturing capability, duly supported by type test report issued by ERDA, CPRI or other Government Laboratory, for LT panel of Amperage capacity higher than largest panel asked in Tender. Contractor has to submit detailed design verification and technical drawing of LT Panel for approval of competent Railway authority.

**Item No. SS07 to SS10**- This item work is mainly consisting of Supply, Installation, Testing and Commissioning of MCCB conforming to IS/IEC: 60898-2; 2003 including fixing of MCB and connection as required.

**Item No. SS11**-This item is required as per latest specification and direction of Site-In-Charge.

**Item No. SS12**- This item work is consisting of pipe earthing as per IS: 3043/1987 and drawing enclosed. Specification of earthing is enclosed along with tender. G.I strip / Flat of size 40mm x 4mm to be use for connection of pole to earth pipe. The earth value should not be more than 5 ohms.

**Item No. SS13**- In this item the price shall cover the cost of supply and, testing, Installation and commissioning of battery charger 230 V AC input, 110volt DC output for 40AH conforming to specification no. TI/SPC/PSI/40-150/CHGR/1210.

**Item No. SS14**-This item is required as per latest specification and direction of Site-In-Charge.

**Item No. SS15-** This item shall cover the price of tubular pole of dimension as given in the schedule and the price of erecting the pole in the cement concrete 1:3:6 foundations. It should be ensured that pole to be erected at site are same as checked at the factory premises.

**Item No. SS16-** This item work will be executed as per direction of site in charge.

**Item No. SS17-** This item shall cover price of supply and erection of 11KV Pin insulator conforming to IS :713/1971 (latest version).

**Item No. SS17 (a) -** This item work will be executed as per direction of site in charge.

**Item No SS18-** This item shall cover price of supply and erection of 11KV Disc insulator conforming to IS :713/1971 (latest version).

**Item No. SS19-** In this item work will be executed as per direction of site in charge. This item is mainly Dismantling of overhead lines, released accessories and handed over to concern SSE. For dismantling and transportation work all material, tools and crane will be arranged by contractor. Only necessary block shall be arranged by Railway if necessary.

**Item No. SS20-** This item shall cover price of supply, erection and testing of outdoor type 11KV Lightning Arrestor conforming to IS 3070-3 (1993) (latest version).

**Item No. SS-21-** This item shall cover price of supply, erection and testing of GOS conforming to IS:9385 Part -II and will be executed as per direction of site in charge.

**Item No. SS22-** In this item work will be executed as per direction of site in charge as per given in schedule confirming to IS:398 Pt-3 latest version.

**Item No. SS23-** In this item shall cover the price of galvanized stay set arrangement with anchor plate, thimble stay clamp complete etc. of dimension as given in the schedule and the price of erecting the stay set in the cement concrete 1:3:6 foundation

**Item No. SS24-** This item work will be executed as per direction of site in charge.

**Item No. SS25-** This item work is consisting of Supply, Fabrication and Erection of angle iron 50x 50 x 6 mm conforming to IS: 808/1989 (Latest Version)/M.S. Plate for making structure/ bracket as supporting arrangement for any equipment complete with clamp, nut bolt etc. complete in all respect as per site requirement as per directive of site supervisor. All the fatteners required for this item shall be in scope of work for contractor.

**Item No. SS26, SS27, SS28 & SS28 (b) –** This item work is consisting of SITC of {25KVA, 100KVA, 250KVA & 500 KVA as per tender NIT schedule}, 11/0.415 KV, 50 HZ, DYN11, ONAN cooled outdoor type Transformer of (Energy efficiency level-3 or above new defined) as per attached IS:1180 (Part I):2014 or latest, with fully filled transformer oil. Tenderer will make arrangement for centrifuging of transformer oil at site before energization of the transformer. Applicable BEE certification to be submitted for approval of make/model and GTP of Transformer. Transformer shall be inspected at manufacturer's premises by the RITES.

**Item No. SS29 & SS30 (a) -** This item work is mainly consisting of Supply, Installation, Testing and Commissioning of HT VCB as per tender NIT schedule and attached CPWD General specifications for electrical works part-IV Sub stations 2013 section 2: High voltage panel. Acceptable Make: L&T, Siemens, Schneider, ABB, Crompton greaves, OREVA, C&S.

**Item No. SS31 (a) & SS32-** In this item work will be executed as per direction of site in charge.

**Item No. SS33-** In this item work is supply and installation of maintenance free earthing as per CEE Specification of maintenance free earthing/July 2009, IS: 3043/1987 and IE Rule 1956 with latest amendments.as per dimension as given in the schedule drawing enclosed.

**Item No. SS34-** In this item as required as per the direction of Site-In-Charge.

**Item No. SS35-** In this item shall cover the price of strengthening of existing pole foundation as per direction of Site-In-charge.

**Item No. SS36-** In this item as required as per the direction of Site-In-Charge.

**Item No. SS37-** In this item required insulating rubber mat complies IS:15652 with amendment 1&2 or latest.

**Item No. SS38-** In this item shall cover price of barbed wire along with fabrication of anti-climbing device.

**Item No. SS39-** In this item double coat primer and painting work will be done as per direction of site in charge confirming to IS:5613 latest versions.

**Item No. SS40-** In this item the price shall cover the cost of supply of electric shock resistant upto 15KV safety shoes conforming to ASTM 2413 & EN ISO 20345. Acceptable make/model CATU MV-137 or equivalent.

**Item No. SS41-** Supply and fixing of shock treatment chart as given in schedule.

**Item No. SS42 -** This item work will be executed as per direction of site in charge.

**Item No. SS43 -** This item work is mainly consisting of Supply, Fixing, Testing and Commissioning of Fire Alarm Sensor/Smoke Detector unit conforming to RDSO's specification no. RDSO/2008/CG-04(Rev.2) Dt. Oct.2012.

**Item No. SS44, SS45 and SS46-** This item work will be executed as per direction of site in charge.

**Item No. SS47, SS48, SS50, SS51, SS52, SS53, SS54 & SS55 -** In this item work will be executed as per direction of site in charge as per given in schedule of work.

**Item No. SS56 -** The rate includes filtering & topping up transformer oil (Rly supplied) through ultra-high vacuum filter machine and filtration to be continued until satisfactory BDV and IR values are achieved. BDV test should be taken before and after filtration.

**Item No. CBL01 (i) & (ii) -** This item work is mainly consisting of Excavation of cable trench of 110 Cm Depth and 40 Cm wide in all kinds of soil and its refilling with the same excavated soft soil. This work shall be done in two parts, first part is excavation of trench and second part refilling of the trench only after laying of DWC pipe in trench.

**Item No. CBL02 -** This item work is consisting of Laying of 3/4 core PVC insulated PVC sheathed/ XLPE insulated cable of grade 1.1KV of size upto 240 Sq. mm in trench. Excavation of trench, laying of cable with sand cushioning & protective covering (brick) and filling of the trench will be done by the contractor as per IS – 1255/1983 (latest version). Excavation of the trench shall be conforming to IS:3764/1992 (Latest Version). Cable termination, Cable marking, Cable tagging will be covered in this item. Cable route marker will be installed at every 70-meter interval and strategic locations of cable route, like Rail Track/Road crossings and Cable route orientation change of more than 30 degrees. (Cable will be supplied by the Railway). In Case multiple single core cable being used for three phase supply or single phase/DC supply distribution in that case concerned single core cables shall be bunched and tied together and shall be considered as single multi core cable.

**Item No. CBL02 (i) -** This item work is consisting of Laying of 3/4 core PVC insulated PVC sheathed/ XLPE insulated cable of grade 1.1KV of size upto 240 Sq. mm in trench. Excavation of trench, laying of cable with sand cushioning & protective covering (brick) and filling of the trench will be done by the contractor as per IS – 1255/1983 (latest version). Excavation of the trench shall be conforming to IS:3764/1992 (Latest Version). Cable termination, Cable marking, Cable tagging will be covered in this item. (Cable will be supplied by the Railway). In Case multiple single core cable being used for three phase supply or single phase/DC supply distribution in that case concerned single core cables shall be bunched and tied together and shall be considered as single multi core cable.

**Item No. CBL03-** This item work is consisting of Laying of additional 4 core PVC insulated PVC sheathed/ XLPE insulated cable of grade 1.1KV of size upto 240 Sq. mm in existing trench in one tier horizontal formation, including excavation & *widening of existing trench by 10cm to accommodate this additional cable*, laying of cable with sand cushioning & protective covering (brick) and filling of the trench will be done by the contractor as per IS – 1255/1983 (latest version). Cable will be supplied by the Railway.

In Case multiple single core cable being used for three phase supply or single phase/DC supply distribution in that case concerned single core cables shall be bunched and tied together and shall be considered as single multi core cable.

Any cable other than first/main cable laid in same trench shall be considered as Additional cable. Work includes widening of cable trench to accommodate laying of additional cables at minimum 4 inch inter cable separation laying of additional cables and brick covering.

**Item No. CBL04-** In this item work the price shall cover Laying per meter length of cable. The price shall also cover cost of holding cleat, MS angle frame with holding MS clamps, MS nut & bolt, paint etc. Laying of the Cable shall be as per IS – 1255/1983 (latest version).

In Case multiple single core cable being used for three phase supply or single phase/DC supply distribution in that case concerned single core cables shall be bunched and tied together and shall be considered as single multi core cable.

**Item No. CBL05 & 06-** In this item work will be executed as per direction of site in charge.



**Item No. CBL07-** In this item the price shall cover the cost of supply of 150 mm dia B-class GI pipe to support the cable at pole/wall/FOB/shelter conforming to IS:1239 with MS flat, bolts, nuts etc. for fixing GI pipe at least 2 places.

**Item No. CBL08 & CBL09-** In this item, aluminum sockets of required size to be provided in cable ends duly crimped at LT panel & Bus-bars etc.

**Item No. CBL10 -** In this work Straight through jointing kit conforming to IP-55 and IEC-61432 as per technical specification attached with all accessories & Plinth.

**Item No. CBL11-** This item is mainly consisting of Supply, Laying and Fixing of M. S. Conduit pipe 40 mm dia 2.0 mm thickness along with clamp and fasteners etc as required complete in all respect. In this item laying of the Metallic conduit concealed/surface type shall be conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version). Metallic Conduit shall confirm to IS: 9537/Part II/1981 (latest version), fitting for metallic conduit shall confirm to IS: 14768/Part-2/2003 (latest version) & accessories shall confirm to relevant IS. Wiring will be done on surface in case of either roofing work is completed before allotment of work or in shed where concealed wiring not possible.

Metallic conduit concealed/surface type shall be conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version). Metallic Conduit shall confirm to IS: 9537/Part II/1981 (latest version), fitting for metallic conduit shall confirm to IS: 14768/Part-2/2003 (latest version) & accessories shall confirm to relevant IS. Wiring will be done on surface in case of either roofing work is completed before allotment of work or in shed where concealed wiring not possible.

**Item No. CBL12-** In this item as required as per the direction of Site-In-Charge.

**Item No. CBL13-** This item work is mainly consisting of Cutting of CC work of Platform/Road for laying of cable and supply of Cement & sand for repairing of the CC work of platform/Road or during wiring work etc as per the directive of site in charge complete in all respect. Laying work of the cable is not included in this item but repairing is mandatory for contractor.

**Item No. CBL14-**In this item work to be done as per the direction of Site-In-Charge.

**Item No. CBL15-**In this item making of Pucca Trench and it's MS Sheet cover shall be done as per parameters mentioned in CA and direction of Site-In-Charge.

**Item No. CBL16-** In this work Straight through jointing kit conforming to IS: 13573/1992 (Latest Version) as per required size of cable and direction of Site-In-charge.

**Item No. CBL17-** This item work is mainly consisting Supply and Fixing of Hot Dip galvanized Perforated type cable tray 300 mm width and 100 mm height and 50 mm width and 50 mm height made with 12 SWG Sheet. The Galvanization of the Cable Tray shall be conforming to IS: 2629/1985 latest version and IS:4759/1996 latest version. All material required for fixing of cable tray i.e hardware, fasteners will be supplied by contractor.

**Item No. CBL18-** In this work HT straight through jointing kit conforming to IS: 13573/1992 (Latest Version) as per required size of cable and direction of Site-In-charge.

**Item No. CBL19 & CBL 20-** Supply and erection of 11kV In-door /outdoor cable end termination jointing kit conforming to IS: 13573/1992 (Latest Version) as per required size of cable and direction of Site-In-charge.

**Item No. CBL21-**In this item shall cover the price of complete track crossing of 0.415 KV by underground cable through trenchless HDD drilling as per attached drawing. Complete material will be supplied by contractor as per below.

Details of Bill of Quantity (supply and erection) for each 0.415 KV double/triple/four line track crossing.

S.N.	Description of Work.	Unit	Qty.
1	Steel tubular pole 10 Mtr. long As per 410 SP-46 (208Kg.)	No.	4
2	LT cable 185 mm sq. 4 core.(for double cable laying)	Mtr.	150
3	Prov. of cable route marker on stone	No.	2
4	Prov. of G.I. pipe 80 mm dia	Mtr.	12
5	Prov. of earthing arrangement complete	No.	2
6	Painting of pole	set	2
7	Prov. of stay set arrangement complete	No.	4
8	Fitment of 50mmx50mmx6mm MS angle iron with prov. of suitable size of hole, for bracing of H-pole etc. Including relevant fixture.	kg	125
9	Prov. of 100mmx50mmx6mm Steel channel	Mtr.	6
10	Prov. of trenchless cable laying in HDPE pipe with including all accessories etc (for double Cable laying)	Mtr.	150

11	Prov. of 1.1kv LT XLPR 4 core cable kits. size 185 sq mm.	No.	4
12	Prov. of pin insulators.	No.	8
13	Dismantling of pole embedded in cement concrete foundation etc.	No.	4
14	Re-sagging& adjacent of 0.4 KV overhead lin (span) on pole.	No.	2
15	Supply and drawing of 8 SWG wire.	Mtr.	100
16	Misc. petty stores(as washer, nut bolts, clamp and use of gas cutter and stacking of release material at each location etc.,	LS	01

**Item No. CBL22-** In this item shall cover the price of complete track crossing of 11KV by underground cable through trenchless HDD drilling as per attached drawing. Complete material will be supplied by contractor as per below

Details of Bill of Quantity (supply and erection) for each 11 KV double/triple/four line track crossing.

S.N.	Description of Work.	Unit	Qty.
1	Steel tubular pole 10 Mtr. long As per 410 SP-46 (208 Kg.)	No.	4
2	11 KV HT cable 240 mm sq. XLPE 3-core.(for double cable laying).	Mtr.	150
3	Prov. of cable route marker on stone	No.	2
4	Prov. of G.I. pipe 150 mm dia	Mtr.	16
5	Prov. of earthing arrangement complete	No.	4
6	Painting of pole	set	2
7	Prov. of stay set arrangement complete	No.	6
8	Prov. of 50mmx50mmx6mm MS angle iron including MS flats, nut bolts etc	kg	200
9	Prov. of 100mmx50mmx6mm Steel channel	Mtr.	6
10	Prov. of trenchless cable laying in HDPE pipe with including all accessories etc.(for double cable laying).	Mtr.	150
11	Prov. of Heat Shrinkable cable jointing kit 240 mm sq.	No.	4
12	Prov. of danger board.	No.	4
13	Prov. of disc insulator.	No.	6
14	Prov. of pin insulator.	No.	6
15	Prov. of barbed wire.	Kg	15
16	Dismantling of pole embedded in cement concrete foundation etc.	No.	4
17	Re-sagging of adjacent 11KV overhead line (span) on pole.	No.	2
18	Supply and drawing of 8 SWG wire.	Mtr.	100
19	Misc. petty stores(as washer, nut bolts, clamp and use of gas cutter and stacking of release material at each location etc.)	LS	01

**Item No. CBL23-** In this item shall cover the price of complete track crossing of 33KV by underground cable through trenchless HDD drilling as per attached drawing. Complete material will be supplied by contractor as per below:

Details of Bill of Quantity (supply and erection) for each 33 KV double/triple/four line track crossing.

S.N.	Description of Work.	Unit	Qty.
1	Steel tubular pole 13Mtr.long As per 410 SP-70 (212 Kg.)	No.	4
2	33 KV HT cable 300 mm sq. XLPE 3-core.(for double cable laying).	Mtr.	150
3	Prov. of cable route marker on stone	No.	2
4	Prov. of G.I. pipe 150 mm dia	Mtr.	16
5	Prov. of earthing arrangement complete	No.	4
6	Painting of pole	set	2
7	Prov. of stay set arrangement complete	No.	6
8	Prov. of 50mmx50mmx6mm MS angle iron including MS flats, nut bolts etc	kg	250
9	Prov. of 125mmx65mmx6mm Steel channel	Mtr.	8
10	Prov. of trenchless cable laying in HDPE pipe with including all accessories etc.(for double cable laying).	Mtr.	120
11	Prov. of Heat Shrinkable cable jointing kit 300 mm sq.	No.	4
12	Prov. of danger board.	No.	2
13	Prov. of barbed wire.	Kg	15
14	Dismantling of pole embedded in cement concrete foundation etc.	No.	4
15	Re-sagging& adjacent of 33KV overhead line (span) on pole.	No.	2
16	Supply and erecting 33 KV Ball & Socket type strain insulator set with 4 disc (1 set of 4 Nos. disc insulators) on pole as per sketch No. DYCEE/CON/BG/GKP/STD/2/1592	No.	06
17	Supply and drawing of 8 SWG wire.	Mtr.	100
18	Misc. petty stores (as washer, nut bolts, clamp and use of gas cutter and stacking of release material at each location etc.)	LS	01

**Item No. CBL24(i)-** This item is mainly consisting of Excavation & trenchless laying of 125 mm outer dia, 8mm thick medium grade Self lubricated HDPE Pipe in HDD (Horizontal Directional Drilling) cable laying under Railway track/bus road etc. at a depth upto 3Mtr. From rail flange/road level and cable erection through the HDPE Pipe (HDPE pipe shall be supplied by Contractor). HDD laying shall not be adopted for multi-core cables less than 70sqmm size.

In Case multiple single core cable being used for three phase supply or single phase/DC supply distribution in that case concerned single core cables shall be bunched and tied together and shall be considered as single multi core cable

For HT Cable: - HDPE Pipe used for Single HT cable per bore

For LT Cable: - (i)- HDPE Pipe used for single/multicore LT cable per bore  $\geq 70\text{sq.mm}$  cable.

(ii)-Same HDPE Pipe & bore shall be used for laying of up to four Nos of single core LT cable of  $\leq 50\text{sq.mm}$  (forming TPN network). Measurement and payment shall be considered as single run of multi-core cable.

**Item No. CBL24(ii)-** This item is mainly consisting of cable laying under Railway track/bus road etc. at a depth of 04mtr - 5 mtr below formation/ ground level and cable erection through Horizontal directional drilling, without HDPE pipe. HDD laying shall not be adopted for multi-core cables less than 70sqmm size.

In Case multiple single core cable being used for three phase supply or single phase/DC supply distribution in that case concerned single core cables shall be bunched and tied together and shall be considered as single multi core cable

For HT Cable: - Single HT cable per bore

For LT Cable: - (i)- single multi-core LT cable per bore  $\geq 70\text{ sq.mm}$  cable.

(iii) same HDD bore shall be used for laying of up to four Nos of single core LT cable of  $\leq 50\text{sq.mm}$  (forming TPN network). Measurement and payment shall be considered as single run of multi-core cable.

**Item No. CBL25-** item is mainly consisting of cable laying under Railway track/bus road etc. at a depth of 1.2m to 1.5 mtr depth below formation/ ground level by Manual Trenchless Excavation/digging of through hole by boogie. Including supply and gapless thorough laying of corrugated DWC pipe (inner dia 70mm/outer dia 90mm) duly jointed with socket/couplers and laying of LT/HT cable through it. Both ends of DWC pile shall be properly sealed with jute and gypsum putty, to avoid choking of pipe bore for future access to cable replacement.

**Item No. ELE01 -** This item work is mainly consisting of Supply, Installation, Testing and Commissioning of 8 way SPN MCB Distribution Board with Metal door phosphatised powder coated and double door type, along with 63 A copper bus-bar for phase & neutral bar duly wired. confirming to IS/IEC: 60898-2; 2003 including fixing of MCB and connection as required. Distribution Board shall IS: 13032/1991 with amendment 1&2 and The degree of protection shall be as per IP 42.

**Item No. ELE02-** This item work is mainly consisting of Supply, Installation, Testing and Commissioning of prewired 4 way TPN Distribution Board with Metal door phosphatised powder coated and double door type, along with 63 Amp MCB, 63 A copper bus-bar for each phase & neutral bar duly wired and provision for 4 Module for incomer, 12 modules for SP outgoing (04Way in each phase), earth bar and Din rail etc. including fixing of MCB and connection as required. Distribution Board shall confirm to IS: 13032/1991. Provision shall be in conformity with IS :732/1989 (Latest version), IS: 4648/1968 (Latest Version). The degree of protection shall be as per IP 42.

**Item No. ELE03-** This item work is mainly consisting of Supply, Installation, Testing and Commissioning of 4-way double door type MCB Distribution Board with Metal door phosphatised powder coated, along with 20A DP MCB-01 Nos and 6-10A SP MCB-04 Nos and bus-bar for phase & neutral bar duly wired and provision for 4 way etc. confirming to IS/IEC: 60898-2; 2003 including fixing of MCB and connection as required. Distribution Board shall IS: 13032/1991. The degree of protection shall be as per IP 42.

**Item No. ELE04-** In this work metal enclosed AC terminal board with 32A modular socket and SP MCB shall confirm to relevant IS:8828-1996 & IS: 13032/1991. These shall be provided in conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version). Including its connection and earthing.

**Item No. ELE05-** In this item meter cum distribution box will be installed at each railway quarters as per schedule specification and schematic drawing attached.

**Item No. ELE06 (i) -** This item work is mainly consisting of Supply, Installation, Testing and Commissioning of TPN Distribution board with Metal door phosphatised powder painted with 63 A four pole MCCB-1 No, 63 A DP MCB- 1 No, 32 A SP- MCB- 2Nos, 16 A SP-MCB- 1 No, 10 A SP-MCB- 1 No, inclusive tinned copper bus-bar for each phase & neutral bar duly wired and provision for 4 Module incomer, 12 modules for SP outgoing (04Way in each phase), earth bar and Din rail etc. including fixing of MCB and connection as required. Distribution Board shall confirm to IS: 13032/1991. Provision shall be in conformity with IS :732/1989 (Latest version), IS: 4648/1968 (Latest Version). The degree of protection shall be as per IP 42.

**Item No. ELE07 (a to g)-** Supply and erection of PVC (Type "C") insulated FR properties multi stranded copper conductor cable shall confirm to IS: 694/1968 (latest version). In addition to T-bend Socket and other joints which is required will be covered in this. Laying of cable shall be conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version).

**Item No. ELE08 (a to e)-** This item cover the cost of GI box and cover plate of proper rating, size & fixing as mentioned and conforming to IS:1293/1988 (latest version) and IS: 9854/1997 (latest version). connecting screen must have made of brass not of steel or iron.

**Item No. ELE09 (a to e)-** This item work is mainly consisting of Supply and Erection of Modular type switches, sockets, bell push and blanking set to fill the blank space. White finished mounting cover plate complete in all respect. The provision of Modular type switches, sockets, bell push and blanking set shall be in conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version).

**Item No. ELE10 & ELE10 (i) -** In this item laying of the PVC conduit pipe 25mm dia, 2 mm thick with all accessories, junction box etc. including chase, Plastering/ clamping etc. concealed/surface type shall be conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version). PVC Conduit shall confirm to IS: 9537/Part III/1983 (latest version), fitting for non-metallic conduit shall confirm to IS: 3419/1989 (latest version) & accessories shall confirm to relevant IS. Wiring will be done on surface in case of either roofing work is completed before allotment of work or in shed where concealed wiring not possible.

**Item No. ELE11 & ELE12-** These items are required as per the direction of Site-In-Charge.

**Item No. ELE13 & ELE14 -** In this item the price shall cover the Supply, Installation, testing, commissioning of indoor type 10/18/20 watt (as applicable to respective schedule) LED Tube light fitting with batten (fixture) complete (as per CEE specification No- CEE/LED Tube light 18-20 watt/16 /Oct.2016) and fitting with all accessories etc. including connection with 2.5Sq mm PVC insulated copper conductor single core cable and its fixing by screw or cable tie as required. Warranty 60 months from date of installation. Accepted make of LED Luminaire fittings: Bajaj, Crompton, Phillips, C&S, Surya, Polycab, Anchor, Havells, Syska, OREVA, WIPRO, Eveready.

**Item No. ELE13a-** In this item the price shall cover Supply & fixing of LED Inverter Batten 20 Watt 6500 degree kelvin Tube light fitting with Li ion battery of minimum 4 Hours backup, operating voltage :140 Volt to 250 volt 50 Hz AC supply, minimum lumen efficacy 100 lumen per watt, Fitting must have auto cut facility after battery fully charged, with supply of flexible wire to connection the nearest ceiling rose. As per explanatory note and direction of site incharge. As per technical specification mentioned in attached RDSO letter No RDSO-EEM0LKO(GUID)/1/2020 dated 27.01.2026 Accepted make of LED Luminaire fittings: Bajaj, Crompton, Phillips, C&S, Surya, Polycab, Anchor, Havells, Syska, OREVA, WIPRO, Eveready.

**Item No. ELE15 (i), ELE17 &ELE18i-** In this item shall cover the Supply, Installation, testing, commissioning of energy efficient Wall fan/Air Circulator/Exhaust Fan shall be installed as suitable place by heavy duty fasteners, fixing clamps & MS Flat clamp size 50x6mm at MS pillar (in shed) as required, in conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version). Wall fan/Air Circulator/Exhaust Fan will be supplied by Contractor. Accepted Make :- Khaitan, Crompton, Usha, Orient, Bajaj, Havells, Polar, GE, Atomberg.

**Item No. ELE16-** This item work is consisting of Supply, Installation, Testing and Commissioning of single phase, AC 230 volts, 50 Hz supply operated 1200 mm sweep BEE 5 Star rated Energy Efficient A.C. Ceiling Fan compatible to electronic speed regulator , complete with down rod, fastening clamps, safety string and accessories, ceiling fan should have Air delivery more than 210 Cum per minute, service value (CMM/W) more than 4.0, speed 350 rpm, conforming to IS:374/1979 (latest Version) with fixing arrangement, connection with PVC insulated flexible copper conductor HRF cable of size 14/0.193 mm including earthing. Fan shall be provided in conformity with IS :732/1989 (Latest version), IS: 4648/1968 (Latest Version) and as per IE rule. Warranty of the Ceiling fan shall be 60 months from the date of installation. Accepted Make :- Khaitan, Crompton, Usha, Orient, Bajaj, Havells, Polar, GE, Atomberg.

**Item No. ELE19-** In this item ceiling rose shall confirm to IS:371/1999 (latest version). Provision of ceiling rose shall be in conformity with IS:732/1989 (Latest version), IS: 4648/1968 (Latest Version).

**Item No. ELE20-** In this item is required as per the direction of Site-In-Charge.

**Item No. ELE21-** In this item price includes supply, Installation, Testing & commissioning of 5 Star rated geyser conforming to IS: 2082/2018 including fixing through all type fittings and connection to supply.

**Item No. ELE22-** In this item apart of supply and fixing of plug and socket included and connection to power supply for heat blower.

**Item No. ELE23-** This item work is mainly consisting of Supply, Installation, Testing and Commissioning of wall/ceiling/recess mounting type LED 2' x 2' square luminaire with CRCA housing, polycarbonate diffuser suitable for 140-270 VAC, 50 Hz supply, minimum system lumen output 3500 lumens, minimum LED efficacy 120 Lumen per watt, minimum PF 0.95, CRI more than 80, Electronic driver efficiency more than 85% , luminaire efficiency minimum 80%, Color Temperature more than

6000K, THD less than 15%, Surge Protection minimum 3 KV Degree of protection IP 20 complete in all respect. Provision of Fittings shall be in conformity with IS:732/1989 (Latest Version), IS:4648/1968 (Latest Version). Supply of Installation Material is in the scope of contractor. Warranty of the fitting shall be 60 months from the date of installation. Accepted make of LED Luminaire fittings: Bajaj, Crompton, Phillips, C&S, Surya, Polycab, Anchor, Havells, Syska, OREVA, WIPRO, Eveready.

**Item No. ELE24-** Supply, Erection, Testing and Commissioning of following Modular type step type Electronic Fan Regulator supply shall confirm to IS: 11037/1984 (Latest Version). Modular type step type electronic Regulator shall be provided in conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version).

**Item No. ELE25, ELE26, ELE27, ELE28, ELE29 & ELE30-** In this item work will be executed as per direction of site in charge.

**Item No. ELE31-** In this item supply, erection, testing & commissioning of Mobile Charging board as per parameters mentioned in CA and direction of Site-In-Charge.

**Item No. ELE32 & ELE33, ELE33(i)** - In this item work will be executed as per direction of site in charge confirming to IS:8448:1989 latest given in schedule .

**Item No. ELE34-** In this item the price shall cover the Supply of Portable/Handy suitable Emergency Light having discharge time 5-6 Hrs., Lithium ion rechargeable battery 3.7 V, 2.5 AH and No of LED should not less than 16 Nos.

**Item No. ELE35& ELE36** -In this item supply, fixing, testing & commissioning of AC Rope Light and driver of rope light shall be as per parameters mentioned in CA and direction of Site-In-Charge. Accepted make of LED rope light: Bajaj, Crompton, Phillips, C&S, Surya, Polycab, Anchor, Havells, Syska, OREVA, WIPRO, Eveready.

**Item No. ELE37** - In this item the price shall cover the Supply, Installation, testing, commissioning of LED Post top/Gate Light 20 W. LEDs Light fittings with all accessories etc. including connection with 2.5Sq mm PVC insulated copper conductor single core cable and its fixing by screw as required. Warranty 60 months from date of installation.

**Item No. ELE38 & 39** -In this item the price shall cover the Supply, Installation, testing, commissioning of LED Down Lighter 10W and LED Mirror Light 10-12W fitting complete (as per CEE specification No- CEE/LED Tube light 18-20 watt/16 /Oct.2016) with all accessories etc. including connection with 2.5Sq mm PVC insulated copper conductor single core cable and its fixing by screw or cable tie as required. Warranty 60 months from date of installation.

**Item No. ELE40-** In this item supply, fixing, testing & commissioning of insect killer as per direction of Site-In-Charge.

**Item No. ELE41-** In this item the price shall cover the Supply, Installation, testing, commissioning of RGB 18 W fountain Light 12V DC housing made of SS grade-304, IP68, providing Silicon Gasket, Step Tempered Glass – 8mm, suitable at water Temperature -20-degree C to 40-degree C, and automatic shutdown at 75-degree C. Warranty 60 months from date of installation.

**Item No. ELE42-** In this item supply & testing of Tubular heater pillar comprising heat setting 2 No., heating element wattage 1500 W and heater pillar should angle adjustment type with moving.

**Item No. ELE43 & ELE44** - In this item the price shall cover the Supply, Installation, testing, commissioning of LED Spot Track light 15W& LED Decorative light 15W. LED Light fittings with all accessories etc. including connection with 2.5Sq mm PVC insulated copper conductor single core cable and its fixing by screw as required. Warranty 60 months from date of installation.

**Item No. ELE45-**In this item supply, fixing, testing & commissioning of Occupancy sensor operating at 230V AC up to 35 feet.

**Item No. ELE46-** In this item oil filled radiator room heater should be 11 wave fin, Environment safe green conducting oil, over heating protection, adjustable thermostat, three power setting, 4 castor wheels with 16 Amp power plug and as per the direction of Site-In-Charge.

**Item No. ELE47 (i)** - In this item the price shall cover the Supply, Installation, testing, commissioning of LED Flood Light fitting. LED Flood Light fittings with all accessories etc. including connection with 2.5Sq mm PVC insulated copper conductor single core cable and its fixing by screw as required. Warranty 60 months from date of installation. Accepted make of LED Luminaire fittings: Bajaj, Crompton, Phillips, C&S, Surya, Polycab, Anchor, Havells, Syska, OREVA, WIPRO, Eveready.

**Item No. ELE48-**In this item is required as per the direction of Site-In-Charge.

**Item No. ELE49 & ELE50** -In this item the price shall cover the Supply, Installation, testing, commissioning of LED 5/6W. 230V Down Lighter and 1 x 1 feet 18W LED Down Lighter fittings with all accessories etc. including connection with 2.5 Sq

mm PVC insulated copper conductor single core cable and its fixing by screw as required. Warranty 60 months from date of installation. Accepted make of LED Luminaire fittings: Bajaj, Crompton, Phillips, C&S, Surya, Polycab, Anchor, Havells, Syska, OREVA, WIPRO, Eveready.

**Item No. ELE51-** In this item the price shall cover the Supply, Installation, testing, commissioning of 1.5 Ton 5 Star High Wall Mounted Split inverter AC with copper coil material (Evaporator & Condenser), copper fin material (Evaporator & Condenser), Eco Friendly refrigerant, 3 Mtr. minimum length of the copper pipe with one-year warranty on machine & 10 year warranty on compressor

**Item No. ELE52, ELE53, ELE54 & ELE55-** In this item is required as per the direction of Site-In-Charge.

**Item No. ELE56-** In this item the price shall cover the Supply, Installation, testing, commissioning of Highway 80W, IP65, CCT-6000K, CRI-90, Efficiency greater than 130 lumen/watt fittings with all accessories etc. including connection with 2.5Sq mm PVC insulated copper conductor single core cable and its fixing by screw as required. Warranty 60 months from date of installation.

**Item No. ELE57-** In this item the price shall cover the Supply, Installation, testing, commissioning of Automatic changeover wall mounted 2 AC digital timer for control of 2 to 6 AC, comprising of contactor, connector, neutral link, LED indicator with wiring. including connection with 2.5Sq mm PVC insulated copper conductor single core cable as required.

**Item No. ELE58-** In this item the price shall cover the Supply, Installation, testing, commissioning of 30 A, 220 Volt AC digital Din Rail timer switch Electrical ON/OFF, 16 ON-OFF programme per day, Manual start ON-OFF daily & cyclic timer switch for electrical appliances.

**Item No. ELE59-** In this item shall cover the Supply, Installation, testing, commissioning of Exhaust Fan shall be installed as suitable place by required size of clamps & screw etc. on Wall as required, in conformity with IS: 2312 (Latest version).

**Item No. ELE62, ELE63 & ELE64 -** In this item is required as per the direction of Site-In-Charge.

**Item No. ELE66 & ELE67 -** In this item is required as per the direction of Site-In-Charge.

**Item No. MIC01-** This item work is mainly consisting of Loading/unloading and Carting of railway supplied Material/Released Material from Railway store depot to construction site and returning of the release material from site to site supervisor's store. This will not be applicable to that items where Supply, Installation, Testing & Commissioning is involved in contractor's scope of work

**Item No. MIC02-** In this item the price shall cover the cost of supply and, testing digital insulation resistance tester as per schedule.

**Item No. MIC03 & MIC04** –This schedule item covers designing of HT/LT distribution system, Submission of design calculation report of various equipment/cable capacity calculation, protection scheme, substation/ panel, cable, BOQ. Detailed layout drawing of Various equipment and cable run layout of for LT supply distribution of complete yard and detailed single line diagram drawing of power supply distribution system and cable route diagram indicating cable's relative alignment wrt various permanent structures (OHE mast, Rail Lines, Road, buildings, platform etc). Material procurement and work execution shall be executed only after approval of respective design and drawings.

**Item No. MIC05-** Preparation and submission of general layout diagram of building and single line power supply diagram for approval and submission of approved drawings and Bill of Quantity (BOQ) schedule in three copies. Material procurement and work execution shall be executed only after approval of respective design and drawings.

**Item No. MIC06 -** In this item the price shall cover the cost of supply and, testing of digital earth resistance tester, as per schedule.

**Item No. MIC07 -** In this item the price shall cover the cost of supply and, testing of, megger, as per schedule.

**Item No. MIC08-**In this item the price shall cover the cost of supply and, testing of Stanley analog electrician tool kit complete as per schedule.

**Item No. MIC09-**In this item supply, fixing, testing & commissioning of 12V, 100AH Solar Tubular battery for solar light as per IS16047.

**Item No. MIC10 -** In this item the price shall cover the cost of Provision of Automatic Infrared Sensor High Jet Speed Fast Dry Hand Dryer, as per schedule of work, as per the direction of Site-In-Charge.

**Item No. MIC22** – In this item supply, testing & commissioning of Mobile Scissor lift manual operated as per the direction of Site-In-Charge.

**Item No. MIC23** – This item includes electrician/lineman along with tool kit and safety item etc. For maintenance of construction site as per existing basic rate of labour and hire charges.

**Item No. MIC24** – In this item is required as per the direction of Site-In-Charge.

**Item No. ODL01 (i)** - This item is mainly consisting of Supply, Installation, Testing and Commissioning of 16 Mt. High Mast system with following works and should be as per technical specification as enclosed and conforming to all relevant IS with latest version: -

(A) Supply, Installation, Testing and Commissioning of 16 Mt. High Mast system totally hot dip galvanized, inside out side in single dip, suitable for wind velocity 50 M/Sec as per IS 875 Part 3. The mast shaft shall be in two sections with one longitudinal seam weld per section and no circumferential weld which can be joined by slip stress method. The system is including head frame, steel wire rope 6 mm dia (7/19 construction) double drum winch, galvanized lantern carriage arrangement suitable for 8 luminaries symmetrically & its CG boxes & lightning finial. The mast shall have integral type high powered reversible power tool for electrical operation of raising and lowering of lantern carriage mounted in the base compartment of high mast with arrangement to couple with the winch & torque limiter. – 1 No.

(B) Supply and Erection of foundation bolt manufactured from special steel along with nuts washers, anchor plates and templates – 1 Set

(C) Supply, Installation, Testing and Commissioning of LED Flood Beam Light fitting 200 Watt, Pressure die cast LM6/LM24 housing, Degree of protection IP65, LED Efficacy minimum 120 lumen per watt, lumens output source minimum 20500 lumen with constant voltage and current Electronic driver suitable for operation on 90-300V, single phase, 50 Hz AC supply, Colour temperature 6500K, CRI more than 85, Driver Surge Protection minimum 4 KV, Driver efficacy minimum 85% Typical view angle 120 degree, minimum PF 0.95 complete - 08 No. Luminaries shall be conforming to IS: 10322/Part 5 : 1987. Warranty of the fitting shall be 60 months from the date of commissioning or 72 months from the date of supply, whichever is earlier.

(D) Supply, Design and Casting of suitable shallow foundation with M 16 for the High Mast considering the safe soil bearing capacity at site as 10 T/Sq. Mtr. at 2 Mtr. depth – 1 No.

(E) Supply, Erection, Testing and Commissioning of twin dome aviation obstruction light LED type with degree of protection IP 65 and conforming ICAO specification/FAA standard. – 1 No.

(F) Supply, Installation, Testing and Commissioning of heavy gauge hot dipped galvanized lighting finals – 1 No.

(G) Supply, Installation, Testing and Commissioning of Feeder Panel comprising main incoming switch MCB's, time switch, contactor, reversing starter and protective system etc. as required for operation of High Mast system. – 1 No.

(H) Supply, Erection, Testing and Commissioning of Maintenance Free Earthing with ground enhancing material conforming to relevant IS – 2 No. (1 for finial of 50 KA & 1 for mast of 5KA)

**Item No. ODL01 (iii)** - In this item the price shall cover the cost of Removing/Dismantling and lowering of 16-Meter-high mast as per schedule of work, as per the direction of Site-In-Charge.

**Item No. ODL01 (iv)** - In this item the price shall cover the cost of Design and casting of suitable foundation with M-20 concrete for the 16-Meter-high mast as per schedule of work, as per the direction of Site-In-Charge.

**Item No. ODL02 & ODL03** -This item is mainly consisting of Supply, Installation and Commissioning of LED street light/Flood Light fitting on pole including connection with Twin core PVC insulated flexible copper conductor cable of suitable size complete in all respect. LED luminaire fitting shall be confirmation to detailed specification mentioned in annexure-X. LED street light /Flood Light fitting warranty 60 months from date of installation.

**Item No. ODL04** -In this item the price shall cover the Supply, Installation, testing, commissioning of LED based rolling in examination light 24 Watt (as per CEE specification No- CEE/LED Tube light 18-20 watt/16 /Oct.2016) with antitheft enclosure. Enclosure including welding etc. and fitting with all accessories etc. having IP-66 protection including connection with required 2 core PVC insulated copper cable and its fixing by screw or cable tie as required. LED Light fitting warranty 60 months from date of installation.

**Item No. ODL05** - In this item the price shall cover the Supply, Installation, testing, commissioning of LED Bollard. LEDs Light fittings with all accessories etc. including connection with 2.5Sq mm PVC insulated copper conductor single core cable and its fixing by screw as required. LED Bollard warranty 60 months from date of installation.

**Item No. ODL06** -In this item the price shall cover the Supply, Installation, testing, commissioning of LED fasad Light 40 W fitting complete (as per CEE specification No- CEE/LED Tube light 18-20 watt/16 /Oct.2016) with all accessories etc. including connection with 2.5Sq mm PVC insulated copper conductor single core cable and its fixing by screw or cable tie as required. Warranty 60 months from date of installation.

**Item No. ODL07 & ODL07 (i)** - This item work is mainly consisting of Supply, Installation, Testing and Commissioning of timer

based semi-automatic light control panel board with Metal door phosphatized powder painted, 16A copper bus-bar for phase & neutral bar etc. confirming to IS/IEC: 60898-2; 2003 including fixing of MCB, contactor, timer and connection as required. The degree of protection shall be as per IP 42.

**Item No. ODL08 & ODL08 (i)** - Supply and erection of 6 mtr long GI Octagonal pole shall be done as per attached specification.

**Item No. ODL09** – In this item shall cover the price of shifting of existing poles including digging and erection by 1:3:6 cement concrete plinth as per direction of Site-In-charge.

**Item No. ODL10** - In this item galvanized hanger will be provided as per direction of site in charge confirming to IS: 2629/1985 latest version and IS:4759/ 1996 latest version.

**Item No. ODL11** - This item is mainly consisting of Supply of Detachable type Single Arm bracket 500 mm long made out of mild steel tubes with cast iron embellishments with suitable sleeve. The brackets are polyurethane primer coated and painted with polyurethane paint. In this item Price includes the cost of installation of single Arm bracket on the pole as per site requirement. Material required for installation shall be supplied by the contractor.

**Item No. ODL12 (i) & ODL13** - In this item size of LED based signage board to be decided as per the direction of Site-In-Charge. It covers Installation by clamp etc. and connection to power supply.

**Item No. ODL14** – In this item is required as per the direction of Site-In-Charge.

**Item No. ODL15** - This item work is mainly consisting of Supply, Installation, Testing and Commissioning of 110V battery charging point with aluminium bus bar of 400A capacity as per size given in schedule. Enclosure shall conform to IS: 8623 (Part I & III)/1993 (latest version). this work includes MS clamps, channel and masonry work etc. for installation.

**Item No. ODL16 & 17** - In this item price shall cover the supply installation and commissioning self-contained drinking water cooler confirming to IS:1475 (Part -1) :2001 latest on required side as per direction of Site-In-Charge. Water cooler will be installed at foundation size 1.4Mx1.2Mx0.45M which is covered in this item including connection of power supply through cable arranged properly.

**Item No. ODL18** - This item is mainly consisting of Dismantling of Damaged Single Rail/tubular pole and handed over to concern SSE. For dismantling and transportation work all material, tools and crane will be arrange by contractor. Only necessary block shall be arrange by Railway if necessary. Any type of other assistance shall not be given by the Railway.

**Item No. ODL19** - In this item work will be executed as per direction of site in charge as per given in schedule.

**Item No. ODL20** – In this item work supply of all in one integrated LED solar street light 20 watt solar PV panel and lithium battery accessories etc. and grouting of solar PV panel will be executed as per direction of site in charge as per given in schedule.

**Item No. ODL21** – In this item work will be executed as per direction of site in charge as per given in schedule.

**Item No. ODL23** - In this item laying of the PVC conduit pipe 25mm dia, 2 mm thick with all accessories, junction box etc. including chase, Plastering/ clamping etc. concealed/surface type shall be conformity with IS: 732/1989 (Latest version), IS: 4648/1968 (Latest Version). PVC Conduit shall confirm to IS:9537/Part III/1983 (latest version), fitting for non-metallic conduit shall confirm to IS: 3419/1989 (latest version) & accessories shall confirm to relevant IS. Wiring will be done on surface in case of either roofing work is completed before allotment of work or in shed where concealed wiring not possible.

**Item No. ODL24 & ODL25** - This item is mainly consisting of Supply, Installation, Testing and Commissioning of CRCA cable Junction Box, weather proof, corrosion proof, dust proof, jet water proof, fire retardant and self-extinguishing, halogen and silica free, non-toxic material with internally embedded gasket made of Polyethylene, bottom cable entry IP 66 Degree of Protection in accordance with IEC 60529, complete in all respect. Supply of fasteners, clamp etc. if required for fixing of the cable junction box and connection of cable is contractor's scope of work. Work shall be done as per standard code of practice. Work shall be in conformity with IS: 732/1989 (Latest version), and with latest IE Rules.

**Item No. ODL26** -This item work is mainly consisting of Supply, Installation, Testing and Commissioning of sheet steel junction box with bus bar as per size given in schedule. Enclosure shall conform to IS: 8623 (Part I & III)/1993 (latest version).

**Item No. ODL27** – Supply, installation, testing and commissioning of this item shall be done as per attached specification.

**Item No. ODL28** -In this item apart of supply fixing of plug and socket included and connection to power supply.



**Item No. ODL30** – In this item Supply, installation, testing and commissioning of 30 KVA DG set, three phase with AMF control panel complete in all respect as per direction of site in-charge.

**Item No. PMP01 & PMP02**- In this item submersible pump set installation conforming to IS: 8034,IS: 9283 complete in all respect as per direction of site incharge.

**Item No. PMP03 to PMP10, PMP13, PMP16 & PMP17** - In this item work will be executed as per direction of site in charge along with installation of pump set given in item no. PMP01&PMP02

**Item No. PMP 11** - In this item submersible pump set installation conforming to IS: 8034,IS: 9283 complete in all respect as per direction of site incharge.

**Item No. PMP12, PMP14, PMP15**- In this item work will be executed as per direction of site in charge along with installation of pump set given in item no. PMP11

**Item No. PMP18 & PMP19**- In this item submersible pump set supply conforming to IS: 8034,IS: 9283 complete in all respect as per direction of site incharge.

## **Quality Assurance Program (QAP) (Annexure:A)**

<b>Section</b>	<b>Schedule item No</b>	<b>Contractor's Scope/Compliance to be enlaced with from Award of LOA</b>	<b>Under Scope of Railway</b>
<b>Group-A:</b> Direct on site/work Quality control	SS11, SS13, SS20, SS23, SS33, CBL10, CBL16,CBL18, CBL19, CBL20, ELE01,ELE02, ELE03, ELE04,ELE06, ELE15,ELE28,ELE32, ELE33,ELE46, ODL17, ODL19,ODL20, ODL21	<p>Contactor and his Engineer shall execute work in confirmation to contract schedule, specification, explanatory notes, approved drawings, as per direction of nominated Railway Engineer.</p> <p>(ii) All raw material/ingredients lots shall be utilized with due approval of Railway site supervisor.</p> <p>(iii) All hidden/sub surface works must get measured verified by Railway site Engineer/ supervisor, before cover-up. Prior written intimation in this regard must be communicate to Railway site Engineer, 07 days in advance</p>	Nominated railway site supervisor shall ensure 100% verification & measurement and site Engineer conduct 20% Quantitative and Quality check.
<b>Group-B:</b> Approval of Representative sample required	SS02, ELE05, ELE13, ELE14, ELE17, ELE21, ELE23, ELE26, ELE27, ELE35, ELE36, ELE38, ELE47, ELE49, ELE50, ELE51, ELE56, ELE59, MIC02, MIC06, MIC07, MIC08, ODL12, ODL13,ODL15	<p>Contactor has to submit one representative sample of material/equipment as per specification and drawings speciation and drawings specified in Tender/Contract agreement. Sample to get approved before bulk fabrication &amp; purchasing</p>	Railway Engineer shall conduct visual dimensional check, Electrical/Physical test check to ensure its suitability and quality as per Contract agreement and applicable standards.
<b>Group-C:</b> Consignee Inspection at manufacturer premises	SS03, SS04, SS05, SS06, SS15, SS26, SS30, ODL02, ODL04, ODL05, ODL	<p>(i) Contactor has to submit detailed drawings, GTP, for approval of Railway Engineer.</p> <p>(ii) Contractor shall also submit, equipment manufacture/fabrication infrastructure, testing facility, complete Type test report from CPRI, ERDA/NABL approved Lab for manufacture of equivalent or higher capacity Product/ equipment manufacturing</p>	Nominate Railway Engineer/ Supervisor shall conduct stage inspection/Final inspection of equipment

<b>Group D:</b> Material to be RITES inspected subjected to minimum item value of 05 lakh	SS27, SS28, SS29, CBL01-(i) &(ii), CBL17, ELE16, ODL01, ODL03, ODL08, ODL16	Contractor have to apply RITES inspection call for schedule items and communicate the date and venue of inspection to Railway, for advise to RITES inspection.	Railway Engineer shall advise RITES for inspection and RITES shall inspect material as per approved GTP, QAP, TC/GC of OEM and Type test, Acceptance test as applicable.
<b>Group E:</b> Prior approval of make/model required	All other schedule/ Non schedule items, excluding above group A,B,C,D items	Contactor has to submit each item's make/model, detailed technical specification, and product catalogue issued by OEM, for approval of Railway Engineer.	(i) Within 07 days, Railway Site engineer shall communicate approval/rejection of the proposed items, with reason. (ii) Once approved, Railway Engineer/supervisor shall ensure that same make/model; specification material is used, until any change in approval.

All contract schedules /non schedules item's work shall be executed with material/equipment approved as above and in confirmation to contract schedule, specification, explanatory notes, approved drawings, as per direction of nominated Railway Engineer/ Site supervisor.