

SPECIAL CONDITIONS OF CONTRACT (ELECTRICAL)

1.SCOPE OF WORK:

2.GENERAL:

Conditions covering the contract:

The special conditions of contract contained herein shall supplement to the “General conditions of contract”. In the event of any conflict or inconsistency between them, the special conditions of contract contained herewith shall prevail. The technical specifications of contract as incorporated in this contract document and tender schedule will form the basis for executing the work. The standard general conditions of the contract for **Civil Engineering works** of South Western Railway amended up to date will form part of the contract agreement and for all purposes be treated as if the same have been incorporated herein. The contractor can refer the copy of standard General conditions of contract for Civil Engineering works from Dy. Chief engineer works, Construction unit, Cantonment by paying necessary charges. If there are varying or conflicting provisions in the documents forming part of the contract, the Railway Engineer shall be the deciding authority with regard to the intentions of the provisions and his decision shall be final and binding on the contractor. If the contractor is not satisfied with the decisions of the Engineer at site in respect of the rates for the execution of items of works not included in the accepted schedule of rates of the contract, he may appeal to the Deputy Chief Electrical Engineer within 30 days of getting the decision of the Engineer, supported by the analysis of the rates claimed. The Chief Electrical Engineer / Deputy Chief Electrical Engineer's decision after hearing both the parties in the matter is final and binding on the contractor and the Railways.

This is a works contract and this Special condition should be read in conjunction with General Condition of Contract 2022 and Engineering Special conditions (SCC-2025) with up-to-date correction slip.

Safety Provision of carrying out works:

- i) The contractor shall take all precautionary measures in order to ensure protection of his own personnel moving about or working on the Railway premises and shall have to conform to the rules and regulations of the South Western Railway.
- ii) The works must be carried out carefully in such a way that they do not hinder the railways operation except as agreed to by the Railways.
- iii) The contractors' employees and workers shall not for any reason operate any appliances of Railway installations concerning the safety of train movements, but they should notify to the appropriate railway staff whenever necessary, who will then take necessary steps.

- iv) The Contractor shall abide by the Indian Electricity Act and the Indian Electricity Rules as amended from time to time.
- v) If at any time, the Indian Railways find the safety arrangements inadequate or insufficient, the contractor shall take immediate corrective action as directed by Railway representative at site.
- vi) Necessary personal safety equipment's as considered adequate by the Engineer in charge shall be kept available for the use of the persons employed at the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment's by those concerned.
- vii) No Electrical apparatus which is liable to be source of danger, shall remain electrically charged.

3.STEPS TO BE TAKEN TO AVOID DAMAGES TO RAILWAY INSTALLATIONS.

The contractor shall see that no damages are caused to railway signaling and transmission, electrical cables, wires, station installations, communication lines, electric devices, trains of any kind fencing as well as any rolling stock and in general to all railway installations and equipment's. If any damage is caused to or suffered by any rolling stock and in general to all railway installations and equipment's or any railway property or by the consequences of the acts of unlawful omission of the contractor, its employees and workmen or other person connected with it, necessary repairs or replacements shall be effected by the railways at the risk and cost of the contractor. The expenses shall be recovered from the money due and payable to the contractor or by other appropriate processes.

4. ATTENDING TO DEFECTS:

The contractor shall rectify defects that may arise in the work executed for a period of 12 months after completion of the work, such defects being due to bad workmanship on the part of the contractor. Should any dispute arise as to the correctness of the defect pointed out, the engineer's decision in this regard is final and binding.

5. INSURANCE:

The contractor shall take out and keep in force a policy or policies of insurance against all liabilities of the contractor or the railway at common law or under any statute in respect of accident to persons who shall be employed by the contractor, in or about the site or the contractor's Office for the purpose of carrying out the contract works on the site. The contractor shall take out and keep in force a policy or policies of insurance against all recognized risks to their office accommodation and storage for which he is liable. Such insurance shall be in all respects be subject to the approval of the Railway.

6. INSTRUCTIONS:

All the work should be carried out in the presence of authorized Railway representative. All loads, lifts and labour charges are to be borne by the contractor.

No pass facility will be made available to the contractor/his representative or for his laborer's.

7. SUPPLY OF ELECTRIC POWER:

The Railway shall provide temporary power supply for minor execution works wherever electric supply is available. The charges for electric consumption at site in connection with the erection have to be borne by the contractor at the rate specified by the railways.

8. INTERPRETATION OF THE CONDITIONS:

With his tender the tenderer shall submit a note stating his interpretation of the specification wherever he desired to clarify and aspects of his offer. In respect of matters or issues not covered by this note it shall be assumed that the quotation confirms to the specification laid down in the tender documents. The interpretation of the Railway where such interpretation is found necessary, shall be final and binding on the contractor.

9. QUALITY OF MATERIALS AND QUALITY CONTROL:

All the materials used in the execution of the contract shall conform to the specification stipulated and shall be of the best quality and have the class most suited for the purpose specified. Components, assemblies and equipment's to be obtained from sub-contractors should be from proven source, chosen from the approved makes only indicated in these tender documents at Technical Specification. The work shall also conform to the following Acts, Rules and Standard Code of Practices: -

- i) Indian Factories Act.
- ii) Indian Explosive Act.
- iii) Indian Electricity Rules.

All the equipment's/materials covered by this contract shall comply with the Technical Specifications enclosed of Tender Documents and relevant I.S.S. and B.S.S. as referred to therein in all respects and shall be adequate to perform the duties for which they are designed.

All erection work shall be of the best quality to the entire satisfaction of the Railways. The contractor shall ensure that the equipment's and services under the scope of this contract, whether manufactured or performed within the contractor's premises or at his sub-ordinate's premises or at the Railway's site or at any other place are strictly in accordance with the provisions of this contract. For this purpose, the contractor shall adopt necessary quality assurance programmed to control such activities at all stages.

10. ELECTRICAL LICENSE:

The works shall be carried out only by a Tenderer/Contractor/Person authorized by contractor holding a **valid CLASS I ELECTRICAL LICENSE** issued by the any state Government for carrying out the installation work of the voltage classes involved, under the direct supervision of the persons holding valid certificates of competency for the same voltage classes issued or recognized by the State Government. The

tenderer should furnish with his tender offer the particulars of the license held by him. The successful tenderer shall furnish the names and particulars of certificates of competency of the supervisors and workmen to be engaged for carrying out this works.

11. INSPECTION OF MATERIALS:

- 1.The Inspection Officer(s) for the Railways shall be nominated by not less than JA Grade officer.
2. For any electrical single item costing more than Rs.5.0 lakhs shall be inspected through RITES/RDSO, in case of Electrical HT/LT UG cables/conductors/ wires (including group of wires) each schedule item value exceeds Rs.5.0 lakhs, items shall be inspected by RITES/RDSO and payment to all charges that arise in connection with inspection by RITES/RDSO shall be borne by the contractor.
- 3.All the documents necessary for inspection by RITES/RDSO shall be prepared by the successful tenderer and got signed by the competent authority.
- 4.All the equipment's /apparatus /Gadgets required for inspection of materials by Railway officials at manufacturers unit or work site shall be arranged by the contractor free of cost.

5. Items/Materials for which TAQC inspection is warranted by ESCOM/KPTCL authorities and handed over to the ESCOM/KPTCL, utilities does not require RITES inspection irrespective of the value of item.

6. However, the following items are exempted form RITES Inspection irrespective of their value in contract and shall be inspected by the consignee only.

S. No	Description	Items
1	Any Electrical Items which are procured as per ESCOM/KPTCL Specification from ESCOM/KPTCL approved vendors/manufacturers	ESCOM Items: RCC DP Structure for Transformer, DP Structure for Line, RCC HT/LT/Spun/Strut Poles, Stay Set, Guy Ropes, Pin/Disc/Shackle Insulators, GOS, DOLO Fuse, MOS LA, HT/LT Cross Arms, Termination kits and jointing kits, PVC/GI Pipes for cable rising, ACSR Conductors, GI Strips/Wires for earthing, Lattice Towers, Foundation Items etc. KPTCL Items: Towers, Nuts and Bolts, Insulators, Steel reinforcement, Foundation Items, ACSR Conductors, GI Conductor, Tension Clamps, Vibration Damper, Repair Sleeves, Anti climbing device, Earthing Wires/Strips, any other item required for tower erection.
2	Material required for electrification of buildings	Point Wiring Items including switches, ceiling rose, PVC Round block/plates, Gang boxes(Metal/PVC), ferules, plug points and Tops, Fan regulators, Bulb holders, Switches and blinds, all sizes of conduit (PVC/Metal) pipes including casing and capping, calling bells, MCB Distribution boards, MCB's, RCCB's, Wires/Group

		of wires of different sizes etc.,
3	Any material which are fabricated at site as per site condition	Wire Mesh made of GI Wires, MS Angle Structures, Arm Brackets, Clamps, Reducers, Fencing materials etc.

12. FACILITIES FOR TEST AND EXAMINATION:

The contractor shall provide, without any extra cost, to the Railway all materials, equipment's, tools, labors and maintenance of every kind with necessary testing facilities which the Railway or the Inspecting Officer may consider necessary for any test and examination to be made at the Contractor's or sub-contractor's premises and at site and shall pay all cost attended thereon.

13. CERTIFICATE OF INSPECTION AND APPROVAL:

The Inspecting Officer or his authorized representative shall have, at all reasonable times, access to the contractor's premises and shall have power to-

- 1.1. Certify before any equipment is submitted for inspection that it cannot be in accordance with the contract owing to unsatisfactory method employed;
- 1.2. Reject any part of the work submitted by the contractor as not being in accordance with the contract;
- 1.3. Reject the whole of the work including equipment tendered for inspection if, after the inspection of such portion as he may, in his discretion, think fit, he is satisfied that the same is unsatisfactory;
- 1.4. Mark the rejected equipment with a rejection mark so that the same may be easily identified;
- 1.5. Re-inspect at the time of erection, at site, any equipment both previously inspected and approved by the Inspecting Officer at the Contractor's or sub-contractor's premises. Notwithstanding any approval given earlier, the Contractor shall make good such rejections made, based on such re-inspection at site to the satisfaction of the Engineer.

The decision of the Inspecting Officer in regard to the acceptance or rejection of the equipment/work shall be final and is binding on the contractor.

14. CONSEQUENCE OF REJECTION:

On the equipment/work being rejected by the Inspecting Officer or the Railway at destination, the contractor shall replace such rejected equipment/portion of the work forthwith but, in any event, not later than a period of 4(four) weeks in the case of minor equipment's and 8(eight) weeks in the case of major equipment's from the date of rejection. The contractor shall bear all the cost of such replacement including freight etc., but without being entitled to any extra time on this account. The decision as to whether the equipment is to be classified as minor or major for the purpose of

this clause shall be that of the Engineer and it shall not be called into question on any account.

The contractor shall, if the equipment's(s)/work are rejected at the destination by the consignee be liable, in addition to his other liabilities including refund or price recoverable in respect of the equipment/work so rejected to reimburse to the Railway, the freight.

The contractor shall provide without any extra charges, all materials equipment's, tools and labour of every kind for which the Rly nominee may consider necessary for any test and examinations which they shall require to be made on the contractors' premises and shall pay all costs attendant thereupon. The contractor shall also provide and deliver free of charge at such place as the Rly nominee may nominate, such materials such as they may require for the independent testing organization.

No stores will be considered ready for delivery until the inspecting officer nominated certifies in writing that they have been inspected and approved by them.

15. WARRANTY:

The contractor shall warrant that everything to be executed under this contract shall be new and free from all defects and faults in materials, design, workmanship and manufacture and shall be of the highest grade and consistent with the established and accepted standards for work of the type contracted for and in full conformity with technical specifications, drawings and other contract stipulations.

This warranty shall survive inspection of, payment for an acceptance of the work but shall expire 12 (Twelve) months from the date of acceptance of the completed work by the Railway except in respect of complaints, defects and/or claims notified to the contractor before the expiry of the warranty period.

Any approval or acceptance by the Railway at any stage of the work contracted for, shall not, in any way, limit the contractor's liability under this warranty.

The contractor's liability in respect of any complaint defect or claim shall limited to the execution, installation and erection of replacement parts free of any charges, or the repair of defective parts only to the extent that such replacement or repairs are attributable to or arise from faulty workmanship or design or material in the manufacture of the equipment/stores and/or negligence in any manner and also in the event of failure of the equipment to perform as intended.

The contractor shall, if a required, replace, repair, execute and/or install the goods or such portion thereof as is rejected by the Railway, the contractor shall pay to the Railway the value thereof and such other expenditure and damage as may arise by reason of the breach of the conditions herein specified.

All replacement and repairs that the Railway shall call upon the contractor to deliver or perform under this warranty shall be delivered and performed by the contractor within a period of 21 (Twenty-one) days promptly from the date of receipt of advice to that effect from the Engineer. In case where such replacement, repair, execution and/or installation takes place during the warranty period, the provision of this

warranty clause shall apply to that portion to replace or renew until the expiration of 12 (Twelve) months from the date of such replacement, repair, execution and/or installation. This extended period shall hereinafter be referred to as "EXTENDED WARRANTY PERIOD".

If the contractor so desire, the replaced parts can be taken over by him or his representative for disposal as he deems fit within a period of 3 (Three) months from the date of replacement of goods/parts. At the expiry of this period, no claim, whatsoever shall lie on the Railway.

Moreover, the Railway may, at its discretion recover the ground rent for the goods/parts which have been rejected during the warranty period for the specified period of 3 (Three) month, if the rejected materials are not taken over within that period 3 (Three) months, by the contractor or his representative.

The warranty herein contained shall not apply to any material which shall have been repaired or altered by the Railway or on its behalf in any way without the consent of the contractor so as to affect its strength, performance or reliability or to any defects to any part due to misuse, negligence or accident and to items of normal wear and tear to be specifically mentioned by the contractor in his offer and got accepted by the Railway. The decision of the Railway in regard to contractor's liability and the money if any payable, under this warranty shall be final and conclusive.

Any Special conditions stated by the Tenderer in the covering letter submitted along with the tender shall be deemed to be part of the Contract to such extent only as have been explicitly accepted by the Railway.

Whenever warranty specifies for any individual item more than one-year (e. g. 5 years for LED light fittings ..etc..) for such items for fulfillment of warranty obligation an amount equivalent to 5% of value of the items shall be retained from the security deposit amount by Railway and the same amount will be returned back to contractor after successful completion of extended warranty period, on production of compliance certificate field SSE for satisfactory guarantee obligation by contractor

16. RAILWAY SHALL PROVIDE FOLLOWING:

Location for execution of work, materials if supplied by Railways etc. as given in the Schedules.

17. QUANTUM OF WORK, SPARES & OPTIONAL ITEMS:

The schedule of work mentions the quantities of various items required to be installed and commissioned. It should be clearly noted that the item and the quantities mentioned have been worked out by railways as per their requirement. However, if the tenderer feels that the desired features cannot be achieved or some of the essential features cannot be obtained through the quantities asked in the schedule, then quantity as required for the work in the opinion of the tenderer shall be quoted. In such cases, tender shall give, full justification for such variation, clearly mentioning

the consequences of procuring the quantities suggested by the contractor instead of quantities indicated in schedule.

Quotations for any other item necessary for satisfactory functioning of the tendered equipment in accordance with the objective of requirement shall be quoted separately, along with detail justification of need of the item to achieve end objective. Costs for optional items shall be quoted separately wherever necessary.

18. STORES TO BE SUPPLIED BY CONTRACTOR:

All materials mentioned in the schedule of material and works required for the execution of the contract, shall be arranged and supplied by the Contractor as to realize the end objective.

The material mentioned in the schedule shall be supplied in the stores of the SSE/CN/BNC or SSE/CN/UBL as applicable, Store depot subsequently it will become Railway property. The material required for work at site will be issued to the contractor by store in charge at Bangalore/ Hubli as applicable. The transportation of material from stores to site of work will be the responsibility of contractor.

The contractor will be responsible for the safety of the material at site from the date of issue of the material to till the date of commissioning of the system.

The supply of materials as per actual site requirement and the principle of JIT or “Just in time” needs to be followed to the extent possible to prevent unnecessary blockage of capital as well as to avoid blocking of space and possibility of damaged to the material due to prolonged storage.

Delivery of material should be planned in coordination with the contractor duly ensuring just in time delivery to the extent possible so that there is minimum time gap between receipt of material and its utilization for the work for which it is procured.

After receipt of the materials, it has to be taken into custody of Railways and never kept in the custody of the contractor. If there are compelling reasons to Hand over the materials to the contractor, it should be done only after taking approval of the competent authority who in turn has to ensure that financial securities of the value of the cost of the materials and **indemnity bonds** have been furnished by the contractor.

Store in charge will keep record of material on day-to-day basis in summarized form and shall convey monthly position of store (supplied by and issued to the contractor) to the engineer in-charge of the work.

All materials, supposed to be supplied by the contractor for the work, should be got approved in terms of Make and Quantity by the Engineer-in-charge before actually used for the work at site.

As far as possible all materials to be supplied and necessary entries shall be made and routed through Railway store only, in such circumstances where due to site feasibility and work urgency if materials required to be supplied at work site, then it is the responsibility of concerned SSE field in charge to comply the following procedures

a. To certify that materials received are in good condition and the Material make and technical specification are in line with contract agreement. Necessary Test certificates and Invoices are collected and subsequently be submitted to office.

b. As soon as material received, the details to be submitted to SSE/CN/ Stores with all relevant documents and ensure that necessary entries are made in store records for regularizing the documents as this is required to prepare material statement for processing the bill.

19. WORK SPECIFIC DRAWINGS:

This will constitute

- i) Wiring diagram
- ii) Test results of each item.

The documents, like system of working, block diagram/ circuit diagram, and other related drawings required for the work, should be supplied by the contractor.

Equipment's and materials should be from reputed and approved makes with Test Certificate from recognized Laboratory/manufacturer to be furnished.

The Transport arrangement of all the contractor's and Railway's materials to the site to be done by the contractor. Transportation for any new items operated, the contractor shall be arranged at his own cost.

Works of State Electricity authorities being carried out by Railways on self-execution basis.

The work shall be guaranteed for a period of 12 months from the date of energization.

Any damages occurred due to the Electrical works carried out by the contractor to the Civil Engineering works should be finished to its original position with contractor's materials. Since this is works contract all the materials required for the execution of work shall be supplied by the tenderer unless otherwise specified.

All the tools required to carry out the work including minor fabrication and labour required for execution shall be arranged by the contractor.

All materials, supposed to be supplied by the contractor for the work, should be got approved by the Engineer-in-charge before actually used for the work at site.

It is the responsibility of the contractor for proper handing over of released materials to State Authorities. For this purpose, it is suggested that a joint inspection with the State Authorities officials concerned shall be carried out, the items and quantities of materials to be released are assessed properly before the work is started.

It is the responsibility of the contractor to ensure proper liaison and co-ordination with State Authorities for availing line clearance, joint inspection, testing & commissioning energization of in to the full satisfaction of State Authorities and handing over, and Railway's intervention should not be sought for any of the above.

On completion of the work the contractor shall submit 3 copies of "As Erected" Auto cad drawings in A3 size (completion drawings) along with editable soft copy in rewritable pen drive duly indicating all the details clearly such as cable layout, location of Electrical equipment, accessories size and make of cables, cable route indicators etc., in line with the tender schedule. The drawings shall be duly signed by the contractor.

Accidents, if any, to his vehicles or to persons would be the responsibility of the contractor and Railway will not be responsible for any damage or compensation thereof.

The contractor is deemed to adhere to the Workmen's Compensation Act, Railway Act, State Motor Vehicles Act, Railway Act, 1989, etc. and any infringement to the same should be at his own risk and cost.

The contractor shall coordinate for payment of "Supervision Charges" to electricity authority and other charges payable to individual Govt. agencies as per the prevailing government rules, such payment shall be paid by Railways.

The work shall be conforming to the following Acts/Rules:

Indian Factories Act.

Indian Electricity Rules.

Indian Electricity Act.

National Building Code-1988.

Various IS specifications specified for each item/work.

General specification for Electric wiring of Railway Building vide Electrical works contract regulations for tenders and contracts 2002 issued by Southern Railway. Tender desiring to peruse the documents may do so in the office of Dy. Chief Electrical Engineer, No. 18, Miller Road, Bangalore Cantonment - 560 046 during working hours.

The drawings referred to in the list of plans, if any, are intended only to give a rough and general idea of the location and rough details of work to be done. No claim whatsoever will be admissible in respect of any alteration/addition/deletion/change in the type of works/change in locations.

The quantities of various items given in the Schedule for the works to be executed are only approximate and are only for the guidance of the tenderer/contractor. As far as possible, they have been assessed correctly but are likely to vary during the execution of the work. The contractor's attention is drawn to clause 42 of the General Conditions of Contract dealing with variation in quantities.

When the quantity of any item of the work to be executed is likely to increase in excess of 25% of the original agreement quantity, the contractor should notify the Engineer-in-charge at least **THIRTY DAYS** before such necessity arises.

In the event of any reduction in the quantities to be executed for any reason whatsoever, the contractor shall not be entitled for any compensation but shall be paid only for the actual quantity of work done, at the agreed rates.

20. EXECUTION OF WORK:

All the work shall be executed in strict conformity to the provisions of the contract document with such explanatory detailed drawings, specifications and instructions as may be approved from time to time by the Railways, based on detailed design and engineering carried out by the contractor in line with requirements as per contract document. The contractor shall be responsible for ensuring that the work throughout is executed in the most substantial, proper and workmanlike manner with the quality of material and workmanship in strict accordance with the specifications and as per sound industrial practices and to the entire satisfaction of the Railways.

21. PROGRESS REPORTING:

The contractor shall submit the periodic progress reports at regular intervals regarding the state and progress of work to the Railways. The details and Performance of the report will mutually be agreed after award of the contract. Such reports shall be for daily manpower, equipment and plant development, weekly work progress and monthly progress review reports. All actions as directed by Railways, pursuant to such reports shall be promptly attended to by Contractor.

22. PART COMMISSIONING:

If the works are not completed as per the program of work and there is deviation from the milestones to be achieved Railways will be free to make use of the partially commissioned work. Making such use of partially commissioned work will not be deemed as provisional acceptance from the Railways.

23. MEASUREMENT OF WORKS:

Payments for the works shall be made in accordance with approved designs and drawings and measured in relevant units. The measurements will be made generally in accordance with standard engineering practice and in conformity with the General Condition of Contract.

24. MEANING AND INTERPRETATION BY RAILWAYS TO BE FINAL:

All measurement, method of measurement, meaning and intent of specifications and interpretation of Special Conditions of Contract, given and made by the Purchaser or by the Purchaser Engineer shall be final and binding and shall be considered “excepted matters” in terms of conditions laid down in the General Conditions of Contract.

25. TERMS OF PAYMENT:

1. Subject to any deductions or recovery which the Railway may be entitled to make under contract, the Contractor will be entitled to be paid from time to time by way of on account payment for supply of goods and progress payment for works as in the opinion of the Engineer he has executed in terms of contract.
2. Prior approval for Make of material to be taken before placing the order for various scheduled items.
3. “On Account Payment” will be made for supply of equipment, materials indicated in the supply Schedule on receipt of material at Consignee’s depot. On Account payments made will subsequently be adjusted against payments due on Provisional Acceptance or Final Acceptance.
 - i) For only Supply items 70% payment will be made of each consignment on production of the following documents.

- a. On receipt of materials at Railway Store Consignee's depot duly accepted by the Purchaser's Engineer.
- b. Original Inspection certificate issued by Inspecting Officials.
- c. Copy of Invoice submitted and certified by the site Engineer in charge
- d. Delivery Challan for supply of materials to railways by contractors
- e. A certificate should be submitted by the contractor that the materials supplied are as per the contract and the amount claimed in the contract bill is correct as per terms of the contract

ii) 30% (Thirty percent) payment for the value of goods supplied {for Sl No 3 (i) above } shall be paid after the successful completion of erection and commissioning of the relevant item of work to the satisfaction of Engineer

iii) ONA payment of 70% of agreement value of the item shall be made upon supply of material for items those combined with supply, erection and commissioning subject to the following:

Items claimed for 70% ONA payment to be supplied only after readiness of site and with submission of quantity assessment statement jointly signed by Engineer In charge and the contractor for the particular site and duly approved by Dy.CEE/CN/BNC or his representative. Remaining 30% payment shall be made after the successful completion of erection and commissioning of the relevant item of work to the satisfaction of Engineer

iv) Items those combined with supply, erection and commissioning and for which quantity assessment statement jointly signed by Engineer In charge and the contractor for the particular site is not approved by Dy.CEE/CN/BNC for 70% ONA payment, 100% payment only will be made after the successful supply, erection and commissioning of the relevant items of work to the satisfaction of engineer.

4. The security deposit, however, shall be released only after the maintenance period and "No Claim Certificate" should be submitted after the maintenance period by the contractor

26. DEDUCTION FROM ON ACCOUNT PAYMENT BILLS:

All costs, damages or expenses, which Railways may have paid or incurred, which under the provisions of contract are Contractor's obligations will be deducted by Railways from progress payment Bills as and when it is understood that such an expense has been incurred or paid for.

All such claims of Railways shall, however, be duly supported by appropriate and certified vouchers, receipts or explanations as are available to enable the Contractor to identify such claims.

27. TAXES:

Deduction of Income Tax at source as per provisions of Finance Act and Income tax in force shall be made from the Contractor and the amount so deducted will be credited to the central Government. Settlement of Income Tax should be made with Income Tax authorities. Wherever the law makes it statutory for the Purchaser to

deduct on amount towards Tax, the same will be deducted and remitted to the concerned authority.

The contractor and all personnel employed by him shall pay such taxes like Income Tax as are payable under statutory laws of India and the Purchaser will not accept any liability for the same.

The tenderer shall be required to pay Cess at 1% of cost of construction work which will be Deducted from each bill under the Building & Other Construction Workers Cess Act 1996. (Ref: Railway Board Letter No. 2008 /CE-I / CT / 6 dated. 09-08-2019).

28. RECOVERY OF CONSERVANCY CHARGES:

As per the Railway board 's instruction, the conservancy charges to be recovered from the contractor bills as per the prescribed rates as mentioned below:

	DESCRIPTION	Average No. of labourer / Work-man employed per day	conservancy cess charges to be recovered (per Month)
	Railway contractors:		
A	Engg: works contractors (Engg, Electrical, Mechanical, Signal etc).	01 to 05 06 to10	Rs. 159/- Rs. 312/-
B	General Goods handling contractors including	11 to 25 26 to 50	Rs. 785/- Rs.1143/-
C	Contractors awarded by store dept. Coal handling Ash pit cleaning contractors	51 to 100 101 to 200 201 to 300 301 to 750	Rs.1534/- Rs. 1926/- Rs. 2318/- Rs. 2676/-
D	Rly Siding used by the contractors	751 to 1500 1501 to 3000	Rs. 5382/- Rs.10768/-
E	Contractors supplying water to engines	3001 and above	Rs. 21508/-

29. LIASONING/PAYMENT TO THE STATUTORY AUTHORITIES:

The Contractor shall liaison with ESCOM/ KPTCL/ PGCL, State/Central Government and local bodies till completion of works in all respect. It is the responsibility of the contractor to ensure proper liaison and co-ordination with State Authorities for availing line clearance, joint inspection, testing & commissioning energization of in to the full satisfaction of State Authorities and handing over, and Railways intervention should not be sought for any of the above.

1. **ROW issues if any shall be sorted out by the contractor.**
2. It is the responsibility of the Successful contractor to liaison with EB authorities for arranging joint inspections along with Railway supervisor as and when required and to ensure for early preparation of estimations, obtaining approvals at various stages, getting sanctioning of estimations and supervision charges intimations (Modification work of HT/LT power line crossings, Additional load/ Availing new power supply for railway installations)
3. In connection with the work Contractors has to liaison with EB authorities / statutory authorities in getting the intimations towards the payment of the following and submit the same to this office in time to facilitate for processing the payment by Railway.
 - a. Availing of new supply/service connection charges/deposit (3 MMD).
 - b. Supervision charges (10% of estimate or latest as per EB guidelines) based on sanctioned estimate of ESCOM / KPTCL / PGCL authorities along with copy of sanctioned estimate.
 - c. The contractor shall coordinate for payment of "Supervision Charges" to electricity authority and other charges payable to individual Govt. agencies as per the prevailing government rules, such payment shall be paid by Railways.
4. All the other incidental charges payable to ESCOM / KPTCL/ PGCL, Electrical Inspectorate charges (State Govt.), charges for stamp duties/ agreements, inspection charges, TAQC/ MR charges as applicable, statutory amount to remit for approval from local bodies etc. to be borne by contractor.
5. Execution of agreement with Railways and EB authorities submitting Relevant documents for EIG Railways approval as per list mentioned above.

It is the responsibility of the contractor for proper handing over of released materials to State Authorities. For this purpose, it is suggested that a joint inspection with the State Authorities officials concerned shall be carried out, the items and quantities of materials to be released are assessed properly before the work is started.

30. ELECTRICAL SAFETY:

- 1) The work is to be done in compliance with the National Electrical Code - 2011 or the latest issued by BIS.
- 2) The work done to comply with the provision of CEA (Measures relating to safety and electric supply) regulation, 2010.
- 3) Only items conforming relevant BIS to be used if issued by BIS in compliance of CEA (Measures relating to safety and electric supply) regulation, 2010. In case no specification is mentioned then the contractor is restricted to use the material in conformity with BIS in vogue. In such case contractor is to obtain approval of tender issue authority or Sr.DEE / DyCEE/CN in advance.
- 4) Contractor is advised to train / counsel or use only trained workers having the competency to work in the LV system and are aware of electrical safety.

31. FIXING MILESTONES:

The concerned Engineer-in-charge of the work will fix appropriate milestone and monitor the progress from time to time.

“Tentative Programme” for execution of the work - D = LOA date	
A)	Date of Joint inspection of site and submission of Program of work - D+ 30 days
B)	Date of submission of design, Drawings...etc. for approval of competent authority - D+ 2 months
C)	Date of submission of material make & quantity as per site requirements -- D+ 3 months
D)	Date of supply of materials - D+ 4 months
E)	Date of erection of items- D+ 6 months
F)	Date of Testing & commissioning of items- D+ 9 months
G)	Date of Handing over of released material to the owner of the material D+ 10months
H)	Date of Handing over the installation to Respective Railway authorities - D+ 11 months
I)	Date of completion of work - D+12 months

* Above tentative programme of work will get change based on nature of work and work Completion period.

32. General Instructions to Electrical Contractor: -

- I. Crop Compensation & ROW issues if any has to be borne by the contractor, and Contractor has to timely resolve the ROW issue, no currency extension will be granted in this account.
- II. The Successful contractor shall held responsibility to liaison with KPTCL for getting approval for Check Survey, getting Intimation letter for Supervision charges, TAQC Payment, Availing LC with concerned authorities KPTCL / PGCIL / BESCO / HESCO / CESCO / MESCOM / GESCO etc, all relevant Tower Design & Drawings, Execution of agreement with Railways & KPTCL, submitting Relevant documents for EIG Railways approval as per list mentioned below: -

Sl No.	Description
1	As erected drawing with construction and Division Supervisor & Officers Signature duly marked with Railway Boundary and Safety Certificate Seal.
2	Agreement with KPTCL/PGCL/BESCO/HESCO/CESCO/MESCOM/GESCO etc. authorities.
3	Contractor License Copy
4	Data Design and Calculation Sheet.
5	Earth Value Details.
6	Letter of Compliance (Form C).
7	Protective Relays tripping certificate from EB authorities.

The Contractor shall liaison with ESCOM/ KPTCL/ PGCL, State/Central Government and local bodies

In connection with the work as required and to obtain the intimation for supervision charges. Necessary advice required from Railway administration during the course of work shall be collected by the contractor to furnish the same to Govt. Bodies in time.

a) Railway shall be responsible for payment of

I. Availing of new supply connection charges/deposit (3 MMD)

II. Supervision charges (10% of est.) based on sanctioned estimate of ESCOM / KPTCL / PGCL only after receiving the written advice from supply authority (owner of the crossing) to obtain the sanction for commencing the work of modification of the power line crossings/ electrical installations.

b) All the other incidental charges payable to ESCOM / KPTCL/ PGCL, Electrical Inspectorate charges (State Govt.), charges for stamp duties/ agreements, inspection charges, statutory amount to remit for approval from local bodies etc. (other than meter charges, supervision charges/deposits) in connection with the work shall be paid by the contractor as part of the tender work. Claim for such payment shall not be entertained by Railways.

Meter should be drawn by contractor (if so mentioned) as per the make approved by ESCOM & provided at site duly arranging the payment & other associated incidental charges to ESCOM.

After successful completion of power line crossing modification work, before commissioning and handing over of the crossing to ESCOM / KPTCL/ PGCL, following documents and details shall be furnished by contractor for each crossing for furnishing the proposal to Electrical Inspectorate (Railways) to obtain EIG approval as part of their scope of tender work.

- a. Proposal shall be in accordance with Regulations of Power line crossings Appendix IV, Para 3 of ACTM Vol. II part II.
- b. Separate application for each proposal (LT/HT/EHT crossing) for EIG approval.
- c. Certificate of the contractor employed (if any work is proposed to be under taken through an agency) by the owner of the crossing for carrying out the work.
- d. Drawing showing layout and site plan including route, location of structures (for supporting and terminating the OH line/UG Cable) and Railway boundaries. As erected auto cad drawing shall be furnished duly incorporating structural details with dimensions.
- e. Drawing clearly indicating the statutory clearances (for UG Cable/Overhead line power line crossings) as stipulated in the Regulations of Power line crossings Appendix IV, Para 3 of ACTM Vol. II part II.
- f. Drawing indicating the details of earthing, size of earth electrode, method of connection to the structure details of Anti Climbing Devices, warning boards /danger boards provided.

- g. Full particulars of protective pipe for crossing, method of cable marking for identification, details of cathodic protection of cable, depth of cable laid below track level should be indicated in the drawing.
- h. Quality of materials and test report of the materials used for execution of the work should be submitted.
- i. Work Execution Agreement between owner of the crossing (ESCOM / KPTCL/ PGCL) and Railways should be submitted before commencement of work.
- j. Data, designs, calculations and drawings for the modified power line crossings and test certificates for electrical equipment's, cable etc., shall be furnished by the contractor for obtaining EIG approval.
- k. The Electrical work shall be carried out in consultation with and in the presence of project in charge officer or field supervisor or his authorized representative at site. In case of any difference of opinion in execution of work the decision of project in charge officer or his authorized representative shall be final.
- l. The work shall be carried out generally in conformity with the Railway specifications, except as amended are modified by these special conditions and direction in any in writing by the Engineer in charge of the work and also in conformity to Indian Electricity Rules and Regulations as amended from time to time and also conforms to South Western Railway Specification used for this purpose.
- m. The programme and method of work shall have to be furnished by the contractor well in time in consultation with Engineer in charge of the work.
- n. The contractor will follow all security procedure and shall obtain necessary permits / gate passes as prescribed by Railways for entry of personnel or bringing in or taking out the material concerning the contract.
- o. No Free pass is transport will be arranged by the Railways for movement of contract and his staff.
- p. Communications handed over to the contractor personnel at site / over phone / mail / what's app shall be deemed to have reached to his office.
- q. The several documents forming the contract are to be taken mutually complimented to one another.
- r. No claim whatsoever will be entertained by the Railway on account any delay or hold up of the electrical works arranging out of delay in approval of changes, modifications, alternations, additions, omission or due to any other factor on Railway account.
- s. All expense incurred towards the transportation of contract staff and material and daily allowance of the contractor personnel shall be borne by the contractor.
- t. Contractor shall normally be allowed to carry out the work during the day time only,
- u. This contract shall be governed by the prevailing laws in India and governed by General and Special condition Indian Railways.

33. Registers / book maintained at work site:

The following register to be maintained at site, the same to be produced as and when required by the Inspecting officials.

A - Appendix – SITE ORDER BOOK

SOUTH WESTERN RAILWAY

SITE ORDER BOOK

Name of work:

AGT No./Date

Name of the contractor

Starting date:

Date	Site order by Inspecting Officials	Signature of the official	Noting Signature		Compliance	Remarks	Compliance Signature	
			Contractor	SSE			Contractor	SSE

Table 4: Site Order Book Details

Notes:

1. Site Orders should be recorded specifically and chronologically
2. Wherever required, site orders may be supported by sketches

Special Note: Any objection of the contractor to the site orders should be brought to the notice to the Executive Engineers or higher officials immediately by the Contractor separately.

B - Appendix – Hindrance Register

SOUTH WESTERN RAILWAY

HINDRANCE REGISTER

Name of work:

AGT No./Date

Name of the contractor

Starting date:

Sl. No	Nature of Hindrance	Date of Occurrence	Date of removal	Period of hindrance	Overlapping period	Total period of hindrance	Extension recommended	Extension approved	Cause GCC	Signature	
										Contractor	SSE

C - Appendix – Daily Progress & Labour Register

SOUTH WESTERN RAILWAY

DAILY PROGRESS & LABOUR REGISTER

Name of work:

AGT No./Date

Name of the contractor
date:

Starting

Date	Status of Work (in the beginning)	Progress (on date)	Contractor labour (available at site)	Remarks	Signature	
					Contractor	SSE

34. IS SPECIFICATIONS OF THE ELECTRICAL ITEMS:

1. HT & LT Electrical cables and insulated wires:

LT/HT cable XLPE insulated PVC sheathed steel strip armoring multi core with Aluminum/Copper conductor for working voltage up to 1.1 KVA as per ISS: 7098 part 1, up to 33 KV as per ISS 7098/part-II PVC insulated sheathed with armoring with aluminum/ copper conductors for working voltage up to and including 1.1 KV as per ISS: 1554 part 1 & up to and including 11 KV as per ISS: 1554/Part-II.

Note: PVC insulated cable/wires to ISS 694 up to working voltage less than or equal to 11000 V require mandatory ISI marking as per BIS rules and regulations. Hence wherever PVC insulated cable conforming to ISS: 694 up to working voltage less than or equal to 1100 V cables are to be used only on those ISIs marked shall be used.

2. Control switched, Switch gears and productive compounds/equipment's:

Piano switch, Toggle switch, Plug & socket, Tumbler switch, Rotary switch, combination switch, change over switch, Fuse units and switch gears, HRC fuse, fuse Carriers, MCB, MCCB, Relay, Contactors and timer switches

a. Switches for domestic and similar purpose ISS: 3854

b. 2A switches for electric and similar purpose ISS: 4949

c. Electric circuit breaker for over current protection for house hold and similar installations ISS: 8828

d. RCCBs with and without integral over current protection ISS: 12640 parts I & II Require mandatory ISI marking as per BIS rules and regulations Hence wherever these items are used, only those with ISI marking shall be used.

Governing specifications ISS 2516, 3854, 4160, 4949, 13703 and 13947.

3. Control switches, Switch gears and protective components equipment's:

Vacuum circuit breaker of voltage up to 12 KV rated frequency of 50 Hz draw out/fixed type as per ISS 13118/91 or latest.

4. Transformer:
 - a) Oil cooled distribution transformer of voltage rating 33/22/11 KV 415 Volts up to 1000 KVA as per ISS: 2026/1977 or latest
 - b) Welding transformer with input voltage 240 V for single phase and 415 V for three phase rated frequency 50 HZ, rated current up to 900 A as per ISS:1851/1975 or latest.
 - c) Current transformer for use with electrical measuring instruments and electrical protective devices with primary current of 10,12.5, 15,20,25,30,40,50, 60 & 75 and secondary current of 1A & 5 A as per ISS 2705/1992 or latest.
 - d) Potential transformer for use with electrical measuring instruments and electrical protective devices with rated secondary voltage 100 and 110 V as per ISS:3156/78 or latest
5. Electrical pumps:

Submersible pumps set suitable for 100, 150 & 200 mm bore as per ISS:8034/1989 or latest.

Centrifugal pump horizontal split casing with squirrel cage induction motor to operate on AC 3 Ph 415 V supply as per ISS: 6595/2002 or latest Mono block pump to operate on AC single phase 240V/AC 3 Ph 415 V as per ISS 9079/89 or latest.
6. Electrical Fans and Air Circulators:
 - a) Air circulators oscillating/ non-oscillating with regulator for use on single phase as IS 2997/1964 or latest.
 - b) Pedestal fans having 2 or more blades driven by AC motor mounted on a pedestal of fixed or variable height of sizes 300/400/450/600 mm as per IS 1169/1967 or latest.
 - c) Ceiling fans single phase ceiling fans with regulators of sweep 900,1050,1200 & 1400 mm as per ISS 374/1979 or latest. Electrical heaters. Bracket fans table fans Governing specifications IS No 374,1169,2997.
7. Air conditioners Water Coolers & Refrigerators:
 - a) Window AC plants window type of capacity 1/1.5/2.0 Tons as per IS 1391/part I/part II/1992 or latest.
 - b) Water coolers self-contained drinking water coolers operated by electricity driven vapor compression type refrigeration with air cooled condenser as per 1475/1978 or latest.

Governing specifications IS No 1391/Part I & II, IS 1475.
8. Electrical Lamps & Luminaries:

Following Indian Standards on LED and LED based products have been published.

SI No IS No Title

1	16101: 2012	General Lighting - LEDs and LED modules – Terms and Definitions
2	16102(Part 1): 2012	Self- Ballasted LED Lamps for General Lighting Services Part 1 Safety Requirements
3	16102(Part 2): 2012	Self-Ballasted LED Lamps for General Lighting Services Part 2 Performance Requirements

4	16103(Part 1): 2012	Led Modules for General Lighting Part 1 Safety Requirements
5	16103(Part 2): 2012	Led Modules for General Lighting Part 2 Performance Requirements
6	15885(Part2/Sec13): 2012	Safety of Lamp Control Gear Part 2 Particular Requirements Section 13 d.c. or a.c. Supplied Electronic Control gear for Led Modules
7	16104: 2012	d.c. or a.c. Supplied Electronic Control Gear for LED Modules - Performance Requirements
8	16105: 2012	Method of Measurement of Lumen Maintenance of Solid State Light (LED) Sources
9	16106: 2012	Method of Electrical and Photometric Measurements of Solid-State Lighting (LED) Products
10	16107(Part 1):2012	Luminaires Performance Part 1 General Requirements
11	16107-1:2012	Luminaires Performance Part 2 Particular Requirements Section 1 LED Luminaire
12	16108: 2012	Photobiological Safety of Lamps and Lamp Systems

9. Stand by DG set:

Governing specifications: IS No 10000, 10002.

10. UPS/Invertors, Voltage stabilizers:

Governing specifications: IS No 16242 (part 1):2014

11. HT Insulators 11 KV and 33 KV with fittings to IS IEC 62305

12. 33 KV Lighting Arrestor Gapless metal oxide type heavy duty confirming to IS : 3070 (1985) and to with stand surge current upto 10 ka.

13. 11 KV Lighting Arrestor Gapless metal oxide confirming to 3070 (1985) and to with stand surge current upto 150 kA.

14. 33 KV AB Gang operated switch with drop out fuse capacity 200 A to 1750 A and confirming to IS: 9921 (1982) .

15. 11 KV AB Gang operated switch with drop out fuse capacity 200 A to 400 A and confirming to 9921 (1982).

16. 1 KV VCB with control Box out door type 3 pole, 50 Hz confirming to IS: 2516 / 3427 latest.

17. MCCB 3 pole, 50 Hz, 415V Confirming to 13947 (Part-2) 1993.

18. Electrical Energy Meter Electro-Mechanical Confirming to 13010 / 1990 with amendment No.1 to 3 and Electronic Energy Meter Confirming to IS: 13779 / 1999. Class 1.0 with latest amendments.

19. Weather Proof unarmored PVC insulated and PVC sheathed cable for Electric Power and Lighting with stranded Aluminum conductor and Voltage ratings up to and including 1100 V, confirming to 694/1990 and conductors conforming to 8130 /1984.

20. Electric Ceiling Fans 1500 mm sweep for offices, waiting halls etc., and 1800 mm sweep for platforms, capacitor type with double ball bearing complete with 300

- mm down rod, canopies, shackles, blades with speed regulator resistance type suitable for operation on 230V, 50 Hz, Single phase AC supply conforming to 374/1979 with Amendment No.1.
21. Electric Ceiling Fans 1200 mm sweep / 1400 mm sweep capacitor type with double ball bearing complete with 300 mm down rod, canopies, shackles, blades with speed regulator resistance type suitable for operation on 230V, 50 Hz, Single phase AC supply conforming to 374/1979 with Amendment No.1.
 22. AC MCB having fixed un adjustable time current characteristic for use in protection of industrial, commercial, and domestic electric installation. These should be suitable for use on 240/415 V, 50 Hz, AC having facility for termination of Al. cable and fixing conforming to 8828 / 1966.
 23. Self-contained drinking water cooler conforming to 1475 / 1978 with Amendment No.1 to 7 suitable for operation on 230 V +/- 10%, 50 Hz single phase AC supply of Capacities 40 / 40 Liters, 60/120 Liters and 150 / 150 Liters.
 24. Self-contained drinking water cooler rust proof with synthetic / plastic body conforming to 1475 / 1978 with Amendment No.1 to 7 suitable for operation on 230V +/- 10%, 50 Hz, Single phase AC supply of capacities 40 / 40 Liters, 40/80 Liters, 60/120 Liters and 150/150 Liters.
 25. Street Light luminaries suitable for elliptical tubular HPSV lamps to 9974 (Part-I with amendment No. 1,2 & 3 Part-II with amendment No. 1 & 2) / 1981 complete with control gear. Suitable for operation on 200-220-240 Volts, AC single phase, 50 Hz supply Luminaries should be with IP-65 protection.
 26. Window type room air conditioner conforming to 1391 (Part-I) / 199; with Amendment No.1 & 2 and additional parameters suitable for operation on 230V +/- 10%, 50 Hz single phase AC supply capable of performing the following functions: Cooling, dehumidifying, Air circulating, Filtering and ventilation, Capacities. 18000 Blu/hrs 60000 Blu/hrs.
 27. Vertical / Horizontal type Geyser complete with all fittings conforming to 2082 / 1993 with Amdt. No.1 and 2 suitable for 240V Single phase AC 50 Hz supply. Capacity 25 Ltr of 1000W / 1500W and 35 Ltrs of 1500W.
 28. Vertical / Horizontal type Geyser rust proof employing Synthetic / plastic bodies complete with all fittings conforming to 2082 / 1993 with Amdt. No.1 and 2 suitable for 240V Single phase AC 50 Hz supply. Capacity 25 Ltr of 1000W / 1500W and 35 Ltrs of 1500W.
 29. Fire-Retardant low-tension cotton adhesive tape conforming to ICF's specification No.ICF/Elec./921 above 5 A (Rly Board Lr No.2003/Elec/(G)/138/1 dt. 05.01.2006).
 30. PVC insulation tape conforming to 7809 Part-III/Sec-1/1986 upto 5A
 31. Electrically driven submersible pump set with built in non-return valve as per 8034 (latest) along with wet type 3 ph. Motor as per 9283 (latest) suitable for 440/380V 50 Hz 3 phase supply and suitable for operation in 150 mm dia bore wells.
 32. Low Tension Air Circuit Breakers conforming to 2516 (latest).

33. Heavy duty propeller type AC Ventilating fans (Exhaust Fans) conforming to 2312 /1967 with Amdt. No.1 to 8 complete with mounting rings frame with four fixing holes but without regulator and louver shutters.
34. Heavy Duty Propeller type AC Ventilating fans (Exhaust Fans) with synthetic / plastic / fibre body with fiber vanes confirming to IS: 2312 – 1967 with Amdt No. 1 to 8 complete with mounting rings frame with four fixing holes but without regulator and louver shutters.
35. Heavy duty Air Circulator fan, bracket wall mounting type with oscillating facility, $\frac{3}{4}$ blades, impeller dia.600/610, suitable to work on 220/240V, 50Hz AC single phase supply and confirming to 2997/1964 or latest.
36. Wall mounting bracket fan, oscillating type, suitable for operation on 220/240V, single phase 50Hz AC supply with built in regulator and confirming to 556/1979 or latest.
37. 7.5 / 10 Ton package type AC plant confirming to 8148/1976 or latest.
38. Split type room air conditioners up to 5 Ton confirming to 1391 (Part-II / 1992 or latest).
39. Starting / running capacitor for hermetically sealed compressor suitable for operation on 230V 50Hz AC supply confirming to 2993 / 1975.
40. LT Power capacitors of rating 1.0 to 25.0 KVAR Confirming to 2843 / 1986 or latest and ISI marked.
41. Switch fuse units 32A – 1200A Up to 85 KA Confirming to 10027 / 2000.
42. Change over switches Up to 800A conforming to 13947 (Part I & III) / 1983.
43. HRC fuses 6A – 630A conforming to 13703.
44. On load change over switch 63A – 3150A Conforming to 13947 (Part I & III) / 1993.
45. RCCB's 25A, 40A, 63A Conforming to 12640-1/ 2008.
46. Distribution boards conforming to 2675,5039,13032.
47. DOL & Star delta Starters conforming to IEC 60947-4-1-2012
48. ISI Marked Welding Cables Conforming to 9857 / 1990.
49. Portable Gen sets up to 3 KVA (Petrol start-kerosene run) Conforming to 12824 / 1989.
50. Centrifugal pump set conforming to 6595-1/ 2013 or latest edition.
58. PVC Insulated Multi-Strand Copper Conductor Cable for House wiring 1.5, 2.5, 4 & 6 sq mm
conforming to IS. 694,1554(P-1) & 7098
59. 3 Phase Induction Motor IS No.12615/2018
60. Shunt Capacitor (Up to 30 KVAR 415V) Conforming to 13925-4/2013.
61. Hermetically sealed compressor 1.5 TR/1TR Capacity suitable to work on 240V, 50Hz Single phase AC supply. The compressor shall be completed and conforming to 10617 / 2013.

NOTE:

- i) Relevant IS specifications of the electrical items are indicated with the respective items. However, the contractor has to ensure to supply these electrical items as

per the present IS mentioned or to the latest IS modified time to time by Bureau of Indian Standards

- ii) Where ever IS Nos are not mentioned, the contractor has to contact Dy.CEE/CN/BNC or UBL office for the copies of the respective specifications issued by Railways.

35. JPO:

Any revision/correction in Conditions/guidelines issued by competent authority at a later date in reference to the JPO issued vide PCSTE/SWR Letter No. SG/SWR/OFC/QC/Cut /Damage/Vol. IV/E: 3-4 DATED: 27.12.2023 also will be applicable for the tender in regard to undertaking digging work in the vicinity of underground Signalling, Electrical and Telecommunication cables.
