



| NIT (T.E. No.: BHEL/FSIP/MM-WCC/25-26/W-7) | | 06-05-2025 |
|---|--|---|
| Civil Works Contract for Relaying of bituminous in Township Road at BHEL FSIP Jagdishpur. | | |
| 1 | Bidder to ensure they have all required facilities for quoting bid on the portal as indicated above. | |
| 2 | E-Procurement Portal | https://eprocurebhel.co.in/nicgep/app |
| 3 | Due date and Time for bid submission and Opening of Techno-Commercial Bid | Refer E-Bid Portal. |
| 5 | Applicability of Reverse Auction(RA) | Applicable |
| 6 | Nature of contract | Normal |
| 7 | Total Contract Period (in Months) refer STC. | 0.5 |
| 8 | Guarantee Period (in Months) | 24 |
| 9 | Quantum | Quantum shall be as per section III of NIT |
| 10 | Earnest Money Deposit (EMD) | Not Applicable |
| 11 | Security Deposit | Applicable |
| 12 | Security amount | The total amount of Security Deposit will be 10% of the Work Order Value |
| 13 | Initial ePBG/Security Deposit validity period in months | 26.5 |
| 14 | PP- Make In India Order provisions | Applicable |
| 15 | MSE Purchase Preference | Not Applicable as the nature of contract is works contract Payment shall be done in 90 days as nature of contract is works contract. |
| 16 | Terms Of Payment | As per clause no. 2.6 C of section II of GCC |
| 17 | Terms Of Delivery | As per point no. B.2 of STC |
| 18 | Distribution | Single contractor is sufficient to do the work. |
| 19 | LD/Penalty | As per point no. B.9 of STC |
| 20 | Quantity Variation | As per point no. B.5 of STC |
| 21 | Price Variation Clause (PVC) | Not Applicable |
| 22 | PF/ESI/Bonus/Leave with wages | Not Applicable |
| 23 | Integrity Pact | Not applicable |
| 24 | Price Evaluation | Bidder to quote prices including GST. No GST shall be paid over quoted rates |
| 25 | Any other special major condition | Nil |



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
फैब्रिकेशन, स्टैम्पिंग ऐन्ड इंसुलटर प्लांट
Fabrication, Stamping & Insulator Plant (FSIP)
जगदीशपुर / Jagdishpur

Enclosures to Tender Enquiry:

- 1. Section- I & II:** General Condition of Contract (GCC Rev. 03)
- 2. Section –III:** Special Terms and Conditions (STC).

Note: The contractors may personally visit the work place to understand the scope of work before submitting their bids.



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General condition of Contract-Rev. 03

BHEL FSIP_GENERAL CONDITION OF CONTRACT Rev 03

BHEL FSIP
PRASHANT KUMAR TRIPATHI



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Section I of GCC

1. DEFINITIONS:

The following terms and expressions shall have the meaning hereby assigned to them, except where the context otherwise requires:

- 1.1 'BHEL' shall mean Bharat Heavy Electricals Limited, a Company registered under the Indian Companies Act, 1956 with its Registered Office at BHEL House, Siri Fort, New Delhi, Pin-110049 through its office at FSIP-Jagdishpur or its authorized Officers or its Engineers or other employees authorized to deal with any matters with which these persons are concerned on its behalf.
- 1.2 'CONTRACTOR' or 'FIRM' shall mean the individual, firm or Company who is enlisted with BHEL for providing the services and shall include their executors, administrators, successors and permitted assigns.
- 1.3 'CONTRACT' or 'CONTRACT DOCUMENT' shall mean and include guidelines and declarations of the registration, the General Terms & Conditions and Statutory Compliances, schedules of quantities, accepted appendices of rates, if any, technical specifications, special specifications, if any, Letter of Intent, agreement & the work order, issued by BHEL. Any conditions or terms stipulated by the bidder in the tender documents or subsequent letters shall not form part of the contract unless specifically accepted in writing by BHEL and incorporated in the work order.
- 1.4 'TENDER DOCUMENTS' shall mean Instruction to Tenderers, General Terms & Conditions, Special Terms & Conditions, Tender Specifications including drawings and all other documents issued to the bidder against invitation of bid.
- 1.5 'LETTER OF INTENT' shall mean the intimation by a letter / email / fax to the bidder that the tender has been accepted in accordance with provision contained in that letter. The responsibility of the contractor commences from the date of issue of this letter and all the terms and conditions of contract are applicable from this date.
- 1.6 'APPROVED, DIRECTED or INSTRUCTED' shall mean approved, directed or instructed by BHEL Shop Engineer / Shop- in-charge/ Concerned authorities.
- 1.7 'WORK' or 'CONTRACT WORK' shall mean and include the work to be done in relevant work category by the firm or as specified in the Tender documents.

2. OFFICIAL SECRET ACT:

The contractor shall give an undertaking under the official secret Act for maintaining secrecy of the drawings, documents or other records connected with the work given to them. The contractor shall return all the drawings/documents given to them. A third party non-disclosure agreement as per Annexure-G shall be submitted.

3. Submission of Offer: -

- 3.1 Bids shall be submitted strictly in accordance with the requirements of tender documents. Incomplete offers are liable to be rejected.
- 3.2 Tenders shall be submitted in Two parts (or as specified in NIT) on or before the Due Date and time indicated in the NIT/ RFQ.

- 3.2.1 **PART – I (Techno-Commercial Bid):** Techno commercial bid should be filled as per ANNEXURE-H to this section and should contain documents in the same order as listed there along with Documents for Pre-qualifying requirements, if applicable.
- 3.2.2 **PART – II (Price Bid):** Price bid should contain only Price Offer to be submitted strictly as per given format of Price Schedule given in the tender document. The Price Bid not submitted as per Price Schedule may not be considered.

Note:

1. Offers are liable to be rejected for changes made by bidders in the Price Schedule in Price Bid, except those specified in the unpriced bid and accepted by Purchaser.
2. Where-ever it is specified in NIT that the bids are to be submitted on BHEL e-procurement portal, bidder to upload the bid documents on specified portal and no paper bids are required to be submitted.

3.3 Submission of Bid through NIC

- 3.3.1 Bidders shall have to visit BHEL E-Procurement web site (<https://eprocurebhel.co.in/nicgep/app>) and have to upload submit their quotation on BHEL e-bid portal in line with NIT requirement by due date and time.
- 3.3.2 For submitting Bids, bidders have to use their organization's authorized Digital signature (DSC class-III/ applicable class for bidding). In case the same is not available with the bidder then such bidder has to arrange as per the existing provisions of BHEL E procurement portal and ensure timely submission of the bids.
- 3.3.3 Bidders to note that hard copy of the bid is not required to be submitted and Bid is to be submitted on BHEL E procurement portal only. In case paper bids are received from any of the bidder against e-bid, same shall be ignored

3.4 Submission of Bid through Gem: Bidders to follow relevant clause of GeM GTC for submission of offer through GeM

- 3.5 The bidder shall quote the rates in English Language using international numerals. These rates shall be entered in figures as well as in words. For the purpose of the tender, the metric system of units shall be used.
- 3.6 All entries in the tender shall either be typed or be written in ink. Overwriting or cutting is not acceptable.
- 3.7 Tenders shall be opened by authorized officers of BHEL through online mode on as per type of e mode at the time and date specified in the NIT or any extension.
- 3.8 The offers should be strictly in accordance with the tender specifications & General Instructions to the bidder. Should the bidder require any clarification on the tender specification, or is interested in offering any deviation from the tender specification, he shall contact the authority inviting the tender for clarification before submission of the tender. No deviation w.r.t. terms & conditions of the tender are acceptable.
- 3.9 If there are varying or conflicting provisions made in any one document forming part of the

contract, BHEL shall be the deciding authority to the intention of the document.

- 3.10 Before tendering, the bidder is advised to inspect the site of work and the environments and be acquainted with the actual working and other prevalent conditions, facilities available etc. No claim will be entertained later on grounds of lack of knowledge.
- 3.11 The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights to reject any or all the tenders.
- 3.12 Conditional and unsigned tenders, tenders containing absurd or unworkable rates and amounts, tenders which are incomplete or otherwise considered defective and tenders not in accordance with the tender conditions, specifications, etc., are liable to be rejected.
- 3.13 If the bidder deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit the Earnest Money / Security Deposit / any other moneys due.
- 3.14 Canvassing in any form in connection with the tender is strictly prohibited and the tenders submitted by the Bidder who resorts to canvassing are liable to be rejected.
- 3.14.1 In case of non-conformities/errors/discrepancies are observed between the quoted prices in figures and that in words, following guidelines shall be followed:
- 3.14.2 If, in the price structure quoted for the required goods / services / works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly. Unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
- 3.14.3 If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected an
- 3.14.4 If there is a discrepancy between words and figures, the amount in words shall prevail unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above
- 3.15 If there is such discrepancy in an offer the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.
- 3.16 BHEL reserve the right to accept or reject any of the bid/all bids or cancel/withdraw the invitation for bid without assigning any reason whatsoever and in such case no bidder/intending bidders shall have any claim arising out of such action by BHEL.

4. SIGNING OF TENDER DOCEMENTS

The tenderer shall furnish following, duly enclosing documents relating thereto for the person who signs the tender documents:

- a) Authorized signatory shall be the person holding 'power of attorney' on behalf of the firm/company/bidder-concerned authorized/empowered to act on behalf for the specific purpose.



- b) **Power of Attorney:** An attested copy of the Power of Attorney, in case an individual other than the sole proprietor signs the tender shall be submitted along with the tenders. Refer annexure-15 for format of Power of Attorney.
- c) **Sole Proprietor-ship Firm:** Undertaking on oath (Rs. 100 stamp paper) that Proprietor is solely responsible for all rights and liabilities while working under the name and style of Sole Proprietorship firm namely (_____)
- d) **Partnership Firms:** The names of all the partners and their address. A copy of the partnership deed duly certified by the Notary Public/ Deed registered at the office of Registrar of Firms shall be enclosed. The tender must be signed by all the partners of the firm or by the managing partner who has power to do.
- e) **Company:** Certified copy Memorandum of Association, Article of Association and Incorporation Certificate.
- f) **Society:** Registration certificate issued by Registrar of societies.

Note: It shall be presumed that tenders submitted through GePNIC/GeM are made by the authorized signatory. Consequently, the documents specified above shall not be required for GePNIC/GeM tenders.

BHEL will not be bound by any other power of attorney granted or the change in composition of the firm made after the execution of the contract agreement. They may, however, recognize such power of attorney or change in status only after legal advice.

5. PRICE SCHEDULE (PRICE BID)

- 5.1 Rate should be quoted strictly as per prescribed Price Schedule.
- 5.2 Rates to be quoted in figures and words by the Contractor.
- 5.3 There should not be any corrections in price bid contradictory to the above the offer will be liable for rejection.

6. EVALUATION OF OFFERS

- 6.1 Technical-cum-Commercial Bid (Part-I) shall be opened first on due date specified in NIT.
- 6.2 The bidders shall be evaluated as per Pre-qualifying and techno-commercial requirements mentioned in the tender documents.
- 6.3 Price Bid (Part-II) shall be opened only of Technical-cum-Commercial qualified bidder.
- 6.4 Any discount/revised offer submitted by a bidder on its own shall be accepted provided it is received on or before the due date and time of offer submission (i.e. part-1 bid). The discount shall be applied on pro rata basis to all items unless specified otherwise by the bidder. Unsolicited discount received after the due date and time of Bid Submission shall not be considered for evaluation. However, if the party who has submitted the unsolicited discount/rebate becomes the L-1 party, then the awarded price i.e. contract value shall be worked out after considering the discount so offered.
- 6.5 Evaluation of the offer will be strictly based on the information submitted by the bidder. In view of this the bidder is requested to go through tender document carefully and furnish all details clearly. Missing information may not be asked by BHEL.



- 6.6 **Evaluation in case of more than one L-1 bidder:** In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders. In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss / draw of lots, in the presence of the respective L-1 bidder(s) or their representative(s). Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.

Note: For GeM Tenders provisions of GeM will prevail.

- 6.7 BHEL reserve the right to split the work in two or more bidders, if required. If not specified, total work in full shall be ordered on a single party i.e. L-1 bidder.

- 6.8 BHEL reserves its right to negotiate with the L1 Bidder. and/ or go for Reverse Auction (RA).

7. REVERSE AUCTION:

- 7.1 BHEL may go for Reverse Auction (on line bidding on Internet) instead of opening the submitted sealed price bid. Bidder should confirm participation in Reverse Auction along with Techno-Commercial Bid.

- 7.2 The decision to go for Reverse Auction will be taken after techno-commercial evaluation. Only technically and commercially acceptable bidders shall be eligible to participate in reverse auction. Information and general terms and conditions governing RA shall be communicated to technically and commercially acceptable bidders.

- 7.3 In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids already submitted and available with BHEL shall be opened as per BHEL's standard practice.

Note: - For tenders floated on GeM, bidders shall adhere to the GeM General Terms and Conditions (GTC) for the RA process.

8. CONTRACT AGREEMENT

A contract agreement is required to be signed at the earliest & prior to the submission of first RA Bill. Execution of Contract Agreement shall be as per Annexure-19 of list of Annexures. The following documents shall be furnished by contractor for preparation of Contract Agreement: -

- 8.1 Applicable Security Deposit in line with clause no. 1.10.3 of Section-II of GTC.

- 8.2. Non judicial stamp paper of Rs. 100/-.

Note that the Security deposit shall be remitted by the contractor before start of work and any payment against this contract shall be released only after remittance of Security deposit & Retention amount and thereafter signing of the contract.

9. Taxes and Duties:

- 9.1 BHEL shall be releasing payments against the work order after deduction of income tax at source (TDS) as per requirement of income tax rules as well as TDS under GST and BHEL will issue appropriate certificates in this regard.

- 9.2 GST, if applicable, shall be paid to the contractor as per the Government's rules, against actual running bills, supported by documentary evidence. The GST shall be paid in addition to the quoted rate wherever Input Tax Credit (ITC) is available to BHEL. Bidders are required to submit



their quotes excluding GST, in accordance with the NIT/ATC. However, in cases where Input Tax Credit is not available to BHEL, bidders shall quote prices including GST in accordance with NIT/ATC and no additional GST shall be paid over the quoted rate.

- 9.3 The GST Credit entry maintained by GSTN to the BHEL Accounts on 'GSTN Common Server' must be ensured by the contractor. In absence of the same or any loss of GST Credit due to the fault of contractor, same shall be recovered/not payable to the contractor.
- 9.4 No interest shall be payable by BHEL on Earnest Money, Security Deposit or on any money due to the firm by BHEL.
- 9.5 Firm shall arrange his own finance for smooth execution of contract, wages payment, other statutory payments to his employees and all other agreed conditions.
- 9.6 Contractor is required to submit the bill within 30 days from work completion. If for any reason contractor is unable to submit bill beyond 30 days, then contractor has to submit bill within 6 months from work completion. Beyond this period bill will not be accepted.
- 9.7 Clarifications from the contractors on bills will be intimated in one go within 07 days of receipt of clear bills, generally. Further, contractors are also required to submit the clarification in one go by next 07 days of receipt of clarification letter from BHEL.

10. SAFETY AND OCCUPATIONAL HEALTH:

The contractor has to assume full responsibility of the safety of the vehicles/ equipment, crew and to comply with the security/ safety regulations of BHEL and Government, as applicable, inside the BHEL factory. The contractor is required to keep and maintain first aid box at work place at his own cost.

11. EXTENSION

The contract may be extended as per BHEL's policy on mutual agreement of BHEL and the contractor.

12. PREFERENCES FOR MSMEs:

In compliance of MSE preference clause, the distribution of work amongst MSE bidders shall be in the following manner:

- 12.1 Distribution shall apply only in case MSE bidder has quoted prices within L1+15% & L1 is non-MSE bidder.
- 12.2 In case the work can be split in smaller portions and work is to be awarded to L1 bidder only, then 25% of the work shall be provided to lowest priced bidder amongst MSE who accepts L1 prices. Rest 75% to be allocated to L1 bidder.
- 12.3 In case the work is proposed to be split amongst specified (n) bidders:
- If none of the bidders who are selected to receive split portion of work is MSE, then lowest priced bidder amongst MSE who accepts L1 prices will be provided 25% of the work. Rest of the bidders shall share balance 75% work on pro-rata basis as per applicable distribution matrix as per TTC.
 - In case some MSE bidders are eligible for receiving the split portions of work as per their bids (Ln ranking) & the total quantum to MSE bidders exceeds 25%, the splitting shall be as per applicable distribution matrix as per TTC.



- c. In case some MSE bidders are eligible for receiving the split portions of work as per their bids (Ln ranking) & the total quantum to MSE bidders is less than 25%, then the MSE bidder's quantum of work shall be increased in pro-rata manner so that the sum of all MSE bidder's allocation is 25%. Rest of the bidders shall share balance 75% work on pro-rata basis as per applicable distribution matrix as per TTC.

NOTE: For GeM tenders MSE/MII preference shall be given to only those bidders who will have selected for MSE/MII benefits in the tender. If the seller fails to claim MSE/MII provisions on GeM portal at profile updating/bid submission stage, the said seller will become ineligible for getting the MSE/ MII benefits for that bid automatically.

13. Terms & Conditions for contractors for Deployment of Contract Laborers Under Service Or Works Contract

13.1 LABOUR LICENCE AND OTHER REQUIREMENTS

- 13.1.1 Contractor shall within 15 days of commencement/completion of work-order submit Form VI-A to RLC office. The first & final bill shall be processed only on clearance regarding submission of Form VI-A by contractor.
- 13.1.2 Contractor shall apply for Form V to BHEL for obtaining labour license (if the number of workers deployed is more than 19) from appropriate government (as on date Central Government) and submit the same within one month from the date of award of the contract. Contractor shall possess separate valid Labour license from appropriate government for each contract in line with CL(R&A) Act before deploying their employees.
- 13.1.3 In case the number of employee desired to be deployed by the contractor against the contract during execution exceeds the number of employees allowed in the license then the contractor shall obtain prior amended valid labour license for the contract for the requisite number of employees.
- 13.1.4 The contractor cannot deploy the contract worker without obtaining requisite Labour licence from the Appropriate Government (Central Govt.) authority. Till then the contractor shall be allowed to deploy maximum 19 workers or the numbers required whichever is less.
- 13.1.5 The contractor shall also have to submit copy of PAN card and latest IT return.
- 13.1.6 The contractor must possess Service Tax Registration number under relevant code head.
- 13.1.7 The contractor should possess GSTIN Number if material is supplied/consumed. The contractor should not be disqualified from bidding in case the contractor does not have GSTIN. However, he shall have to produce GSTIN before opening of Price bid.

13.2 APPOINTMENT AND ENTRY IN FACTORY PREMISES

- 13.2.1 The contractor shall submit the request for issuance of gate passes of their workers along with following documents to HR Department through contracting department in the format given by BHEL:

- Identity Proof (Voter ID/ Aadhar).
- Police Verification Certificate by appropriate authority or Character certificate issued by District Magistrate's Office or Proof of remittance of fees for character certificate at District Magistrate's

Office. Further, he should submit the character certificate within 30 days failing which he will be discontinued.

c. Copy of employment card issued by contractor to his own worker.

d. The firm shall arrange the working permission beyond normal working hours on their own, if required.

13.2.2 After submission of documents as in Para 22.2.1, the contractor shall issue photo identity card to the labour and submit to HR department. This identity card shall be forwarded by HR department to BHEL Security, which shall then authorize the labour to enter the factory premises initially for a period of one month.

13.2.3 The photo identity card shall have to be revalidated in every three months on last working day of the month or any other date fixed to do so. In absence of such revalidation, duly forwarded by HR department, BHEL Security shall not allow any labour to enter the premises of BHEL FSIP Jagdishpur.

13.2.4 The contractor shall maintain a register of persons employed by him in the format prescribed under Rule 75 of Contract Labour (R&A) Central Rules.

13.3 BILLS PAYMENT, ATTENDANCE AND PAYMENT OF WAGES:

13.3.1 The Contractor shall pay wages to all his Labourers as prescribed by the BHEL HR from time to time based on U.P. government norms.

13.3.2 Contractor shall ensure payment of wages as applicable on or before seventh day of each month.

13.3.3 Wages payment shall be made by Contractor to the Labourers through bank only and shall maintain proper records of their timely disbursement. Contractor shall issue wages slips to his labourers.

13.3.4 The payment of wages to the workers shall not be subject to payment against the bills by BHEL. Bills to be issued within period specified in GST.

13.3.5 The contractor shall submit bills to the contracting department only after payment of wages for previous months.

13.3.6 The contractor's bills should be accompanied with the following: -

13.3.6.1 Copy of Measurement Book entries / Statement of work done / work completion report by the Contractor duly verified by concerned BHEL representative(s).

13.3.6.2 Self-Declaration of Minimum Wages of labours deployed by him under the Service contract, PF/ESI no., statutory deductions etc.

13.3.6.3 PF and ESI challans for period for which bill has been raised -separate for concerned Service contract. Print of online challan along with list of contributing contract workers for ESI duly certified by the contractor.

13.3.6.4 Wage payment sheet for the bill period.

13.3.6.5 Statement of material supplied by the contractor, if any.

13.3.6.6 Copy of Labour Licence if increase in no. of labours deployed against Work Order if applicable.

13.3.6.7 In cases where the payment to the contractor is due only after completion of work and the payment is not made monthly then the contractor shall have to produce documents as



enumerated in respect of all workers deployed by him against the contract, for each month separately, along with final bills.

- 13.3.7 The contractor shall remit the cheques favouring RPFC and ESI Office with the appropriate banks with such period as stipulated under relevant provisions. Last date for remittance of PF is 15th and that in case of ESI is 21st of each month.

13.4 PROVIDENT FUND (PF)

- 13.4.1 The contractor should get independent EPF code before deployment of his contract worker against work contract.
- 13.4.2 The Contractor should allot PF account number and get the nomination form, duly filled in, from each worker deployed by him at the time of joining. Each worker must have his/her Provident Fund KYC completed and his respective UAN must have been allocated.
- 13.4.3 In case the worker already has PF/pension account number, allotted to him, previously, then the contractor shall get the transfer form filled up at the time of joining and send to the office of concerned Regional Provident Fund Commissioner.
- 13.4.4 After termination of contract the contractor shall provide due assistance to the labour for withdrawal of PF/pension amount, when due.
- 13.4.5 The Contractor shall liaison with the PF officials to get the annual PF slips and distribute amongst his own workers. Security deposit shall be released only after submission of PF slips of workers.

13.4.6 PF CONTRIBUTION:

Employee's Contribution

12.00%

Employer's Contribution

13.00 %

The PF Contribution will be applicable as per present government guideline. If any change occurs as per govt guidelines/notification same will be applicable.

- 13.4.7 The Contractor shall submit annual returns in Form-6A and Form 3A, prescribed under statutory EPF scheme, 1952, in respect of each worker deployed by him with a copy to HR.

13.5 EMPLOYEES STATE INSURANCE (ESI)

- 13.5.1 The Contractor should allot ESI account number and get the nomination form, duly filled in, from each labour deployed by him at the time of joining.
- 13.5.2 At the time of joining the contractor shall get the self/family registration form filled by the workers and submit to the local ESI office.
- 13.5.3 The contractor shall facilitate collection of issued ESI cards by his worker. Only those workers shall be allowed entry into factory premises who have valid ESI Card.

13.5.4 ESI CONTRIBUTION:

Employee's Contribution

0.75%

Employer Contribution

3.25%

The ESI Contribution will be applicable as per present government guideline. If any change occurs as per govt guidelines/notification same will be applicable.

- 13.5.5 The Contractor shall submit annual returns in Form-6 prescribed under ESI Act, deployed by him with a copy to HR and finance department.
- 13.5.6 The Contractor shall produce the following Registers and forms as per Contract Labour (R & A) Rules 1971 for inspection by the concerned BHEL Officer(s):
- a. Form XIII - Register of Workmen employed by contractor (Rule 75)
 - b. Form XIV - Employment Card issued by contractor (Rule 76)
 - c. Form XVI - Muster Roll 78(1)
 - d. Form XVII - Register of Wages (Rule 78 (1) (a) (i))
 - e. Form XVIII - Register of wages-cum Muster Roll (in case of weekly Payment)
 - f. Form XIX - Wage Slip (Rule 78)(1) (b)
 - g. Form XX - Register of deduction for damages of loss (Rule (78)(1) (a) (ii))
 - h. Form XXI - Register of fines (Rule 78) (1) (a) (ii)
 - i. Form XXII - Register of advance (Rule 78) (1) (a) (ii)
 - j. Form XXIII - Register of overtime (Rule 78) (1) (a) (iii)
 - k. Form XXIV - Return to be sent by the contractor to licensing officer (Rule 82)
 - l. Form XII – Register of Adult Workers
 - m. Form XIV – Leave with wage register

13.6 BONUS

The contractor shall be liable to pay statutory bonus under payment of Bonus Act, 1965 and the payment of bonus (amendment) act, 2015.

13.7 DISCIPLINE

- 13.7.1 The Contractor shall be responsible for the discipline of his own labourers deployed under the service contract. In case of any loss to the BHEL FSIP Jagdishpur on account of indiscipline of contract labourer then such loss shall be assessed and recovered from the running bills of the contractor or from the security deposit.
- 13.7.2 The contractor shall not employ any person who has not completed his 18 years of age and person who has attained 60 years of age. Contractor to ensure that the employees deployed in the premises of BHEL are physically and mentally fit and do not have any criminal record. Such employees should possess requisite skill, proficiency, qualification, experience etc. acceptable to concerned department.
- 13.7.3 The contractor, on advice of authorized BHEL official, shall immediately remove any person employed by him, who may in the opinion of such authorized BHEL official is involved in misconduct. Such person shall not be re-employed by the contractor without prior permission.

13.8 PROHIBITION ON INFLUENCING AND INTERFERING ON BEHALF OF CONTRACTOR:

The Contractor shall neither try to influence, chase or interfere into the working of BHEL officials nor engage BHEL employee or any other third person for the same. In case such incident does occur, it may lead to disqualification/debarring from the contract. Any contractor shall be debarred from consideration if any of his relations is working in the product/functional group in which the contract is being issued.

14. GENERAL GUIDELINES TO CONTRACTOR:

- 14.1 BHEL shall have the privity of the contract with the contractor only and will give instructions to the contractor or his authorized representative. BHEL will have nothing to do or be concerned with the employment of employees working for the contractor. The relationship between BHEL and the Contractor will be that of independent entities and nothing herein contained will amount to joint venture, partnership or an employer-employee relationship.
- 14.2 Contractor to should submit a copy of standing orders if engaging 100 or more workmen and shall comply with the provisions of Factories Act.
- 14.3 The Contractor shall compensate BHEL for any loss or damage to the plant/property, material of BHEL due to his workmen/representatives' negligence or otherwise during execution of work.
- 14.4 The contractor shall be responsible for all acts and omissions of their staff and liabilities arising out of the acts and omissions of such staff shall be borne by the contractor, BHEL shall in no way be responsible for any such acts, omissions or any liabilities arising there from.
- 14.5 If any accident/injury/loss/ occurs due to the operation of any equipment, to any other persons/public and the properties of BHEL/client/other agencies/third party, the contractor shall have to pay necessary compensation and other expense, so decided by the appropriate authorities/victims.
- 14.6 Only the authorized staff attached to the contracted work or representative nominated by the contractor shall be allowed entry inside the company's or any other premises during the period of contract.
- 14.7 The persons employed by the Contractor in respect of work will treated as the authorized representative(s) and shall also be held responsible along with the contractors, for any breach of the terms and conditions as provided in this contract.
- 14.8 If BHEL Executive feels that the persons deployed on job are not having required skill to perform the job, the contractor will have to replace those persons by adequately trained staff.
- 14.9 The Contractor will have to indemnify BHEL against:
- a) All claims for injury or damage to any person or property caused by his negligence of his employees whilst in BHEL premises.
 - b) Observance of Labor & Industrial Laws, including regular remittance to EPF and ESI.
 - c) All claims by way of compensation and all other types of unforeseen claims, which may arise in the period of contract.
 - d) The Contractor will accept liability for compensation in accordance with the provision of the Indian Worker's Compensation Act, 1948, amendments thereafter and or other law for the time being in force for personal injury caused to any workmen by accident arising out of and in the course of this contract.
 - e) The Contractor will indemnify the company against all payments by way of compensation or otherwise which the company may be called upon to make under the provisions of the said Acts

to any workmen as aforesaid, and any cost incurred by the company in connection with any claim preferred by such workmen and or against all actions, claims and demand whatsoever in respect thereof or in respect of any loss, injury or damages whatsoever to any third person arising out or occasioned by the negligent, imperfect or improper performance of this contract by the Contractor, their workmen servants or agents.

- f) The Company shall not be held liable for any loss, damage or compensation to third parties arising from or in relation to transport operation done by the bidder, such loss, damage or compensation shall be reimbursed by the Contractor to the company together with the costs incurred by the company on any legal proceedings pertaining there to.

The Contractor will be required to submit Indemnity Bond in favor of BHEL on a Non Judicial Stamp paper of Rs. 100 value.

15. Conflict of Interest

A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. **The bidder found to have a conflict of interest shall be disqualified.** A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:

- a) they have controlling partner (s) in common; **or**
- b) they receive **or** have received any direct or indirect subsidy/ financial stake from any of them; **or**
- c) they have the same legal representative/agent for purposes of this bid; **or**
- d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder, **or**
- e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from. one bidding manufacturer in more than one bid; **or**
- f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorise only one agent/dealer. There can be only one bid from the following:
 - 1. The principal manufacturer directly or through one Indian agent on his behalf; and
 - 2. Indian/foreign agent on behalf of only one principal, **or**

- g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid, **or**
- h) In case of a holding company having more **than** one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business. "

16 For order exceeding Rs 25 lakhs, Successful L1 bidder to submit mandatorily the GeM Seller ID before placement of Order/Award of contract.

17 The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of



bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

16. Order of Precedence

In case of any conflicting provisions in different documents of NIT such as STC, GTC etc., Terms and conditions will supersede in the following order of Precedence:

- 1) Conditions stipulated in Enquiry letter
- 2) STC
- 3) Section-I
- 4) Section-II

17. Land Border Related Guidelines

Bidder to ensure Compliance of Restrictions under Rule 144 (xi) of GFR 2017 as per DOE Order (Public Procurement No.4) dated 23.02.2023 (as amended from time to time).

18. Integrity Pact (IP):

- a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Supplier/Vendor are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.
- b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
- c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

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- d) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
- e) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.
Note: No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued.



All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are as per NIT.

19. Preference to Make in India:

For this procurement, the local content to categorize a Supplier/Vendor as a Class I local supplier/ Class II local Supplier/Non-Local Supplier and purchase preferences to Class I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the GeM Bid, the same shall be applicable even if issued after issue of this GeM Bid, but before opening of Part-II bids against this GeM Bid.

20. Variation in Taxes & Duties:

Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability.

In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to the direct transaction between BHEL and its Supplier/Vendor only and within the contractual delivery period only.

In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer but before opening of the price Bid, the Bidder/ Supplier/Vendor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of price bid. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
फैब्रिकेशन, स्टैम्पिंग ऐन्ड इंसुलटर प्लांट
Fabrication, Stamping & Insulator Plant (FSIP)
जगदीशपुर / Jagdishpur

Section II

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| Section II of GCC | |
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| Chapter-1 General instruction to tenderers | |
| 1.1 Despatch instruction | |
| 1.1.1 | The General Conditions of Contract form part of the Tender specifications. For this tender, bidders shall use electronic Signature viz Digital Signature Certificate while uploading the tender documents on the e-procurement portal. The information furnished shall be complete by itself. The tenderer is required to furnish all the details and other documents as required in the following pages. |
| 1.1.2 | Tenderers are advised to study all the tender documents carefully. Any submission of tender by the tenderer shall be deemed to have been done after careful study and examination of the tender documents and with the full understanding of the implications thereof. Should the tenderers have any doubt about the meaning of any portion of the Tender Specification or find discrepancies or omissions in the drawings or the tender documents issued are incomplete or shall require clarification on any of the technical aspect, the scope of work etc., he shall at once, contact the authority inviting the tender well in time (so as not to affect last date of submission) for clarification before the submission of the tender. Tenderer's request for clarifications shall be with reference to Sections and Clause numbers given in the tender documents. The specifications and terms and conditions shall be deemed to have been accepted by the tenderer in his offer. Non-compliance with any of the requirements and instructions of the tender enquiry may result in the rejection of the tender. |
| 1.1.3 | Integrity pact (IP) shall be applicable for all tenders / contracts if indicated in NIT. This IP shall be issued as part of the Tender documents and shall be submitted by the bidder along with Techno-commercial bid duly filled, signed and stamped by the authorized signatory who signs the bid. Entering into this pact shall be a preliminary qualification. |
| 1.2 Submission of tenders | |
| 1.2.1 | The tenderers must submit their tenders to Officer inviting tender as per instructions in the NIT. |
| 1.2.2 | Tenders shall be submitted through E-Procurement portal as per instruction in NIT. Tenderers to upload offers well in advance in order to avoid last minute congestion in e-procurement website. However, after submission of the tender, the tenderer can re-submit revised tender but before due date and time of submission of tender as notified. |
| 1.2.3 | Tenders shall be opened by Officer of BHEL at the time and date as specified in the NIT. For this tender, bidders may attend through online mode, if provisions are available in e-procurement portal |
| 1.2.4 | Tenderers whose bids are found techno commercially qualified shall be notified through e-procurement system about the date and time of opening of the Price Bids. BHEL's decision in this regard shall be final and binding. |
| 1.2.5 | The information given in the tender documents is for general guidance and shall not be construed as contractually binding on BHEL/ Owner. All relevant site data/ information as may be necessary for bidding shall have to be obtained/ collected by the Tenderer. |
| 1.2.6 | The Tenderers are advised to physically visit the site to acquaint and satisfy themselves about the weather conditions, working culture in the area, socio-political environment, safety & security aspects, law & order situation, law of the land, transportation routes, various distances, surroundings of plant/ project premises together with all statutory, obligatory, mandatory requirements of various authorities and obtain for themselves all necessary information as to the risks, contingencies and all other circumstances, which may influence or affect the discharge of various obligations under the Contract during contract period including extended period (if any). |

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| 1.2.7 | The submission of bid will tantamount to due diligence having been done and it shall be deemed that: |
| a) | the Tenderer has obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works. |
| b) | the Tenderer accepts total responsibility for having foreseen all difficulties and costs of successfully completing the Works |
| c) | the Tenderer accepts that, the Contract Price shall not be adjusted to take account of any unforeseeable or unforeseen difficulties or costs and the Tenderer shall not raise any claims/ disputes against BHEL and/ or Owner at later date in any manner whatsoever. |
| 1.2.8 | The Tenderer shall mandatorily be required to submit "Site Visit Confirmation Declaration" along with the Technical Bid |
| 1.3 Language | |
| 1.3.1 | The tenderer shall quote the rates in English language and international numerals. These rates shall be entered in figures as well as in words. Tenderers are requested to refer the clauses of NIT/ Vol-II "Price Bid" for more details. For the purpose of the tenders, the metric system of units shall be used. |
| 1.3.2 | All entries in the tender shall either be typed or written legibly in ink. Erasing and over-writing is not permitted and may render such tenders liable for rejection. All cancellations and insertions shall be duly attested by the tenderer. |
| 1.4 Price discrepancy | |
| 1.4.1 | Price Bid opening: During opening of price bids, if there is any difference between the amount in figures and in words, the amount quoted by the bidder in words shall be taken as correct. |
| 1.4.2 | Reverse Auction: In case of Reverse Auction, the successful bidder shall undertake to execute the work as per overall price offered by him during the Reverse Auction process. (Guidelines as available on www.bhel.com on "supplier registration page"). |
| 1.5 Qualification of tenderers | |
| i) | Only tenderers who have previous experience in the work of the nature and description detailed in the Notice Inviting Tender and/or tender specification are expected to quote for this work duly detailing their experience along with offer. |
| ii) | Offers from tenderers who do not have proven and established experience in the field shall not be considered. |
| iii) | The offers of the bidders who are on the debarred list shall be rejected. Further, offer of the bidders, who engage the services of the debarred firms or associated with the debarred firm, for present bid, shall also be rejected. The list of debarred firms is available on BHEL web site www.bhel.com . (Refer clause 2.26). |
| iv) | Offers from tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt. of India shall not be considered. |
| 1.6 Evaluation of bids | |
| 1.6.1 | Technical Bids submitted by the tenderer will be opened first and evaluated for fulfilling the Pre- Qualification criteria and other conditions in NIT/Tender documents, based on documentary evidences submitted along with the offer. |
| 1.6.2 | In case the same qualifying experience is claimed by more than one agency, then: <ol style="list-style-type: none"> The agency who has executed the work as per documentary evidence submitted shall only be qualified. Scope of qualifying work should be totally with the agency who has executed and in case it is only labour and consumables without T&P, then the credentials of execution is assigned to the first agency and not to the agency who has executed only as labour supply contractor. Further, BHEL reserves the right to ask for any other proof for the said job. |



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| | b) However, if the same is on account of subletting, part of scope by one agency to another agency in a project of BHEL, experience of both the agencies may be considered for the sublet portion of the work provided subletting has been done with the approval of BHEL. |
| 1.6.3 | In case the qualifying experience is claimed by bidder is based on 'Work Order' and 'Experience Certificates' from any organization other than BHEL (main agency), then it shall be the responsibility of the bidder to submit (in addition to the experience certificate from main agency) relevant certificate regarding qualifying experience from the end Customer or the Turnkey-Contractor (if any) who has awarded the work to main agency, as a proof for having executed subject qualifying work. BHEL reserves the right to ask for any other proof for the said job. |
| 1.6.4 | Assessing Bidder's Capacity for executing the current tender shall be as per Notice Inviting Tender. |
| 1.6.5 | Price Bids of shortlisted bidders shall only be opened through the electronic price bid opening with/without Reverse Auction, at the discretion of BHEL. Unless specified otherwise in the tender, the L1 bidder amongst all the shortlisted bidders shall be considered for award. However, the L1 bidder shall have no claim on the award & BHEL reserves the right to award the tender at its sole discretion. |
| 1.6.6 | Price Bids of unqualified bidders shall not be opened. Reasons for rejection shall be intimated in due course either through system generated e-mail or through letter/e-mail after award to successful bidder. |
| 1.6.7 | Bidders are advised to also refer to clause no. 2.9.4 regarding evaluation of their performance in ongoing projects. |
| 1.7 Data to be enclosed | |
| | <i>Full information shall be given by the tenderer in respect of the following. Non-submission of this information may lead to rejection of the offer.</i> |
| i | INCOME TAX PERMANENT ACCOUNT NUMBER Certified copies of Permanent Account Numbers as allotted by Income Tax Department for the Company/Firm/Individual Partners etc. shall be furnished along with tender. |
| ii | ORGANIZATION CHART The organization chart of the tenderer's organization, including the names, addresses and contact information of the Directors/Partners shall be furnished along with the offer. |
| iii | An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor. |
| iv | IN CASE OF INDIVIDUAL TENDERER: His / her full name, address, PAN and place & nature of business. |
| v | IN CASE OF PARTNERSHIP FIRM: The names of all the partners and their addresses, copy of the partnership deed/instrument of partnership duly certified by the Notary Public shall be enclosed. |
| vi | IN CASE OF COMPANIES: |
| a) | Date and place of registration including date of commencement certificate in case of Public Companies (certified copies of Memorandum and articles of Association are also to be furnished). |
| b) | Nature of business carried on by the Company and the provisions of the Memorandum relating thereof. |
| 1.8 Authorization and attestation | |
| | Tenders shall be signed by a person duly authorized/empowered to do so, for which a Power of Attorney is to be submitted along with the tender offer. For company, a Power of Attorney (as per format in Annexure-15) shall be submitted. |

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| 1.9 Earnest Money Deposit | |
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| | BANK DETAILS FOR EMD & PERFORMANCE SECURITY SUBMISSION: For Electronic Fund Transfer the details are as below: a) Name of the Beneficiary: Bharat Heavy Electricals Limited b) Bank Particulars Name of the Company - BHARAT HEAVY ELECTRICALS LTD. Address of the company – Fabrication, Stamping & Insulator Plant (FSIP), Industrial Area, Jagdishpur Name of the bank –State Bank of India Bank branch – IGFCC-BRANCH, I A Jagdishpur City: Amethi-227817 Branch code - Account Number – 10405292240 Account type – Cash Credit IFSC code - SBIN0009072 |
| 1.9.1 | Every tender must be accompanied by the prescribed amount of Earnest Money Deposit (EMD) in the manner described herein. |
| i) | EMD shall be furnished before tender opening / along with the offer in full as per the amount indicated in the NIT. |
| ii) | The EMD up to an amount of Rs. 2 Lakh is to be paid only in the following forms: |
| a) | Cash deposit as permissible under the extant Income Tax Act (before tender opening). |
| b) | Electronic Fund Transfer credited in BHEL account (before tender opening). |
| c) | Banker's cheque / Pay order / Demand draft, in favour of 'Bharat Heavy Electricals Limited' and payable at Regional HQ issuing the tender (along with offer). |
| d) | Fixed Deposit Receipt (FDR) issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL) duly marking lien in favour for BHEL (along with offer). The Fixed Deposit in such cases shall be valid for at least six months from the due date of tender submission. |
| e) | Insurance Surety Bonds |
| f) | In case EMD amount is more than Rs. Two Lakhs, Tenderer has the option to submit the amount in excess of Rs. Two lakhs in the forms described above in clause no. 1.9.1. ii) (a) to (e) or in the form of Bank Guarantee from Scheduled Bank (along with the Offer). The Bank Guarantee in such cases shall be valid for at least six months from the due date of tender submission. The Bank Guarantee format for EMD shall be in the prescribed formats. |
| iii) | No other form of EMD remittance shall be acceptable to BHEL. |
| iv) | Proof of EMD: Bidder shall upload the scanned copy of EMD along with bid submission through BHEL e-procurement Portal. However, for the purpose of realization, the bidder shall send the demand draft/ banker's cheque/ pay order/ Bank Guarantee/ FDR/ Insurance Surety Bonds, in original, to the designated officer through post/courier or by hand within reasonable time. |
| 1.9.2 | EMD by the Tenderer will be forfeited as per NIT conditions, if: a) After opening the tender and within the offer validity period, the tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL or b) The successful Contractor, on whom the work has been awarded, fails to deposit the required Security deposit or commence the work within the period as per LOI/ LOA/ Contract or refuse to accept the LOI/LOA/Contract. |
| 1.9.3 | EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with |

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| | suppliers/ contractors” of BHEL and forfeited/ released based on the action as determined under these guidelines. |
| 1.9.4 | EMD shall not carry any interest. |
| 1.9.5 | EMD given by all unsuccessful tenderers shall be refunded normally within fifteen days of award of work. |
| 1.9.6 | Cash portion of EMD of successful tenderer will be retained as part of Security Deposit. EMD submitted in the form of Bank Guarantee/ FDR shall be retained by BHEL until the receipt of the Security Deposit. |
| 1.10 Security Deposit | |
| 1.10.1 | <p>Upon acceptance of Tender, the successful bidder shall be required to deposit as follows as Security Deposit towards fulfilment of any obligations in terms of the provisions of the contract.</p> <p>a. Works/service contract: The total amount of Security Deposit will be 10% of the total works/service contract value.</p> <p>b. Framework agreement: The total amount of Security Deposit will be 5% of the total FA Value.</p> <p>Case-I: Input tax credit is available to BHEL: Contract value means Total price excluding GST for cases where Input tax credit is available to BHEL.</p> <p>Case –II: Input tax credit is not available to BHEL: Contract value means Total price including GST for cases where input tax credit is not available to BHEL.</p> |
| 1.10.2 | The Security Deposit shall be furnished before start of the work by the contractor. |
| 1.10.3 | The required Security Deposit may be accepted in the following forms. |
| i) | Cash (as permissible under the extant Income Tax Act). |
| ii) | Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL. |
| iii) | Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL). |
| iv) | Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format for Security Deposit shall be in the prescribed formats. |
| v) | Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL). Specific lien in favour of BHEL on the FDR shall be marked and letter from the Bank having created such lien in the format shall be submitted along with FDR. |
| vi) | Insurance Surety Bonds. |
| | Note: |
| i. | BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith. |
| ii. | In case of delay in submission of Security Deposit, enhanced security deposit which would include interest (Repo rate + 4%) for the delayed period, shall be submitted by the bidder before submission of first bill |
| 1.10.4 | The Security Deposit shall not carry any interest. |
| 1.10.5 | In case the value of work exceeds the awarded / accepted value, the Security Deposit shall be correspondingly enhanced as given below: |

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| i) | The enhanced part of the Security Deposit shall be immediately deposited by the Contractor or adjusted against payments due to the Contractor. |
| ii) | Contract value for the purpose of operating the increased value of Security Deposit due to Quantity Variation, shall be exclusive of Price Variation Clause, Over Run Compensation and Extra works done on man-day rates. |
| iii) | The recoveries made from running bills can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, with the approval of competent authority of BHEL. |
| 1.10.6 | The validity of Bank Guarantees towards Security Deposit shall be valid till actual completion of work + 2 months. |
| 1.10.7 | BHEL reserves the right of forfeiture of Security Deposit in addition to other claims, damages and remedies in the event of the Contractor's failure to fulfil any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit against any claims of other contracts with BHEL by giving prior notice to the contractor. |
| 1.11 Return of security deposit | |
| | Security Deposit shall be released to the contractor upon fulfilment of contractual obligations as per terms of the contract including completion of Guarantee Period after deducting all expenses / other amounts due to BHEL under the contract. |
| 1.12 Bank Guarantees | |
| | Where ever Bank Guarantees are to be furnished/submitted by the contractor, the following shall be complied with |
| i) | Bank Guarantees shall be from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. Bank Guarantees issued by Co-Operative Banks/ Financial Institutions shall not be accepted. |
| ii) | The Bank Guarantees shall be as per prescribed formats. |
| iii) | It is the responsibility of the bidder to get the Bank Guarantees revalidated/extended for the required period as per the advice of BHEL FSIP WCC Executive. BHEL shall not be liable for issue of any reminders regarding expiry of the Bank Guarantees. |
| iv) | In case extension/further extensions of any Bank Guarantees are not required, the bidders shall ensure that the same is explicitly endorsed by BHEL FSIP executive and submitted to BHEL FSIP WCC. |
| v) | In case the Bank Guarantees are not extended before the expiry date, BHEL reserves the right to invoke the same by informing the concerned Bank in writing, without any advance notice/communication to the concerned bidder. |
| vi) | Bidders to note that any corrections to Bank Guarantees shall be done by the issuing Bank, only through an amendment in an appropriate non judicial stamp paper. |
| vii) | The Original Bank Guarantee shall be submitted to BHEL FSIP Works Contract Cell (WCC). |
| 1.13 Validity of offer | |
| | The rates in the Tender shall be kept open for acceptance for a minimum period of 90 days from latest due date of offer submission (including extension, if any). In case BHEL (Bharat Heavy Electricals Ltd) calls for negotiations, such negotiations shall not amount to cancellation or withdrawal of the original offer which shall be binding on the tenderers. |
| 1.14 Execution of contract agreement | |
| | The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Award by Bharat Heavy Electricals Limited. |
| | The successful tenderer shall be required to execute an agreement in the prescribed form, with BHEL, within a reasonable time after the acceptance of the Letter of Award, and in |



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| | any case before releasing the first running bill. The contract agreement shall be signed by a person duly authorized/empowered by the tenderer. |
| 1.15 Rejection of tender and other conditions | |
| 1.15.1 | The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender nor any tender and reserves to itself full rights for the following without assigning any reasons whatsoever: - a) To reject any or all of the tenders. b) To split up the work amongst two or more tenderers as per NIT. c) To award the work in part if specified in NIT. d) In case of either of the contingencies stated in (b) and (c) above, the time for completion as stipulated in the tender shall be applicable. |
| 1.15.2 | Conditional tenders, unsolicited tenders, tenders which are incomplete or not in the form specified or defective or have been materially altered or not in accordance with the tender conditions, specifications etc. are liable to be rejected. |
| 1.15.3 | Tenders are liable to be rejected in case of unsatisfactory performance of the tenderer with BHEL or tenderer under suspension (debarred) by any unit / region / division of BHEL or tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt of India. BHEL reserves the right to not consider a bidder for further processing of tender in case it is observed that they are overloaded and may not be in a position to execute this job as per the required schedule in STC. The decision of BHEL will be final in this regard. |
| 1.15.4 | <p>If a tenderer who is a proprietor expires after the submission of his tender or after the acceptance of his tender, BHEL may at their discretion, cancel such tender. If a partner of a firm expires after the submission of tender or after the acceptance of the tender, BHEL may then cancel such tender at their discretion, unless the firm retains its character. In case BHEL resolves to cancel the tender under this clause, BHEL will issue a notice in this regard containing reasons as to the cancellation of tender. The contractor shall be required to furnish his response to such notice within a period of 14 days from the date of receipt of such notice through any means (BHEL reserves the right to decrease the period upto 05 days). BHEL after due consideration of the representation made by contractor shall communicate its final decision within a reasonable period.</p> <p>In case contractor fails to submit any response to the notice issued by BHEL within the period stipulated in the notice, BHEL at its discretion may proceed to cancel the contract.</p> <p>Contractor shall not be eligible for any compensation whatsoever for the cancellation of contract under this clause</p> |
| 1.15.5 | BHEL will not be bound by any Power of Attorney granted by changes in the composition of the firm made subsequent to the execution of the contract. BHEL may, however, recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned. |
| 1.15.6 | If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract if awarded and forfeit the Earnest Money/Security Deposit/any other money due. |
| 1.15.7 | Canvassing in any form in connection with the tenders submitted by the Tenderer shall make his offer liable to rejection. |
| 1.15.8 | In case the Proprietor, Partner or Director of the Company/Firm submitting the Tender, has any relative or relation employed in BHEL, the authority inviting the Tender shall be informed of the fact as per specified format, along with the Offer. Failing to do so, BHEL |

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| | may, at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit. |
| 1.15.9 | The successful tenderer (Contractor) shall not sub-contract any portion of work detailed in the tender specification undertaken by him without written permission of BHEL's Executive in charge. BHEL, at its discretion, may consider the written request from the Contractor and permit subletting of part scope. However, the Contractor is solely responsible to BHEL for the work awarded to him. |
| 1.15.10 | The Tender submitted by a techno commercially qualified tenderer shall become the property of BHEL who shall be under no obligation to return the same to the bidder. |
| 1.15.11 | -blank- |
| 1.15.12 | BHEL shall not be liable for any expenses incurred by the bidder in the preparation of the tender irrespective of whether the tender is accepted or not. |
| 1.16 Intimation of change of name/ re-constitution of the organization | |
| | In the event of the organization (Proprietorship/Partnership/Company) undergoing any change of name or reconstitution, prior intimation of the same shall be given to BHEL. Upon such changes coming into effect, the same is to be intimated to BHEL immediately with supporting documents as applicable. |
| Chapter-2 | |
| 2.1 DEFINITION: | |
| | The following terms shall have the meaning hereby assigned to them except where the context otherwise requires |
| 1. | BHEL shall mean Bharat Heavy Electricals Limited, a company registered under Indian Companies Act 1956, having its Registered Office at BHEL HOUSE, SIRI FORT, NEW DELHI – 110 049, and its office at BHEL FSIP Jagdishpur, Dist. Amethi (UP), 227817. |
| 2. | EXECUTIVE DIRECTOR” or “GENERAL MANAGER (In- charge)” or “GENERAL MANAGER” shall mean the Officer in Administrative charge of the respective UNIT/Power Sector Region. |
| 3. | COMPETENT AUTHORITY” shall mean BHEL Officers who are empowered to act on behalf of BHEL. |
| 4. | ENGINEER” or “ENGINEER IN CHARGE” shall mean an Officer of BHEL as may be duly appointed and authorized by BHEL to act as “Engineer” on his behalf for the purpose of the Contract, to perform the duty set forth in this General Conditions of Contract and other Contract documents. The term also includes ‘CONSTRUCTION MANAGER’ or ‘SITE INCHARGE’ as well as Officers at Site or at the Headquarters of the respective Power Sector Regions. For the purpose of joint measurement, verification, certification and/ or approval of the work and/ or documents under the contract the word "Engineer" or "Engineer Incharge" shall be deemed to include the Engineers of the Customer and/ or his Consultant also. |
| 5. | “SITE” shall mean the places or place at which the plants/equipments are to be erected and services are to be performed as per the specification of this Tender. |
| 6. | CLIENT OF BHEL” or “CUSTOMER” shall mean the project authorities with whom BHEL has entered into a contract for supply of equipments or provision of services. |
| 7. | “CONTRACTOR” shall mean the successful Bidder/Tenderer who is awarded the Contract and shall include the Contractor's successors, heirs, executors, administrators and permitted assigns. |
| 8. | “CONTRACT” or “CONTRACT DOCUMENT” shall mean and includes the Agreement or Work Order, the accepted appendices of Rates, Schedules, Quantities if any, Offer submitted by contractor including acceptance to General Conditions of Contract, Special Conditions of Contract, Instructions to the Tenderers, Drawings, Technical Specifications, the Special Specifications if any, the Tender documents, subsequent amendments |

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| | /corrigendum to Tender mutually agreed upon and the Letter of Intent/Award/Acceptance issued by BHEL. Any conditions or terms stipulated by the contractor in the tender documents or subsequent letters shall not form part of the contract unless, specifically accepted in writing by BHEL in the Letter of Intent/Award and incorporated in the agreement or amendment thereof. |
| 9. | “GENERAL CONDITIONS OF CONTRACT” shall mean the ‘Instructions to Tenderers’ and ‘General Conditions of Contract’ pertaining to the work for which above tenders have been called for. |
| 10. | “TENDER SPECIFICATION” or “TENDER” or “TENDER DOCUMENTS” shall mean General Conditions, Common Conditions, Special Conditions, Price Bid, Rate Schedule, Technical Specifications, Appendices, Annexures, Corrigendums, Amendments, Forms, Procedures, Site information etc. and drawings/documents pertaining to the work for which the tenderers are required to submit their offers. Individual specification number will be assigned to each Tender Specification. |
| 11. | “LETTER OF INTENT/ AWARD” shall mean the intimation by a Letter/Fax/email to the tenderer that the tender has been accepted in accordance with provisions contained in the letter. The responsibility of the contractor commences from the date of issue of this letter and all terms and conditions of the contract are applicable from this date. |
| 12. | “COMPLETION TIME” shall mean the period by ‘date/month’ specified in the ‘Letter of Intent/Award’ or date mutually agreed upon for handing over of the intended scope of work, the erected equipment/plant which are found acceptable by the Engineer, being of required standard and conforming to the specifications of the Contract. |
| 13. | “PLANT” shall mean and connote the entire assembly of the plant and equipments covered by the contract. |
| 14. | “EQUIPMENT” shall mean equipment, machineries, materials, structural, electricals and other components of the plant covered by the contract. |
| 15. | “TESTS” shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL in order to ascertain the quality, workmanship, performance and efficiency of the contractor or part thereof. |
| 16. | “APPROVED”, “DIRECTED” or “INSTRUCTED” shall mean approved, directed or instructed by BHEL. |
| 17. | “WORK or CONTRACT WORK” shall mean and include supply of all categories of labour, specified consumables, tools and tackles and Plants required for complete and satisfactory site transportation, handling, stacking, storing, erecting, testing and commissioning of the equipments to the entire satisfaction of BHEL. |
| 18. | “SINGULAR AND PLURALS ETC” words carrying singular number shall also include plural and vice versa, where the context so requires. Words imparting the masculine Gender shall be taken to include the feminine Gender and words imparting persons shall include any Company or Associations or Body of Individuals, whether incorporated or not. |
| 19. | “HEADING” – The heading in these General Conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken as instructions thereof or of the contract. |
| 20. | “MONTH” shall mean calendar month unless otherwise specified in the Tender. |
| 21. | ‘Day’ or ‘Days’ unless herein otherwise expressly defined shall mean calendar day or days of twenty-four (24) hours each. A Week shall mean continuous period of seven (7) days. |
| 22. | “COMMISSIONING” shall mean the synchronization testing and achieving functional operation of the Equipment with associated system after all initial adjustments, trials, |



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| | cleaning, re-assembly required at site if any, have been completed and Equipment with associated system is ready for taking into service. |
| 23. | “WRITING” shall include any manuscript type written or hand written or printed statement or electronically transmitted messages, under the signature or seal or transmittal of BHEL. |
| 24. | “TEMPORARY WORK” shall mean all temporary works for every kind required in or for the execution, completion, maintenance of the work. |
| 25. | ‘CONTRACT PRICE’ or ‘CONTRACT VALUE’ shall mean the sum mentioned in the LOI/LOA/Contract Agreement subject to such additions thereto or deductions there from as may be made under provisions hereinafter contained. |
| 26. | ‘EXECUTED CONTRACT VALUE’ shall mean actual value of works executed by the contractor and certified by BHEL. This value shall not include PVC, ORC, Extra Works and Taxes. |
| 27. | “COMMENCEMENT DATE” or “START DATE” shall mean the commencement/start of work at Site as per terms defined in the Tender. |
| 28. | “SHORT CLOSING” or “FORE CLOSING” of Contract shall mean the premature closing of Contract, for reasons not attributable to the contractor and mutually agreed between BHEL and the contractor. |
| 29. | “TERMINATION” of Contract shall mean the pre mature closing of contract due to reasons as mentioned in the contract. |
| 30. | “DE MOBILIZATION” shall mean the temporary winding up of Site establishment by Contractor leading to suspension of works temporarily for reasons not attributable to the contractor. |
| 31. | “RE MOBILIZATION” shall mean the resumption of work with all resources required for the work after demobilization. |
| 32. | “OVERRUN CHARGES (ORC)” shall mean and include all the costs incurred by the Contractor during the extended period of the contract, including but not limited to any cost arising out of idle labour, administrative cost, T & P and machinery. |



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| 2.2 Law Governing The Contract | |
| The Contract shall be governed by the Laws of India and shall be operated complying with all the relevant Acts / Rules / Regulations implemented / to be implemented by the Govt. of India / Various State Governments / Union territories regarding road transportation as amended from time to time. | |
| 2.3 Issue of notice | |
| 2.3.1 | Service of notice to the Contractor Any notice to be given to the Contractor under the terms of the contract shall be served by sending the same by Email/ Registered Post/Speed Post to or leaving the same at the Contractor's last known address of the principal place of business (or in the event of the contractor being a company, to or at its Registered Office). In case of change of address, the notice shall be served at changed address as notified in writing by the Contractor to BHEL. Such dispatch or display posting or leaving of the notice as the case may be shall be deemed to be good service of such notice and the time mentioned to the condition for doing any act after notice shall be reckoned from the date so mentioned in such notice. |
| 2.3.2 | Service of notice to on BHEL Any notice to be given to BHEL In-charge of the Region under the terms of the Contract shall be served by sending the same by Registered/AD or Speed post to BHEL address or changed address as notified in writing by BHEL to the Contractor. |
| 2.4 Use of land | |
| | No land belonging to BHEL or their Customer under temporary possession of BHEL shall be occupied by the contractor without written permission of BHEL. |
| 2.5 Commencement of work | |
| 2.5.1 | The contractor shall commence the work as per the time indicated in the Letter of Intent/Award from BHEL and shall proceed with the same with due expedition without delay. |
| 2.5.2 | If the contractor fails to start the work within stipulated time as per LOI/ LOA or as intimated by BHEL, then BHEL at its sole discretion shall have the right to cancel the contract. The Earnest Money and/or Security Deposit furnished by the contractor to under this tender will stand forfeited without any further reference to him and without prejudice to BHEL's other rights and remedies under this contract and the applicable laws in this regard. |
| 2.5.3 | All the work shall be carried out under the direction and to the satisfaction of BHEL. |
| 2.6 Terms of Payment | |
| A | <ol style="list-style-type: none"> All payments due to the contractors shall be made by e mode only, unless otherwise found operationally difficult for reasons to be recorded in writing and approved by contract executing department. For progress running bill payments: - The Contractor shall present detailed measurement sheets in triplicate, duly indicating all relevant details based on technical documents and connected drawings for work done during the month/period under various categories in line with terms of payment as per contract. The basis of arriving at the quantities, weights shall be relevant documents and drawings released by BHEL. These measurement sheets shall be prepared jointly with BHEL Engineers and signed by both the parties. These measurement sheets will be checked by BHEL Engineer and quantities and percentage eligible for payment under various groups shall be decided by BHEL Engineer. The abstract of quantities and percentage so arrived at based on the terms of payment shall be entered in Measurement Book and signed by both the parties. |

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| | <p>4. Based on the above quantities, contractor shall prepare the bills, along with statutory documents, in prescribed format and work out the financial value. These will be entered in Measurement Book and signed by both the parties. Payment shall be made by BHEL after effecting the recoveries due from the contractor.</p> <p>5. All recoveries due from the contractor for the month/period shall be effected in full from the corresponding running bills unless specific approval from the competent authorities is obtained to the contrary.</p> <p>6. Measurement shall be restricted to that portion of work for which it is required to ascertain the financial liability of BHEL under this contract.</p> <p>7. The measurement shall be taken jointly by persons authorized on the part of BHEL and by the Contractor.</p> <p>8. The Contractor shall bear the expenditure involved if any, in making the measurements and testing of materials to be used/ used in the work. The contractor shall, without extra charges, provide all the assistance with appliances and other things necessary for measurement.</p> <p>9. If at any time due to any reason whatsoever, it becomes necessary to re-measure the work done in full or in part, the expenses towards such re measurements shall be borne by the contractor unless such re measurements are warranted solely for reasons not attributable to contractor.</p> <p>10. Passing of bills covered by such measurements does not amount to acceptance of the completion of the work measured. Any left out work has to be completed, if pointed out at a later date by BHEL.</p> <p>Final measurement bill shall be prepared in the final bill format prescribed for the purpose based on the certificate issued by BHEL Engineer that entire works as stipulated in tender specification has been completed in all respects to the entire satisfaction of BHEL. The Contractor shall submit the final bill in line with WAM 7 format as per tender documents with an additional recording of the dispute, if any and shall sign with the following declaration: I/ We hereby certify that I/We have performed the work as per the terms and conditions of Contract Agreement/Work Order No.....dated.....for which payment is claimed as above and that I/We have no further claim under this agreement/work order* except for the following (nature of claim with details & amount claimed, if any. NIL may be mentioned if there are no further claims). – a)..... b)..... c)</p> <p>It is agreed that the authorized signatory of Contractor shall necessarily record his claims/ dispute in Form WAM 7 only and any claim(s)/ dispute in any other form/ letter shall not be taken cognizance of by BHEL and admissible before any forum. BHEL shall make the payment of undisputed amount within the stipulated time without any unreasonable delay.</p> <p>All the tools and tackles loaned to him should be returned in satisfactory condition to BHEL. The abstract of final quantities and financial values shall also be entered in the Measurement Books and signed by both parties to the contract. The Final Bill shall be prepared and paid within a reasonable time after completion of work. (Refer Clause No 2.23 also for Running bills)</p> |
| B | <p>For Service Point Contract: The payment under the service contract shall be made on monthly basis as per the agreed rates only after the completion of the services as per scope of work and after complying / ensuring all the statutory / contractual obligations.</p> |

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| C | <p>Payment Timeline:</p> <p>For non MSME Bidders, 100% payment shall be released within 90 days from the date of acknowledged receipt & acceptance of material/Work/Service at site and submission of billing documents.</p> <p>For MSE Bidders, 100% payment shall be released within 45 days from the date of acknowledged receipt & acceptance of material/Work/Service at site and submission of billing documents.</p> <p>For MEDIUM ENTERPRISES Bidders, 100% payment shall be released within 60 days upon receipt & acceptance of material/Work/Service at site and submission of billing documents.</p> <p>*MSE/MEDIUM benefit as per above will not be applicable for Traders/Distributor/Sole agent/Works Contract.</p> |
| 2.7 Rights of BHEL | |
| BHEL reserves the following rights in respect of this contract during the original contract period or its extensions if any, as per the provisions of the contract, without entitling the contractor for any compensation. | |
| <p>2.7.1 To withdraw any portion of work and/or to restrict/alter quantum of work as indicated in the contract during the progress of work and get it done through other agencies to fulfil BHEL's commitment to its customer or the date of completion is advance due to other emergent reasons/ BHEL's obligation to its customer.</p> <p>Where the contractor fails to deploy adequate manpower to meet the contractual target, BHEL reserves the right to deploy manpower to meet such shortfall, through any other agency for expediting activities in the interest of the project. Supplied manpower shall be put on job by the contractor. Fulfilling of all obligations towards payments and other statutory compliances related to such manpower shall be the contractor's responsibility. In case of contractor's failure to fulfil his obligations in respect of such manpower, BHEL shall be entitled to take action as provided herein.</p> | |
| 2.7.2 Breach of Contract, Remedies and Termination | |
| 2.7.2.1 The following shall amount to breach of contract: | |
| <ul style="list-style-type: none"> i. Non-supply of material/ non-completion of work by the Supplier/Vendor within scheduled delivery/ completion period as per contract or as extended from time to time. ii. The Supplier/Vendor fails to perform as per the activity schedule and there are sufficient reasons even before expiry of the delivery/ completion period to justify that supplies shall be inordinately delayed beyond contractual delivery/ completion period. iii. The Supplier/Vendor delivers equipment/ material not of the contracted quality iv. The Supplier/Vendor fails to replace the defective equipment/ material/ component as per guarantee clause. v. Withdrawal from or abandonment of the work by the Supplier/Vendor before completion as per contract. vi. Assignment, transfer, subletting of Contract by the Supplier/Vendor without BHEL's written permission resulting in termination of Contract or part thereof by BHEL. vii. Non-compliance to any contractual condition or any other default attributable to Supplier/Vendor. viii. Any other reason(s) attributable to Vendor towards failure of performance of contract. In case of breach of contract, BHEL shall have the right to terminate the Purchase Order/ | |

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Contract either in whole or in part thereof without any compensation to the Supplier/Vendor.

- ix. Any of the declarations furnished by the contractor at the time of bidding and/ or entering into the contract for supply are found untruthful and such declarations were of a nature that could have resulted in non-award of contract to the contractor or could expose BHEL and/ or Owner to adverse consequences, financial or otherwise.
- x. Supplier/Vendor is convicted of any offence involving corrupt business practices, antinational activities or any such offence that compromises the business ethics of BHEL, in violation of the Integrity Pact entered into with BHEL has the potential to harm the overall business of BHEL/ Owner.

Note: - Once BHEL considers that a breach of contract has occurred on the part of Supplier/Vendor, BHEL shall notify the Supplier/Vendor by way of notice in this regard. Contractor shall be given an opportunity to rectify the reasons causing the breach of contract within a period of 14 days.

In case the contractor fails to remedy the breach, as mentioned in the notice, to the satisfaction of BHEL, BHEL shall have the right to take recourse to any of the remedial actions available to it under the relevant provisions of contract.

LD against delay in executed work in case of Termination of Contract:

LD against delay in executed work shall be calculated in line with LD clause no. 2.7.9 of GCC, for the delay attributable to contractor. For limiting the maximum value of LD, contract value shall be taken as Executed Value of work till termination of contract.

Method for calculation of "LD against delay in executed work in case of termination of contract" is given below.

- i). Let the time period from scheduled date of start of work till termination of contract excluding the period of Hold (if any) not attributable to contractor = T_1
- ii) Let the value of executed work till the time of termination of contract = X
- iii) Let the Total Executable Value of work for which inputs/fronts were made available to contractor and were planned for execution till termination of contract = Y
- iv) Delay in executed work attributable to contractor i.e. $T_2 = [1 - (X/Y)] \times T_1$
- v). LD shall be calculated in line with LD clause (clause 2.7.9 of GCC) of the Contract for the delay attributable to contractor taking "X" as Contract Value and "T2" as period of delay attributable to contractor.

2.7.2.2 Remedies in case of Breach of Contract.

- i. Wherein the period as stipulated in the notice issued under clause 14.1 has expired and Contractor has failed to remedy the breach, BHEL will have the right to terminate the contract on the ground of "Breach of Contract" without any further notice to contractor.
- ii. Upon termination of contract, BHEL shall be entitled to recover an amount equivalent to 10% of the Contract Value for the damages on account of breach of contract committed by the Contractor. This amount shall be recovered by way of encashing the security instruments like performance bank guarantee etc available with BHEL against the said contract. In case the value of the security instruments available is less than 10% of the contract value, the balance amount shall be recovered from other financial remedies (i.e. available bills of the contractor, retention amount, from the money due to the Contractor etc. with BHEL) or the other legal remedies shall be pursued.

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- iii. wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case no security instruments are available or the value of the security instruments available is less than 10% of the contract value, the 10% of the contract value or the balance amount, as the case may be, will be recovered in all or any of the following manners:
- iv. In case the amount recovered under sub clause (a) above is not sufficient to fulfil the amount recoverable then; a demand notices to deposit the balance amount within 30 days shall be issued to Contractor.
- v. If Contractor fails to deposit the balance amount within the period as prescribed in demand notice, following action shall be taken for recovery of the balance amount:
- a) from dues available in the form of Bills payable to defaulted Contractor against the same contract.
 - b) If it is not possible to recover the dues available from the same contract or dues are insufficient to meet the recoverable amount, balance amount shall be recovered from any money(s) payable to Contractor under any contract with other Units of BHEL including recovery from security deposits or any other deposit available in the form of security instruments of any kind against Security deposit or EMD.
 - c) In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted Contractor.
- vi. It is an agreed term of contract that this amount shall be a genuine pre-estimate of damages that BHEL would incur in completion of balance contractual obligation of the contract through any other agency and BHEL will not be required to furnish any other evidence to the Contractor for the purpose of estimation of damages.
- vii. In addition to the above, imposition of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.
- Note:
- 1 The defaulting contractor shall not be eligible for participation in any of the future enquiries floated by BHEL to complete the balance work. The defaulting contractor shall mean and include:
 - a. In case defaulted contractor is the Sole Proprietorship Firm, any Sole Proprietorship Firm owned by same Sole Proprietor.
 - b. In case defaulted contractor is The Partnership Firm, any firm comprising of same partners/ some of the same partners (but not including any new partner); or sole proprietorship firm owned by any partner(s) as a sole proprietor.
- 2.7.3 In case Contractor fails to deploy the resources as per requirement informed by BHEL in writing to expedite the work, BHEL can deploy own/hired/otherwise arranged resources and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads or as defined in TCC.
- 2.7.4 To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contract with their customer are terminated for any reason, whatsoever.
- 2.7.5 Whenever any Claim or Claims for payment of any sum of money(s) arises under this or any other contract against the contractor, BHEL shall be entitled to withhold and also have a lien to retain such sum of money(s) in whole or in part from any money(s) payable to contractor and/or security deposits furnished or deducted in cash from the bills of contractor, (if any) under this contract. In the event of the securities or the amounts payable to Contractor, being insufficient to cover BHEL claims, then BHEL shall be entitled to withhold and have a lien to

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the extent of such claims from any sum or sums found payable or which at any time thereafter may become payable to the contractor under this or any other contract with BHEL.

- a. Claim or Claims for payment of any sum of money(s) arising from the Contractor under this or any other contract against the contractor, shall mean, the sum of money(s) actually incurred by BHEL in fulfilling the contractual responsibilities of contractor under the contract, to which he has failed to fulfil plus applicable overheads (@ 5%) along with interest as applicable under the Contract on total amount (i.e. money actually incurred plus overheads).
 - b. It is an agreed term of the contract that, the sum or sums of money so withheld or retained under the lien by BHEL will be kept withheld or retained as such by BHEL till the claims arising out of this or any other contract are finally adjudicated wither through Arbitration or a Court of competent jurisdiction as the case may be in accordance with the terms of contract. Intimation given by the BHEL Engineer regarding withholding of such money(s) shall be considered as sufficient and relevant date for all purposes. No Interest shall be payable on such sum(s) of money which becomes due or as the case may be adjudged to be due from BHEL to Contractor, whether under contract or otherwise.
 - c. Where the contractor is a partnership firm, BHEL shall be entitled to withhold and also have a lien to retain towards such claims in whole or in part, from any other money(s) payable to any partner, whether in his individual capacity or otherwise.
 - d. If any money(s) shall, as a result of any claim or application made under the relevant provisions of any Labour Welfare Act and/ or Rules, including but not limited to Contract Labour Regulation & Abolition Act, Minimum Wages Act, Payment of Gratuity Act, BOCW (RE&CS) Act, Provident Fund Act, Employee State Insurance Act, be directed to be paid by the BHEL, such money shall be deemed to be moneys payable to the BHEL by the Contractor.
 - e. Where the Contractor fails to repay to BHEL such moneys along with applicable overheads (@ 5%) and interest, as aforesaid within seven days of being demanded, BHEL shall be entitled to recover the same from Contractor's bills/ Security Deposit or any other money(s) payable to Contractor under this Contract or any other Contract with BHEL.
- 2.7.6 While every endeavour will be made by BHEL to this end, yet BHEL cannot guarantee uninterrupted work due to conditions beyond its control. The Contractor will not be normally entitled for any compensation/extra payment on this account unless otherwise specified elsewhere in the contract.
- 2.7.7 BHEL may permit or direct contractor to demobilize and remobilize at a future date as intimated by BHEL in case of following situations for reasons other than Force majeure conditions and not attributable to contractor:
- i) suspension of work(s) at a Project either by BHEL or Customer,
 - or**
 - ii) where work comes to a complete halt or reaches a stage wherein worthwhile works cannot be executed and there is no possibility of commencement of work for a period of not less than three months

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In such cases, charges towards demobilization and remobilization shall be as decided by BHEL after successful remobilization by contractor at site, and decision of BHEL shall be final and binding on the contractor. After remobilization, all conditions as per contract shall become applicable. In case Contractor does not remobilize with adequate resources or does not start the work within the period as intimated, then BHEL reserves the right to terminate the contract and effect remedies under Clause 2.7.2.2. In case of any conflict, BHEL decision in this regard shall be final and binding on the contractor.

2.7.8 In the unforeseen event of inordinate delay in receipt of materials, drawings, fronts etc. due to which inordinate discontinuity of work is anticipated, BHEL on its own or contractor's request at its discretion may consider to short close the contract in any of the following cases:

- The balance works (including but not limited to Trial Operation, PG Test etc.) are minor vis a vis the scope of work envisaged as per the contract.
- There has been no significant work in past 6 months OR no significant work is expected in next 6 months (example in Hydro projects or in projects where work has stopped due to reasons beyond the control of BHEL).
- The balance works cannot be done within a reasonable period of time as they are dependent on unit shut down or on other facilities of customer or any other such reasons not attributable to the contractor.

At the point of requesting for short closure, contractor shall establish that he has completed all works possible of completion and he is not able to proceed with the balance works due to constraints beyond his control. In such a case, the estimated value of the unexecuted portion of work (or estimated value of services to be provided for carrying out milestone/stage payments like Trial Operation/PG Test etc.) as decided by BHEL, shall however be reduced from the final contract value.

Note: The Contractor shall not be eligible for any compensation on account of Quantity Variation arising out of short-closure of contract as per clause no. 2.7.8 (b) above.

2.7.9 LIQUIDATED DAMAGES

Liquidated Damages, wherever referred under this Tender/Agreement, shall mean and refer to the damages, not in the nature of penalty, which the contractor agrees to pay in the event of delay in delivery of stores, installation, commissioning, breach of contract etc. as the case may be.

Liquidated Damages leviable upon the contractor is a sum which is agreed by the parties as a reasonable and genuine pre-estimate of damages which will be suffered by BHEL on account of delay/breach on the part of the contractor.

Liquidated Damages shall be calculated in the manner stipulated hereinafter:

In case the work is not completed within the stipulated time period, BHEL at its discretion may grant provisional time extension to contractor for the sole purpose of completion of balance works keeping its right reserved under the contract and law.

Grant of any provisional time extension shall by no means be considered as waiver of BHEL rights under the contract or law.

After the completion of work, duly certified by Engineer Incharge, a comprehensive delay analysis shall be carried out to ascertain the attribution of delays in the provisional time extensions granted to contractor. The delay analysis shall record:

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- (a) Delays solely attributable to contractor
- (b) Delays attributable to BHEL
- (c) Delays on account of Force Majeure (as specified elsewhere in the contract).

The total period under the final time extension shall be equal to the period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/ levied for the portion of time extensions solely attributable to contractor and recoverable from the dues payable to the contractor.

For the periods, wherein the delay as per the comprehensive delay analysis carried out is solely attributable to contractor, BHEL shall have the right to impose Liquidated Damage at the rate of 0.5% of the contract value, per week of delay or part thereof subject to a maximum of 10% of the contract value.

- (d) Contract Value for this purpose, shall be the final executed value exclusive of ORC, Extra Works executed on Man-day rate basis, Supplementary/ Additional Items and PVC. Before levying LD, the contractor shall be duly intimated the amount and reasons thereof for imposition of LD.

2.8 Responsibilities of the Contractor In Respect Of Local Laws, employment of Workers etc.

The following are the responsibilities of the contractor in respect of observance of local laws, employment of personnel, payment of taxes etc. The subcontractor shall fully indemnify BHEL against any claims of whatsoever nature arising due to the failure of the contractor in discharging any of his responsibilities hereunder:

- 2.8.1 As far as possible, Unskilled Workers shall be engaged from the local areas in which the work is being executed.
- 2.8.2 The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals and religious and other customs.
- 2.8.3 The contractor shall comply with all applicable State and Central Laws, Statutory Rules, Regulations, Notifications etc. such as Payment of Wages Act, Minimum Wages Act, Workmen Compensation Act, Employer's Liability Act, Industrial Disputes Act, Employers Provident Fund and Miscellaneous Provisions Act, 1952, Employees State Insurance Scheme, Contract Labour (Regulation and Abolition) Act, 1970, Payment of Bonus & Gratuity Act, Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996, The Building and Other Construction Workers' Welfare Cess Act 1996 and other Acts, Rules, and Regulations for labour/workers as applicable and as may be enacted by the State Government and Central Govt. during the tenure of the Contract and having force or jurisdiction at Site. The Contractor shall also comply with provisions of and give all such notices to the local Governing Body, Police and other relevant Authorities as may be required by the Law. The Contractor shall without any fail maintain all the registers/records in proper formats as per all the Acts, Rules and Regulations mentioned in this clause 2.8.3.
- 2.8.4 The Contractor shall obtain independent License under the Contract Labour (Regulations and Abolition) Act, 1970 for engaging contract labour as required from the concerned Authorities based on the certificate (Form- V or as applicable) issued by the Principal Employer/Customer.

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- 2.8.5 The contractor shall pay and bear all taxes, fees, license charges, Cess, duties, deposits, tolls, royalties, commission or other charges which may be leviable on account of his operations in executing the contract.
- 2.8.6 While BHEL would pay the inspection fees and Registration fees of Boiler/Electrical Inspectorate, all other arrangements for site visits periodically by the Inspectorate to site, Inspection certificate etc. will have to be made by contractor. However, BHEL will not make any payment to the Inspectorate in connection with contractor's Welders/Electricians qualification tests etc.
- 2.8.7 Contractor shall be responsible for provision of Health and Sanitary arrangements (more particularly described in Contract Labour Regulation & Abolition Act), Safety precautions etc. as may be required for safe and satisfactory execution of contract.
- 2.8.8 The contractor shall be responsible for proper accommodation including adequate medical facilities for personnel employed by him.
- 2.8.9 The contractor shall be responsible for the proper behaviour and observance of all regulations by the staff employed by him.
- 2.8.10 The contractor shall ensure that no damage is caused to any person/property of other parties working at site/company" premises. If any such damage is caused, it is responsibility of the contractor to make good the losses or compensate for the same.
- 2.8.11 All the properties/equipment/components of BHEL/their Client/Customer loaned with or without deposit to the contractor in connection with the contract shall remain properties of BHEL/their Client/Customer.
- 2.8.12 The contractor shall use such properties for the purpose of execution of this contract. All such properties/equipments/components shall be deemed to be in good condition when received by the contractor unless he notifies within 48 hours to the contrary. The contractor shall return them in good condition as and when required by BHEL/their Client. In case of non-return, loss, damage, repairs etc. the cost thereof as may be fixed by BHEL Engineer will be recovered from the contractor.
- 2.8.13 In case the contractor is required to undertake any work outside the scope of this contract, the rates payable shall be those mutually agreed upon if the item rates are not mentioned in existing contract.
- 2.8.14 Any delay in completion of works/or non-achievement of periodical targets/or non-execution of contract due to the reasons attributable to the contractor, the same may have to be compensated by the contractor either by increasing manpower and resources or by working extra hours and/or by working more than one shift. All these are to be carried out by the contractor at no extra cost.
- 2.8.15 The contractor shall arrange, coordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises.
- 2.8.16 All safety rules and codes applied by the Customer /BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards, slings etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents, fire hazards. Due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of Clerical staff, watch and ward, store keepers to take care of equipment/materials and construction tools and tackles shall be posted at site by the contractor till the completion of work under this contract.

The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per prescribed standards and practices.

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- Contractor has to ensure the implementation of Health, Safety and Environment (HSE) requirements as per directions given by BHEL/Customer. The contractor has to assist in HSE audit by BHEL/Customer and submit compliance Report. The contractor has to generate and submit record/reports as per HSE plan/activities as per instruction of BHEL/Customer.
- 2.8.17 The contractor shall be directly responsible for payment of wages to his workmen/labours before the expiry of seven days from the last day of wage period and to ensure disbursement of wages in the presence of the representative from BHEL A pay roll sheet giving all the payments given to the workers and duly signed by the contractor's representative should be furnished to BHEL site for the purpose of maintaining the records for compliance,
- Contractor shall create awareness amongst their workforce by helping & encouraging in opening bank accounts and to encourage them to adopt digital mode of transactions. While releasing wages/ salary to their workers/ supervisors/ staff, Contractor shall comply with the GOI's guidelines for maximizing such transactions through Non-Cash / digital means.
- 2.8.18 In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.
- 2.8.19 Also, no idle charges will be admissible in the event of any stoppage caused in the work resulting in contractor's labour and Tools & Plants being rendered idle due to any reason at any time.
- 2.8.20 The contractor shall take all reasonable care to protect the materials and work till such time the plant/equipment has been taken over by BHEL or their Customer whichever is earlier.
- 2.8.21 The contractor shall not stop the work or abandon the site for whatsoever reason of dispute, excepting force majeure conditions. All such problems/disputes shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and dealt with accordingly.
- 2.8.22 The contractor shall keep the area of work clean and shall remove the debris etc. while executing day-to-day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The contractor will also demolish all the hutments, sheds, offices etc. constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor.
- 2.8.23 The contractor shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and/ or as per the instructions of the Engineer.
- 2.8.24 The Contractor to note that some of BHEL's T&Ps/MMDs may not be insured. The Contractor will take necessary precautions and due care to protect the same while in his custody from any damage/ loss till the same is handed over back to BHEL. In case the damage / loss is caused due to carelessness/ negligence on the part of the contractor, the Contractor is liable to get them repair/ replaced immediately and in case of his failure to do so within a reasonable time, BHEL shall recover the loss from the contractor.
- 2.8.25 For all works having contract value of Rs. 5,00,000/- or above, BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life/ permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below.
- a) Victim: Any person who suffers permanent disablement or dies in an accident as defined below.

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- b) Accident: Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing/ operation and works incidental thereto at BHEL factories/ offices and precincts thereof, project execution, erection and commissioning, services, repairs and maintenance, trouble shooting, serving, overhaul, renovation and retrofitting, trial operation, performance guarantee testing undertaken by the company or during any works/ during working at BHEL Units/ Offices/ townships and premises/ Project Sites.
- c) Compensation in respect of each of the victims:

In the event of death or permanent disability resulting from Loss of both limbs:

Rs. 10,00,000/- (Rs. Ten Lakh).

In the event of other permanent disability: Rs.7,00,000/- (Rs. Seven Lakh)

- d) Permanent Disablement: A disablement that is classified as a permanent total disablement under the proviso to section 2 (I) of the Employee's Compensation Act, 1923.

2.8.26 Contractor shall be fully responsible for the safety of their T&Ps and other material mobilized at site. In any case, BHEL shall not be liable for any damage/loss/misuse of any item(s) belong to the contractor.

2.8.27 Contractor will ensure that the work/job is executed through his/her employees on and under no circumstances, the contractor shall subcontract the job without prior written permission from BHEL.

2.8.28 The liability for any compensation on account of injury sustained by an employee of the contractor will be exclusively that of the contractor.

2.9 Execution Plan, Progress Monitoring, Monthly Review And Performance Evaluation

2.9.1 A tentative plan/ programme for completion of the contractual scope of work as per the time schedule given in the contract shall be made jointly by BHEL and Contractor, before commencement of work. The above programme shall be supported by month wise deployment of resources viz Manpower, T&P, Consumables, etc. Progress will be reviewed periodically (Daily/Weekly/Monthly) vis-à-vis this jointly agreed programme.

Subsequently, every month, quarterly rolling plan will be made by BHEL based on budgeted targets.

Monthly plan in F-14 format shall be drawn from this Quarterly plan. Monthly plan shall necessarily include activities required for achieving targets/ milestones unless inputs/ fronts are not available. While planning and arriving on asking rate all available inputs shall be taken into consideration.

Vendor will be required to execute the monthly plan in that month in addition to make full efforts to minimize the cumulative shortfall attributable to him up to the month.

BHEL may require monthly work plan up to one and half times of average monthly value and demand matching manpower.

Where, Average Monthly Value = Total Contract Value (as per latest revision) / Period of Contract (in months)

Provided, this requirement is reflected in the rolling quarterly plan two months in advance.



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If the Contractor refuses to sign the F-14 format, those F-14 formats requiring Contractor's signature shall be deemed to have been signed and accepted by the Contractor, if communicated to the Contractor through email or any other mode as stated in clause 2.3.1.

The Contractor shall submit periodical progress reports (Daily/Weekly/Monthly) and other reports/information including manpower, consumables, T&P mobilization etc. as desired by BHEL.

2.9.2 Monthly progress review between BHEL and Contractor shall be based on the agreed programme as above, availability of inputs/fronts etc., and constraints if any, as per prescribed formats (i.e. Form F-14). Manpower, T&P and consumable reports as per prescribed formats shall be submitted by contractor every month. Release of RA Bills shall be contingent upon certification by BHEL Site Engineer of the availability of the above prescribed formats duly filled in and signed.

2.9.3 The burden of proof that the causes leading to any shortfall is not due to any reasons attributable to the contractor is on the contractor himself. The monthly progress review shall record shortfalls attributable to (i) Contractor, (ii) Force Majeure Conditions, and (iii) BHEL

2.9.4 Performance of the Contractor shall be assessed as per prescribed formats and shall form the basis for 'Assessment of Capacity of Bidder' for Tenders where the Contractor is a bidder. BHEL reserves the right to revise the evaluation formats during the course of execution of the works.

2.10 Time Of Completion

2.10.1 The time for completion shall be as mentioned In the LOA/Contract. The time for completion shall be reckoned from the date of commencement of work at Site as certified/notified in writing by BHEL Engineers.

2.10.2 Time being the essence of the contract, the entire work shall be completed by the contractor within the time schedule or within such extended periods of time as may be allowed by BHEL under clause 2.11.

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| 2.11 EXTENSION OF TIME FOR COMPLETION | |
| 2.11.1 | If the completion of work as detailed in the scope of work gets delayed beyond the contract period, the contractor shall request for an extension of the contract and BHEL at its discretion may extend the Contract. If the completion of work gets delayed for reasons not attributable to the contractor, the contract period may be suitably extended at the sole discretion of BHEL. |
| 2.11.2 | Based on the F-14 formats, the works balance at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to the contractor. Any further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly. |
| 2.11.3 | However, if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty/LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take under Clause 2.7.2 of GCC i.e. Breach of Contract, Remedies and Termination |
| 2.11.4 | Planning, progress monitoring, monthly review and performance monitoring shall be carried out as per clause 2.9 of GCC. |
| 2.12 OVERRUN COMPENSATION— | |
| 2.13 SECURED RECOVERABLE ADVANCES: | |
| 2.14 QUANTITY VARIATION | |
| 2.15 Extra Works | |
| 2.15.1 | All rectifications/modifications, revamping and reworks required for any reasons not due to the fault of the contractor, or needed due to any change in deviation from drawings and design of equipment, operation/maintenance requirements, mismatching or due to damages in transit, storage and erection/commissioning and other allied works which are not very specifically indicated in the drawings, but are found essential for satisfactory completion of the work, will be considered as extra works. |
| 2.15.2 | Extra works arising on account of the contractor's fault, irrespective of time consumed in rectification of the damage/loss, will have to be carried out by the contractor free of cost. Under such circumstances, any material and consumable required for this purpose will also have to be arranged by the contractor at his cost. |
| 2.15.3 | All the extra work should be carried out by a separately identifiable gang, without affecting routine activities. Daily log sheets in the pro-forma prescribed by BHEL should be maintained and shall be signed by the contractor's representative and BHEL engineer. No claim for extra work will be considered/entertained in the absence of the said supporting documents i.e. daily log sheets. Signing of log sheets by BHEL engineer does not necessarily mean the acceptance of such works as extra works. |
| 2.15.4 | BHEL retains the right to award or not to award any of the major repair/rework/modification/rectification/fabrication works to the contractor, at their discretion without assigning any reason for the same. |
| 2.15.5 | Blank |
| 2.15.6 | The above composite labour man hour rate towards extra works shall remain firm and not subject to any variation during execution of the work. PVC will not be applicable for extra |



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| | works. Rate revision, Over Run Charges/compensation etc. will not be applicable on extra works. |
| 2.15.7 | <p>Extra Works for Civil Packages</p> <p>i) Rates for Extra Works arising due to (1) non availability of BOQ (Rate Schedule), OR (2) change in Specifications of materials/works (3) rectification/modification/dismantling & re-erecting etc. due to no fault of Contractor, shall be in the order of the following:</p> <ol style="list-style-type: none"> Item rates are to be derived from similar nature of items in the BOQ (Rate Schedule) with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities. As per latest edition of CPWD-DSR with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities OR Notification issued by the office of CPWD for 'Cost Index' in that Region where the project is being executed with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities, whichever is less. Item rates are to be worked out on the basis of market rates prevailing on the date of execution mutually agreed between BHEL and Contractor. <p>ii) PVC and ORC will not be applicable for (i) above.</p> |
| 2.16 Supplementary Items | |
| 2.16.1 | <p>For NON Civil Works</p> <p>Supplementary items are items/works required for completion of entire work but not specified in the scope of work. Subject to certification of such items/works as supplementary items by BHEL Engineer, rates shall be derived on the basis of any one of the following on mutual agreement:</p> <ol style="list-style-type: none"> Based on percentage breakup/rates indicated for similar/nearby items. In case (i) above does not exist, then BHEL/site may derive the percentage breakup/rates to suit the type of work. |
| 2.16.2 | <p>For Civil Works</p> <p>i) Rates for Supplementary Works/Additional Works arising out due to additions/alterations in the original scope of works as per contract subject to certification of BHEL Engineer shall be worked out as under:</p> <ol style="list-style-type: none"> Item rates which are available in existing BOQ (Rate Schedule) shall be operated with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities Items of works which are not available in existing BOQ shall be operated as an 'Extra Works' and rate shall be derived as per clause no 2.15.7 <p>ii) Execution of Supplementary Works/Additional Works through the Contractor shall be at the sole discretion of BHEL, and shall be considered as part of executed contract value for the purpose of Quantity Variation as per clause 2.14</p> <p>iii) BHEL Engineer's decision regarding fixing the rate as above is final and binding on the contractor.</p> <p>iv) PVC and ORC will not be applicable for (i) above.</p> |
| 2.17 PRICE VARIATION COMPENSATION – Applicable | |
| 2.18 Insurance | |
| 2.18.1 | BHEL/their customer shall arrange for insuring the materials/properties of BHEL/customer covering the risks during transit, storage, erection and commissioning. |
| 2.18.2 | It is the sole responsibility of the contractor to insure his materials, equipment, workmen etc. against accidents and injury while at work and to pay compensation, if any, to workmen as per Workmen's compensation Act. The work will be carried out in a protected area and all the rules |

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and regulations of the client /BHEL in the area of project which are in force from time to time will have to be followed by the contractor.

2.18.3 If due to negligence and or non-observation of safety and other precautions by the contractors, any accident/injury occurs to the property / manpower belong to third party, the contractor shall have to pay necessary compensation and other expense, if so decided by the appropriate authorities.

2.18.4 The contractor will take necessary precautions and due care to protect the material, while in his custody from any damage/ loss due to theft or otherwise till the same is taken over by BHEL or customer. For lodging / processing of insurance claim, the contractor will submit necessary documents. BHEL will recover the loss including the deductible franchise from the contractor, in case the damage / loss is due to carelessness / negligence on the part of the contractor. In case of any theft of material under contractor's custody, matter shall be reported to Police by the contractor immediately and copy of FIR and subsequently police investigation report shall be submitted to BHEL for taking up with insurance. However, this will not relieve the contractor of his contractual obligation for the material in his custody.

Refer Clause no 15 also of Section II for clause of Insurance.

2.19 STRIKES & LOCKOUT

2.19.1 The contractor will be fully responsible for all disputes and other issues connected with his labour. In the event of the contractor's labour resorting to strike or the Contractor resorting to lockout and if the strike or lockout declared is not settled within a period of one month, it may be considered as 'Breach of Contract' under Clause 2.7 and the remedies under Clause 2.7.2.2 may be executed, at the discretion of BHEL.

2.19.2 For all purposes whatsoever, the employees of the contractor shall not be deemed to be in the employment of BHEL.

2.20 Force Majeure

2.20.1 "Force Majeure" shall mean circumstance which is:

- a) beyond control of either of the parties to contract,
 - b) either of the parties could not reasonably have provided against the event before entering into the contract,
 - c) having arisen, either of the parties could not reasonably have avoided or overcome, and
 - d) is not substantially attributable to either of the parties
- And
- e) Prevents the performance of the contract,
Such circumstances include but shall not be limited to:
 - i. War, hostilities, invasion, act of foreign enemies.
 - ii. Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war.
 - iii. Riot, commotion or disorder by persons other than the contractor's personnel and other employees of the contractor and sub-contractors.
 - iv. Strike or lockout not solely involving the contractor's personnel and other employees of the contractor and sub-contractors.
 - v. Encountering munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio- activity.
 - vi. Natural catastrophes such as earthquake, tsunami, volcanic activity, hurricane or typhoon, flood, fire, cyclones etc.

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- vii. Epidemic, pandemic etc.
- 2.20.2 The following events are explicitly excluded from Force Majeure and are solely the responsibilities of the non-performing party: a) any strike, work-to-rule action, go-slow or similar labour difficulty (b) late delivery of equipment or material (unless caused by Force Majeure event) and (c) economic hardship.
- 2.20.3 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 15 (fifteen) days after the occurrence of such event.
- 2.20.4 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended by a period of time equal to period of delay caused due to such Force Majeure event.
- 2.20.5 Delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall not
- a) Constitute a default or breach of the Contract.
 - b) Give rise to any claim for damages or additional cost expense occasioned thereby, if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.
- 2.20.6 BHEL at its discretion may consider short closure of contract after 1 year of imposition of Force Majeure in line with extant guidelines. In any case, Supplier/Vendor cannot consider deemed short-closure after 1 year of imposition of Force Majeure

2.21 Settlement of Dispute

If any dispute or difference of any kind whatsoever shall arise between BHEL and the Supplier/Vendor, arising out of the contract for the performance of the work whether during the progress of contract termination, abandonment or breach of the contract, it shall in the first place referred to Designated Engineer for amicable resolution by the parties. Designated Engineer (to be nominated by BHEL for settlement of disputes arising out of the contract) who within 60 days after being requested shall give written notice of his decision to the contractor. Save as hereinafter provided, such decision in respect of every matter so referred shall forthwith be given effect to by the Supplier/Vendor who shall proceed with the work with all due diligence, whether he or BHEL desires to resolve the dispute as hereinafter provided or not.

If after the Designated Engineer has given written notice of this decision to the party and no intention to pursue the dispute has been communicated to him by the affected party within 30 days from the receipt of such notice, the said decision shall become final and binding on the parties. In the event the Supplier/Vendor being dissatisfied with any such decision or if amicable settlement cannot be reached then all such disputed issues shall be resolved through conciliation in terms of the BHEL Conciliation Scheme 2018 as per Clause

2.21.1 Conciliation:

Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure as per BHEL Conciliation Scheme 2018. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in - "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com)).

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Note: Ministry of Finance has issued OM reference No. 1/2/24 dated 03.06.2024 regarding "Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement. In the said OM it has been recommended that Government departments/ Entities/agencies are to encourage mediation under the Mediation Act. 2023 . The said Act has not yet been notified by the Government. Therefore, the clause "Settlement of Disputes" shall be modified accordingly as and when the Mediation Act 2023 gets notified.

2.21.2 ARBITRATION:

- 2.21.2.1 . Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 21.1 herein above or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, refer the disputes to Arbitral Institution (to be identified by the contract issuing agency (eg. "IIAC" (India International Arbitration Centre) for Delhi/NCR offices) and such dispute to be adjudicated by Sole Arbitrator appointed in accordance with the Rules of said Arbitral Institution.
- 2.21.2.2 . A party willing to commence arbitration proceeding shall invoke Arbitration Clause by giving notice to the other party in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice') before referring the matter to arbitral institution. The Notice shall be addressed to the Head of the Region, Power Sector/ Unit,BHEL, executing the Contract and shall contain the particulars of all claims to be referred to arbitration with sufficient detail and shall also indicate the monetary amount of such claim including interest, if any
- 2.21.2.3 . After expiry of 30 days from the date of receipt of aforesaid notice, the party invoking the Arbitration shall submit that dispute to the Arbitral Institutions..... (to be identified by the contract issuing agency) and that dispute shall be adjudicated in accordance with their respective Arbitration Rules. The matter shall be adjudicated by a Sole Arbitrator who shall necessarily be a Retd Judge having considerable experience in commercial matters to be appointed/nominated by the respective institution. The cost/expenses pertaining to the said Arbitration shall also be governed in accordance with the Rules of the respective Arbitral Institution. The decision of the party invoking the Arbitration for reference of dispute to a specific Arbitral institution for adjudication of that dispute shall be final and binding on both the parties and shall not be subject to any change thereafter. The institution once selected at the time of invocation of dispute shall remain unchanged.
- 2.21.2.4 . The fee and expenses shall be borne by the parties as per the Arbitral Institutional rules.
- 2.21.2.5 . The Arbitration proceedings shall be in English language and the seat and venue of Arbitration shall be **Amethi (UP)**
- 2.21.2.6 . Subject to the above, the provisions of Arbitration & Conciliation Act 1996 and any amendment thereof shall be applicable. All matters relating to this Contract and arising out of invocation of Arbitration clause are subject to the exclusive jurisdiction of the Court(s) situated at **Amethi (UP)**
- 2.21.2.7 . Notwithstanding any reference to the Designated Engineer or Conciliation or Arbitration herein, a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree. Settlement of Dispute clause cannot be invoked by the Contractor, if the Contract has been mutually closed or 'No Demand Certificate' has

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| <p>been furnished by the Contractor or any Settlement Agreement has been signed between the Employer and the Contractor.</p> <p>2.21.2.8 . It is agreed that Mechanism of resolution of disputes through arbitration shall be available only in the cases where the value of the dispute is less than Rs. 10 Crores.</p> <p>2.21.2.9 . In case the disputed amount (Claim, Counter claim including interest is Rs. 10 crores and above, the parties shall be within their rights to take recourse to remedies other than Arbitration, as may be available to them under the applicable laws after prior intimation to the other party. Subject to the aforesaid conditions, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof as amended from time to time, shall apply to the arbitration proceedings under this clause.</p> <p>2.21.2.10 In case, multiple arbitrations are invoked (whether sub-judice or arbitral award passed) by any party to under this contract, then the cumulative value of claims (including interest claimed or awarded) in all such arbitrations shall be taken in account while arriving at the total claim in dispute for the subject contract for the purpose of clause 21.2.9. Disputes having cumulative value of less than 10 crores shall be resolved through arbitration and any additional dispute shall be adjudicated by the court of competent jurisdiction.</p> <p>2.21.3 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:</p> | <p>In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 05/0003/2019-FTS-10937 dated 14-12-2022 as amended from time to time.</p> |
| <p>2.21.4 No Interest Payable To Contractor</p> <p>Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL. etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.</p> | <p>2.22 Retention Amount</p> |
| <p>2.23 PAYMENTS</p> | <p>2.23.1 Running Account Bills (RA Bills)</p> |
| <p>i. These are for interim payments when the contracts are in progress. The bills for such interim payments are to be prepared by Contractor in prescribed formats (RA Bill forms).</p> <p>ii. Payments shall be made according to the extent of work done as per measurements taken up to the end of the calendar month and in line with the terms of payments described in the Tender documents.</p> <p>iii. Recoveries on account of electricity, water, statutory deductions etc. are made as per terms of contract.</p> | |

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- iv. Full rates for the work done shall be allowed only if the quantum of work has been done as per the specifications stipulated in the contract. If the work is not executed as per the stipulated specifications, BHEL may ask the contractor to redo the work according to the required specifications, without any extra cost. However, where this is not considered necessary 'OR' where the part work is done due to factors like non-availability of material to be supplied by BHEL 'OR' non availability of fronts 'OR' non availability of drawings, fraction payment against full rate, as is considered reasonable, may be allowed with due regard for the work remaining to be done. BHEL decision in this regard will be final and binding on the contractor.
- v. In order to facilitate part payment, BHEL at its discretion may further split the contracted rates/percentages to suit site conditions, cash flow requirements according to the progress of work, subject to following:
 - a. Provided no 'part' payment is recommended till 25% of work in the item rate is executed.
 - b. Payment of item rate to be made in not more than three instalments, last stage payment to be not lower than 20% of the item rate.

2.23.2 Final Bill

Final Bill' is used for final payment on closing of Running Account for works or for single payment after completion of works. 'Final Bill' shall be submitted as per prescribed format after completion of works as per scope and upon material reconciliation, along with the following:

- i. 'No Claim Certificate' by Contractor as per Clause 2.6.11 of the GCC.
- ii. Clearance certificates where ever applicable viz. Clearance Certificates from Customer, various Statutory Authorities like Labour department, PF Authorities, Commercial Tax Department etc.
- iii. Indemnity Bond as per prescribed format.
- iv. BHEL shall settle the final bills after deducting all liabilities of Contractor to BHEL.

2.24 Performance Guarantee for workmanship

2.24.1 BHEL shall release the Security Deposit subject to the following

- i. Contractor has submitted 'Final Bill'
- ii. Guarantee period as per contract has expired
- iii. Contractor has furnished 'No Claim Certificate' as per clause 2.6.11 of GCC
- iv. BHEL Site Engineer/Construction Manager has furnished the 'No Demand Certificate' in specified format
- v. Contractor has carried out the works required to be carried out by him during the period of Guarantee and all expenses incurred by BHEL on carrying out such works is included for adjustment from the Security Deposit refundable.

2.25 CLOSING OF CONTRACTS

The Contract shall be considered completed and closed upon completion of contractual obligations and settlement of Final Bill or completion of Guarantee period whichever is later. Upon closing of Contract, BHEL shall issue a performance/ experience certificate as per standard format, based on specific request of Contractor as per extant BHEL guidelines through the online portal available at <https://siddhi.bhel.in> only.



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2.26 SUSPENSION OF BUSINESS DEALINGS

BHEL reserves the right to take action against Contractors who either fail to perform or Tenderers/Contractor who indulge in malpractices, by suspending business dealings with them in line with BHEL guidelines issued from time to time.

The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms / principal / agents, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com.

If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution stage indulges in any act, including but not limited to, mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or tampers the tendering

process or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, or does anything which is actionable under the Guidelines for Suspension of Business dealings, action may be taken against such bidder / supplier / contractor as per extant guidelines of the company available on www.bhel.com and / or under applicable legal provisions. Guidelines for suspension of business dealings is available in the webpage:

http://www.bhel.com/vender_registration/vender.php

2.27 Limitation On Liability:

Notwithstanding anything to the contrary in this Contract or LOA or Work Order or any other mutually agreed document between the parties, the maximum liability, for damages, of the contractor, its servants or agents, shall under no circumstances exceed an amount equal to the Price of the Contract or the Work Order. The Contractor shall not in any case be liable for loss of profit or special, punitive, exemplary, indirect or consequential losses whatsoever. This shall not be applicable on the recoveries made by Customer from BHEL on account of Contractor, any other type of recoveries for workmanship, material, T&P etc. due from the contractor.

2.28 Non-Disclosure Agreement (NDA):

The bidders shall enter into the Non-disclosure agreement totally voluntarily, with full knowledge of its meaning and without duress. (Format attached).

2.30 Cartel Formation

The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines

2.31 Fraud Prevention Policy

Bidder along with its associate /collaborators /sub-contractors /sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

2.32 Order of Precedence

2.29 Other Issues

2.29.1 Value of Non judicial Stamp Paper for Bank Guarantees and for Contract Agreement shall be not less than Rs 100/- unless otherwise required under relevant statutes.



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2.29.2 In case of any conflict between the General Conditions of Contract and Special Conditions of Contract, provisions contained in the Special Conditions of Contract shall prevail.

2.29.3 Unless otherwise specified in NIT, offers from consortium/ JVs shall not be considered

3. Maintaining Quality of the Job and rectification of any deficiency

The Contractor will be responsible for the quality of the job as per the specifications and will immediately rectify the deficiency pointed out in the job performed.

4. Subcontracting

The Contractor cannot sub-contract part or complete work detailed in the tender specification undertaken by him without written permission of BHEL. The Contractor is solely responsible to BHEL for the work awarded to him.

5. Termination Of Contract

BHEL reserves the right to terminate the whole or part of the contract without assigning any reason by giving prior written notice of 30 days. The notice of termination shall specify, the portion/scope of the contract which stands terminated and the date on which such termination becomes effective. No compensation for termination shall be payable to the contractor. However, the Contractor shall be entitled to receive contract price for the services rendered upto the date of termination after effecting recoveries due from the contractor. The Contractor hereby waives any claim for compensation for losses/damages and/or reimbursement of costs.

6. Recovery From Contractor

Whenever under the contract, any sum of money is recoverable from or payable by the contractor, the same may be deducted from any sum then due or which at any time thereafter may become due to the contractor under the contract or from his security deposit, or the contractor shall pay the claim on demand.

7. Post Payment Audit Of Work & Bills

BHEL reserves the right to carry out a post payment audit and technical examination of the work and final bill including all supporting vouchers, abstracts etc. and to enforce recovery of any sums becoming due as a result thereof. However, no such recovery shall be enforced after three years of payment of the final bill.

8. Confidential Information

The Contractor agrees & acknowledges that in the course of their discussions and interactions, BHEL may disclose information of confidential proprietary nature relating to its business, products, know-how, technology, customers, employees and financial. Such information shall be considered as confidential. The contractor agrees to keep it confidential & secret at all times and not directly or indirectly disclose to any party other than its employees and authorized personnel's strictly on a need know basis, without the prior written permission of BHEL.

The above condition shall however not apply to that information, which –

- now or hereafter enters the public domain through no fault of that party;
 - can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party hereto; and
 - otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
- The provisions of this Clause shall survive termination for a period of _____ years, for whatever reason, of the Contract.

9. No Claim Certificate

The Contractor shall not, be entitled to make any claim, whatsoever, against BHEL under or by virtue of or arising out of this contract nor shall BHEL entertain or consider any such claim after Contractor has signed a “no claim certificate (WAM 10)” in favour of BHEL or in such forms as shall be required by BHEL after the works are finally accepted.

10. Liasoning with local and state authorities

Contractor will co-ordinate with state and local authorities for the work being done, as and when needed.



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| 11. Reporting |
| Contractor will submit the Daily, Weekly, Monthly, Quarterly, Half-Yearly and Annual Reports as per the formats discussed and decided between BHEL and Contractor. |
| 12. Commission for employment |
| <p>The Contractor hereby undertakes that it shall not charge any fees in whatever name, or take any monetary / non-monetary considerations / deductions from its workforces/ individual/ persons/ resources engaged by it, to be deployed at BHEL site. The Contractor further agrees that it will not indulge in any unethical practices and acknowledges that any noncompliance of the aforesaid undertaking will be treated as a material breach of the Contract, in which case BHEL shall have the right to take appropriate independent actions including termination of the Contract and actions as deemed fit.</p> <p>After award of contract, if the Contractor is found to be charging any amount from the manpower on its roll in any manner, the agreement shall be terminated immediately with forfeiture of Performance Security amount and also the Contractor will be blacklisted. Any amount received from its manpower as registration or any fees by the Contractor will be recovered from the pending bills and will be paid directly to the concerned manpower.</p> |
| 13. Contractor's representative |
| The Contractor shall nominate a coordinator/ Single Point of Contact (SPOC) who shall be responsible for regular interaction with BHEL so that optimal services of the persons deployed could be availed without any disruption. |
| 14. Statutory obligations/ compliances/ requirements |
| <p>Contractor shall comply with all the statutory requirements, rules, regulations, notifications in relation to employment of his workforces. The Contractor shall duly comply with all Acts, Laws, or other Statutory rules, regulations, bye-laws applicable or which might become applicable to the place of work with regard to the performance of the work under the contract. Contractor shall indemnify BHEL against all claims and losses arising out of any non-compliance and violation of any applicable Law in connection with the subject matter of the contract. Contractor, wherever applicable, shall maintain proper records prescribed by the concerned statutory authorities and also provide a copy of the same to BHEL.</p> <p>The Contractor shall alone be responsible for Compliance of all labour legislation's (as may be amended from time to time) in respect of persons employed by or through him and deputed for the services being provided to BHEL.</p> <p>Minimum rates of wages shall be as per the notifications of concerned State Government/Appropriate Government from time to time.</p> <p>The Contractor shall prepare, maintain and submit all records, documents, returns, registers, notice, etc. as required under various Labour Legislations in the prescribed manner as applicable from time to time and within prescribed time to the concerned statutory authorities and produce the same on demand. The Contractor shall keep itself updated of the various labour laws as applicable to it and which may become applicable to it from time to time and shall take effective and speedy steps to comply with the same. In the event of breach of any law as applicable to its personnel or otherwise, by the contractor, the Contractor alone shall be responsible and liable for legal action that may arise as a result of such breach or violation and consequences thereof, if any.</p> <p>The Contractor shall ensure to pay the entire wages payable by it under Minimum Wages Act as applicable from time to time to the workforce deployed / to be deployed and further ensure to deposit the PF and ESI contribution on such gross wages with the appropriate authorities within due dates and shall submit the copy of challan for the PF & ESI contribution deposited by it along with its details to BHEL as and when called upon to do so. It is agreed that BHEL shall be entitled to withhold contractor's payment, should the contractor fail to submit records of statutory compliances as and when called for, until such record is produced before BHEL. If it is discovered that the Contractor has failed in its statutory compliances, BHEL shall terminate the Contract.</p> |



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The Contractor will regulate recruitment, terms & conditions of employment, welfare amenities, disciplinary action, grievance handling, transfer, promotion, wages, allowances, leaves/holidays & benefits, provision for lunch, etc. of personnel deployed with BHEL.

The Contractor shall ensure that the personnel deployed in the premises of BHEL follow the safety norms, rules, regulations and instructions strictly including prohibiting smoking inside the Premises.

The Contractor shall prepare and disburse wages/salaries of its personnel latest by 7th of every month or as prescribed by law from time to time and shall not delay the same for any reasons whatsoever. The Contractor shall provide BHEL with a copy of salary/wage payment register duly certified by it as and when required by BHEL. BHEL shall be entitled to depute its representative to oversee the disbursement of wages/salaries.

The Contractor shall be liable to pay retrenchment compensation, notice pay, gratuity or bonus as payable to its personnel as and when required and BHEL shall not be liable for any such obligation of the Contractor.

15. Death cum accidental insurance policy

The Contractor shall necessarily buy death cum accidental insurance (24x7) policy for all of his workforce to be deployed under the contract before the start of work. No workforce should enter the BHEL-premises or working area without insurance cover. Copy of the Insurance Policy to be necessarily submitted by the Contractor in the first month itself of start of the contract. The coverage shall be of Rs. **5.00 Lakhs** per individual. The sum assured (Rs. **5.00 Lakhs**) shall become payable to the nominee/legal heir in the event of death due to accident of insured person. In the event of death of any member of workforce deployed by the contractor without proper insurance cover, the contractor shall be liable to pay Rs. **5.00 Lakhs** to the nominee/legal heir of such deceased member of workforce. Accident Insurance Scheme which will be a one-year cover, renewable from year to year, offering accidental death & disability on account of an accident. The Contractor will be responsible to pay the premium per annum per member for all the workforce during the contract. The Contractor must submit documentary evidence to show coverage of all the workforce under the above-mentioned insurance scheme at all times during the validity of contract. The Contractor have to assess the premium of insurance cover for the entire contract period. Contractors should include the impact of cost of insurance cover in their quote (i.e. Service Charge) itself.

16. Contractor's obligations

- 16.1 The Contractor will have full and exclusive liability for Wages, PF, ESI, Bonus, Insurance, overtime, Uniform etc.; for the personnel deployed by the contractor and other obligation arising under the applicable law at present and hereafter imposed by the Government / Local Bodies. The Contractor shall be fully responsible for the timely payment of wages, provident fund, bonus or any other benefits payable under the aforesaid Acts, Laws and regulations to the Workforce engaged by him at the work premises of BHEL. BHEL shall not be responsible for these payments or any other liability on this account. The Contractor shall also indemnify and compensate BHEL for any liability incurred by BHEL, including costs incurred thereon. In such an event, the nominated officer of BHEL shall be entitled to recover the amount so incurred, from the contractor, including forfeiture of the Security Deposit; and, if the sum so payable and / the Security Deposit is less than the amount due, it shall be lawful for BHEL to recover the balance amount as a debt from the Contractor.
- 16.2 Contractor will ensure that the job is executed through his workforce on his rolls and under no circumstances the contractor will deploy any casual workforce to carry out the job nor shall sub-contract the job.
- 16.3 The Contractor shall perform the work assignments to the satisfaction of BHEL. In case of unsatisfactory performance by the Contractor, BHEL shall intimate the same in writing to the Contractor; however, if the performance of the contractor does not improve within 7 days from the date of the above intimation, then, BHEL shall have the right to terminate the contract by giving one

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| | month's notice. BHEL shall also have the right to recover its damages (10%) from the Security Deposit received from the Contractor or any other financial holds including future invoices in the present or any other contract between the parties. |
| 16.4 | The Contractor shall exhibit its licence (Labour Licence if applicable etc.) or copy thereof in a conspicuous place at its place of work in BHEL premises. Every contractor shall display an abstract of the Contract Labour (Regulation and Abolition) Act, 1970 and rules in English and Hindi and in the language spoken by the majority of workforce in such form as may be approved by the Chief Labour Commissioner (Central). |
| 16.5 | Contractor shall ensure necessary assistance by its workforce to the police or to BHEL's authority in the process of any investigation pertaining to the activities of the Contractor. |
| 16.6 | It shall be the sole responsibility of the Contractor to settle disputes, if any arising out of the engagement between himself and the personnel engaged by him. In the event, any personnel approach the Competent Authority under any law or to the Court, the entire expenses in this behalf shall be borne by the Contractor. |
| 16.7 | The entire administration and deployment of the workforce will be the responsibility of the Contractor. The Proprietors/director(s) / authorized representative(s) on behalf of Contractor shall visit and check their workforce deployed at BHEL premise periodically in different shift and monitor their performance. |
| 16.8 | Personal bag & baggage of all the workforce deployed by Contractor at BHEL-Premise shall be liable for physical check-up both at the time of entry into the campus and while leaving at the security gate. |
| 16.9 | The contractor shall ensure that while on duty, his workforce puts proper uniforms in distinctive color code and in neat & clean conditions issued to them by the Contractor. |
| 16.10 | For security reasons, the contractor shall furnish /submit the details of his workforce along with photograph at BHEL's Security Office before they are brought into the BHEL-premise for providing various services. Without the prior knowledge of the BHEL, the contractor shall not deploy any workforce for any job within BHEL premises. In case the Contractor decides to change one or more member of his workforce, this shall be brought in writing to the notice of the BHEL. |
| 16.11 | The contractor shall not deploy any workforce below the age of 18 years. |
| 16.12 | The contractor's workforce shall not loiter in the BHEL premises and also not normally move out of their specified areas. Persons other than those who are required to work or visit the specified premises shall not be allowed into such places. |
| 16.13 | The contractor's workforce shall not indulge in entertaining their guests/outside in the work premise during their working hours. |
| 16.14 | While every care has been taken to ensure that the contents (w.r.t. Statutory Obligations / Compliances) of this tender document are accurate and up to date. In case of any conflict between the statutory provisions stipulated in this tender document and in the original source such as applicable Acts or the prevailing laws / rules, the statutory provisions contained in the extant law/rule and the original instructions shall prevail. |
| 16.15 | All the consumable materials will be of standard quality as mentioned in the scope of services and that will be verified by the Company Representative before the use. |



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16.16 The Workforce deployed by the Contractor shall have no right or claim or complaint of any nature whatsoever against BHEL including permanent absorption in BHEL. Any complaint as regards the working condition or dispute of any nature can only be taken up through the Contractor.

17.Care & treatment:

Contractor or his representative should be in regular touch with all his workforce during all work timings. If any member of workforce falls ill or suffers an accident / injury, the contractor or his authorized representative, shall immediately arrange to take him/her for proper medical care. Delay / ignoring will be treated as violation of contractual obligations. **Provisions of First Aid Facility should be provided & maintained by the Contractor so**, as to be readily accessible during all working hours. In case, while on duty and during the course of engagement in work premises of BHEL under this Agreement, if any of the Contractor's Workforce meet (s) with any injury / illness due to accident or other natural calamities, the Contractor shall ensure that immediate and adequate medical aid viz., first -aid and subsequent treatment facilities are provided to the person(s) concerned free of cost without fail. In addition, the Contractor shall also be liable for meeting other statutory liabilities like ESI, Insurance etc. Contractor shall make every arrangement to render all the possible assistance to their workforce in such cases.

18.Registers And Records And Collection Of Statistics

All registers and other records required to be maintained under various Labour Laws / Rules, shall be maintained complete and up-to-date, and, unless otherwise provided for, shall be kept with Work Supervisor or the nearest convenient building within the precincts of the workplace or at a place within a radius of three kilometers. Such registers shall be maintained legibly in English and Hindi or in the language understood by the majority of the workforce. In case of any call seeking information or statistics in relation to Contractor's workforce at any time by an order in writing, the same should be provided without fail. The contractor shall maintain all Register(s); or alternative suitable Register(s) in lieu of any of the registers prescribed below.

Contract Labour (Regulation & Abolition), Act, 1970 & Payment of Wages Act, 1936: •

Employee Register in FORM- A.

Wage Register in FORM- B.

Register of Loan / Recoveries in FORM- C

Attendance Register in FORM- D.

Employment Card in FORM – XII

Copies of Wage Slips in FORM – XIX.

Copies of Half-Yearly Returns in in FORM – XXIV.

Employee State Insurance Act, 1948: • Register of employees in FORM-6

Accident Book in FORM-11

Employees Provident Fund & Miscellaneous Provisions Act, 1952: The Contractor has to maintain the Eligibility Register and Online Returns submitted in compliance to Para 36B of the EPF Scheme 1952. Copies of Nomination cum Declaration prescribed under the Payment of Wages Act 1936, The Employees Provident Fund & Miscellaneous Provisions Act 1952, and The ESI Act 1948.

The Payment of Bonus Act, 1962: • Register showing the details of the amount of bonus due to each of the contract workers, the deductions under Sections 17 and 18 and the amount actually disbursed, in **FORM- C. •** The contractor shall send a return in **FORM – D** to the Inspector so as the reach him within 30 days after the expiry of the time limit specified in Section 19 for payment of Bonus.

The Ease of Compliance to Maintain Registers under various Labour Laws Rules, 2017: Ministry of Labour & Employment has since notified "Ease of Compliance to maintain Registers under various Labour Laws Rules, 2017" on 21st February 2017 which has in effect replaced the 56

Registers/Forms under 9 Central Labour Laws and Rules made thereunder in to 5 common Registers/Forms. This will save efforts, costs and lessen the compliance burden by various establishments. These Rules are



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available on the Website of this Ministry at the link below: <http://labour.gov.in/whatsnew/ease-compliance-maintain-registers-under-various-labour-laws-rules-2017>

Employee Register – FORM A.
Wage Register – FORM B.
Register of Loan/Recoveries – FORM C.
Attendance Register – FORM D.

19>Returns Under Labour Laws

The Unified Shram Suvidha Portal, developed by Government of India, facilitates reporting of inspections & submission of Returns and has also been envisaged as a single point of contact between employer, employee and enforcement agencies bringing in transparency in their day-to-day interactions. For integration of data among various enforcement Agencies, the Contractor, as an inspectable unit, is required to register and obtain Labour Identification Number (i.e. LIN) from Shram Suvidha Portal and submit the same in BHEL. Single Online Common Annual Return under 9 Central Labour Acts {(1) *Payment of Wages Act, 1936* (2) *Minimum Wages Act, 1948* (3) *Contract Labour (Regulation and Abolition) Act, 1970* (4) *Maternity Benefit Act, 1961* (5) *Building and Other Construction Workers (Regulation of Employment and Condition of Service) Act, 1996* (6) *Payment of Bonus Act, 1965* (7) *Inter-State Migrant Workmen (Regulation of Employment and conditions of Service) Act, 1979* (8) *Industrial Disputes Act, 1947* (9) *The Mines Act 1952*} has been made operational on Shram Suvidha Portal since 24th April 2015 to facilitate filing of simplified Single Online Return by the establishments instead of filing separate Returns, under the Various Acts and same shall be duly filed by the contractor with a copy to BHEL. The Contractor shall submit annual returns in Form-6A and Form 3A, prescribed under statutory EPF scheme, 1952 and annual returns in Form-6 prescribed under ESI Act, in respect of all the workforce (wherever applicable) deployed by him with a copy to BHEL.

20.Compliance With BHEL Rules

The contractor shall comply with all norms stipulated by BHEL such as gate passes, discipline & decency at and around the work site etc.

21.Indemnity

The Contractor shall indemnify and compensate BHEL against any liability that BHEL is subjected to on account of any statutory or contractual violation including any liability arising under the Contract Labour (Regulation and Abolition) Act, 1970 towards the workforce engaged by the contractor. BHEL shall be entitled to recover its losses arising out of such liability from the security deposit or other financial holdings in the contract. The Contractor shall also indemnify and hold BHEL harmless from and against all claims, damages, losses or expenses arising out of or resulting from the work/ services under the contract.

22.Company Representative

BHEL will nominate for each work premise covered under this Agreement, a Representative (hereinafter called "the Company Representative"). The Company Representative shall be the point of contact between the Contractor and the Company.

23.Withdrawal Of Workforce

In the event of termination of contract for any reason whatsoever or on completion of contract, the contractor shall withdraw all his workforce from the establishment of BHEL. In case the contractor has to discontinue services of any workforce (due to any reason) deployed under this agreement at any of BHEL premise, he should settle all statutory dues/payments of such individual immediately.

24.Instruction Book

The Contractor shall maintain an instruction book at job premises, serially numbered on each page, so that BHEL's visiting officers can issue instructions regarding progress and quality of job to the Contractor. The Contractor or the contractor representative will sign in the instruction book in token of receipt of and understanding of such instructions. Action taken on the instructions by the contractor or the contractor's representative shall be intimated to Company Representative or any other authorized representative of BHEL and their comment be recorded in the instruction book.



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25.Identity.

The Contractor shall ensure that the Workforces engaged by him must wear & display ID-cards prominently on their uniform during their duty period (as the same duly endorsed by BHEL). Each Workforce shall also wear his name badge (to be issued by the contractor) while on duty. All the personnel so deployed will follow strictly the security regulations of the BHEL, in vogue from time to time.

26.Attendance Record

Attendance of the workforce deployed by the Contractor will be maintained by the Contractor and copy of such document duly signed & stamped by the Contractor shall be provided to BHEL as and when called for. Contractor shall provide proper Biometric Employment cards for the contract workers to be deployed by him for Work/Services, duly signed by the contractor or authorized person on behalf of contractor. Contractor is required to install Biometric Attendance System to regulate attendance of the workforce engaged by them. Contractor shall provide proper Biometric Employment cards for the workforce to be deployed by him for Work/Services, duly signed by the contractor or authorized person on behalf of contractor. All the workforce deployed by the Contractor at work premises should also mark their attendance in the Bio-Matric Attendance System installed at BHEL premises. For the same, the Contractor should complete all formalities before deployment of workforce at work premises. However, a physical attendance register (Muster-Roll) shall be also maintained by the concerned Work Supervisor of the Contractor at work premise for physical verification by BHEL / statutory authorities.

27.Character Verification And Antecedence

The contractor should get the character / antecedents of all the workforce deployed by them at the work premises, verified by the Police Authorities before engaging & deploying them in BHEL premises. It is mandatory for the Contractor to Arrange / Apply for "On Line" Police Verification in respect of each individual deputed for BHEL on his own expenses and submit Police Verification Report obtained from the Police Authorities in respect of each individual before deploying him/her for BHEL treating it as a mandatory requirement. Please note that online application for Police Verification is to be made by the Contractor himself/themselves giving declaration that the individual in question is his/their own employee. Police Verification applied by the individual will not be accepted. In case the contractor desires to change the Workforce deployed by him/her due to any reason or BHEL requires the Contractor to withdraw any workmen, the new incumbent (replacement) should be deployed subject to verification as explained above.

28. Working Days / Holidays / Leave

All the workforce must be allowed at least one whole day of rest / weekly-off for every six continuous working days or as laid down in the prevailing laws. No deduction shall be made by the Contractor from the wages of any workforce on account of Weekly-Off, National Holidays. Workforce deployed by the Contractor shall be required to work normally on all six days (Monday to Saturday) for 8 ½ Hrs. with a break of half-an-hour after every 04 Hrs. or as provided under the applicable law from time to time. The Contractor's shall ensure that its workforce is granted leaves as per the applicable Shops and Establishment Act or Factories Act as amended from time to time.

Payment against encashment of paid leave shall be made to the Contractor when the Contractor submits proof of such payment at the end of one year i.e. annual basis (and not with every monthly bill).

If there are any changes in statutory laws / periodicity of payment of leave entitlement or if any other leave / holidays is enforced or modified in future, the Contractor will be authorized for billing to cover the same accordingly. The Contractor will maintain proper records of Leaves/ Holidays/ Weekly off etc. granted to the workforce.

29.Safety, Health And Environment (She) Management

All necessary precautions for safety of the man / machine, fire hazard & environmental aspects shall have to be taken by the Contractor for the activities performed by his workforce.



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The Contractor will be responsible for meeting all obligations for providing a safe and healthy workplace for its workforce. The contractor will be responsible for frequent and regular safety inspections of the worksites, materials, and equipment by its competent employees.

Safety and Personal Protective Equipment: Unless otherwise specified, the contractor is responsible for providing all necessary safety and personal protective equipment (PPE) needed by its workforce. This equipment must meet appropriate OSHA requirements and be in good working order. The contractor shall ensure that its workforce have received appropriate training on the use and maintenance of safety and PPE prior to its use. Failure to correctly use appropriate safety equipment is a violation of the contract and may result in damages in law and any applicable penalties in line with Special Conditions of the Contract.

Safety Training: The contractor must ensure that its workforces have completed appropriate health and safety training when required by statute/regulation and provide documentation of such training when required by BHEL.

Safety and Health Plan: The contractor must develop and implement a comprehensive health and safety plan for his or her workforce, which covers all aspects of operations and activities associated with the contract. This plan must comply with all statutorily applicable health and safety regulations and any project specific requirements that BHEL has specified.

It will be solely the Contractor's responsibility to fulfill all the legal formalities with respect to the "National Policy on Safety, Health and Environment at Workplace".

30.BHEL's Right To Withdraw / Relax

BHEL reserves the right to withdraw / relax any of the terms and condition mentioned in the contract, so as to overcome the problem encountered at a later stage. No such withdrawal or relaxation in any term shall be deemed to affect the other terms and conditions of the contract unless done so expressly and in writing.

31.No Employer Employee Relationship

The workforce deployed by the Contractor shall be the employees of the Contractor and there shall not be any employer – employee relationship between BHEL and the said workforce of Contractor on any ground whatsoever. BHEL will not issue any experience certificate to the workforces of the Contractor.

32.Contractor's Workforce

The Contractor shall provide workforce in sufficient numbers to meet the requirement of the scope of work and to the satisfaction of the BHEL's Company Representative. Estimated quantities envisaged for all services shall be as provided in the Special Conditions. In order to maintain quality services and minimize operational problems, the contractor may rotate the workforce with prior intimation to BHEL. For satisfactory services, the Contractor shall continuously maintain workforce strength as required to cope up with the requirement as arisen for satisfactory services to BHEL. Contractor has to deploy the minimum workforce as emphasized in the scope of services in the contract at any given day. Any deficiencies of the scope of services, the monthly payment against the job / services provided shall be deducted to the tune of shortages.

The workforce shall be classified as follows-

TYPE-A- Unskilled (USW): For providing Services at Job-Premise, the Contractor has to deploy unskilled workforce who must be minimum 5th Pass and know operations that involve the performance of simple duties, which require the experience of little of no independent judgment or previous experience although familiarity with the occupational environment is necessary.

TYPE-B- Semi-skilled (SSW) / Non-Matriculate: For providing services at Job-Premise, the Contractor has to deploy semiskilled workforce who must be minimum Non Matriculate (8th Pass), his/her work will be limited to the performance of routine operations of limited scope.

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TYPE-C- Skilled (SW)/Work Supervisor (SW) / Matriculate: For providing Services at Job Premise, the Contract has to deploy skilled workforce who must be Matriculate (10th Pass), his/her shall be capable of working efficiently of exercising considerable independent judgement and of discharging his duties with responsibility. They must possess thorough & comprehensive knowledge of the trade, craft or industry in which they will be deployed by the Contractor. Specific work, wherever required, work supervisor, receptionist etc. should have basic knowledge of operating computer. The Contractor i.e. the employer of contract workers will give certification regarding eligibility of an individual for his/her respective category for TYPE-A, TYPE-B & TYPE-C (mentioned above) on the basis of their skills/experience etc

44.3 Efficiency, promptness, quality service, good behavior and politeness of the workforce are shall be ensured at all times. The Contractor is required to supervise the operations at all working hours and his manager or supervisor shall personally supervise operations in the kitchen and dining area at the BHEL premises.

The workforce deployed by the contractor shall be hail and healthy and should not be suffering from any communicable diseases. The contractor shall get his employee medically examined on regular intervals and such reports shall be produced as and when called upon by BHEL.

The persons deployed by the Contractor shall not be entitled to pay, perks and other facilities admissible to regular/ confirmed employees during the currency or after expiry of the Agreement.

No medical facilities or reimbursement or any sort of medical claims thereof in respect of workforces provided by the Contractor will be entertained by BHEL.

The Contractor shall furnish the following documents in respect of the manpower deployed by them to BHELs premise/ designated premise in the given time limit:

- List of persons deployed (monthly)
- Biodata/ resume with antecedents' details (at the time of deployment)
- Copy of Aadhaar Card of the candidates (at the time of deployment)
- Identity Cards issued by Contractor bearing photograph (within 8 days of joining)
- Identity proof and residential proof (at the time of deployment)
- Copy of police verification certificate (at the time of deployment)
- Copy of birth certificate, if required (at the time of deployment - for domicile purpose)

For all intents and purposes, the Contractor shall be the "Employer" within the meaning of different Rules & Acts in respect of manpower so deployed. The persons deployed by the Contractor shall not have any claim whatsoever like employer and employee relationship with BHEL. No deployed manpower shall be allowed to stay in the BHEL's premise/ designated premise unnecessarily after working hours without BHEL's permission.

33. Supervision Of Contractor's Workforce

SUPERVISORY SERVICES: Due supervision of jobs at the work premises shall be ensured by the contractor's work supervisors daily for closely monitoring services under the job contract and work supervisor shall be equipped with cell phone facility for effective coordination with BHEL. Adequate intercommunication facilities for communication between supervisors/manager shall also be provided by the contractor. The major responsibility of the works Supervisor would be as under:

Obtaining instructions from the concerned BHEL Official(s) for carrying out the works pertaining to their areas. Passing on the work instructions to his team of workforce ensuring completion of work within the stipulated time as instructed above and as per the terms & conditions of the tender document.

To ensure proper conduct and discipline by his team of workforce, while performing their duty at BHEL premises.

To report / intimate any constraint in writing, if so felt, during the execution of designated works by his team of workforce.



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34. Assignment

The Contractor shall not, without the express prior written consent of BHEL, assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder.

35. Termination

35.1 Termination for BHEL's Convenience

BHEL may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this clause.

Upon receipt of the notice of termination under Subclause 1), the Contractor shall, either immediately or upon the date specified in the notice of termination,

cease all further work, except for such work as BHEL may specify in the notice of termination; and remove all Contractor's Equipment from the Site, repatriate the Contractor's personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition.

In the event of termination of the Contract under Subclause 1), the BHEL shall pay to the Contractor the Contract Price, properly attributable to the parts of the Facilities executed by the Contractor as of the date of termination;

Termination for Contractor's Default

BHEL, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons therefor to the Contractor:

if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up, other than a voluntary liquidation for the purposes of amalgamation or reconstruction, a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt; and

has abandoned or repudiated the Contract or has without valid reason failed to commence work on the Facilities promptly or has suspended the progress of Contract performance after receiving a written instruction from the BHEL to proceed;

persistently fails to execute the Contract or remedy any breach or persistently neglects to carry out its obligations under the Contract; then BHEL may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor, stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within 14 days of its receipt of such notice, then BHEL may terminate the Contract forthwith by giving a notice of termination to the Contractor.

Upon receipt of the notice of termination under Sub clause (i), the Contractor shall, either immediately or upon such date as is specified in the notice of termination, cease all further work, except for sch work as BHEL may specify in the notice of termination.

the Contractor shall be entitled to be paid the contract price attributable to the works executed/services performed up to the date of termination. Any sums due to BHEL from the Contractor accruing prior to the date of termination and already intimated to the Contractor shall be deducted from the amount to be paid to the Contractor under this Contract.



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
फैब्रिकेशन, स्टैम्पिंग ऐन्ड इंसुलटर प्लांट
Fabrication, Stamping & Insulator Plant (FSIP)
जगदीशपुर / Jagdishpur

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LIST OF ANNEXURES



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Enclosure:

- Annexure-1: Check List.
- Annexure-2: Offer forwarding letter / tender submission letter
- Annexure-3: No Deviation Certificate
- Annexure-4: Declaration regarding Insolvency/ Liquidation/ Bankruptcy Proceedings
- Annexure-5: Declaration by Authorized Signatory
- Annexure-6: Declaration by Authorized Signatory regarding Authenticity of submitted Documents
- Annexure-7: Non-Disclosure Certificate
- Annexure-8: Integrity Pact
- Annexure-9: Declaration confirming knowledge about Site Conditions
- Annexure-10: Declaration reg. Related Firms & their areas of Activities
- Annexure-11: Declaration for relation in BHEL
- Annexure- 12: Declaration reg. minimum local content in line with revised public procurement
- Annexure- 13: Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017
- Annexure-14: Bank Account Details for E-Payment
- Annexure-15: Power of Attorney for submission of tender.
- Annexure-16: Proforma of Bank Guarantee for Earnest Money.
- Annexure-17: Proforma of Bank Guarantee for Performance Security.
- Annexure-18: List of Consortium Bank.
- Annexure-19: Contract Agreement Format



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ANNEXURE- 1

CHECK LIST

NOTE: - Suppliers are required to fill in the following details in their Letterhead and no column should be left blank

| Check List for Tender Document | | | |
|--------------------------------|---|--------------------------------|---------------------------|
| A | Name and Address of the Supplier | | |
| B | GSTN No. the Supplier | | |
| C | Details of Contact person for this Tender | Name: Mr./ Ms. | |
| | | Designation: | |
| | | Telephone No: | |
| | | Mobile No: | |
| | | Email ID: | |
| D | DESCRIPTION | APPLICABILITY (BY BHEL) | ENCLOSED BY BIDDER |
| i. | Whether Pre - Qualification Criteria is understood and provided proper supporting documents. | Applicable | Yes |
| ii. | Whether all pages of the Tender documents including annexures, appendices etc are read and understood | Applicable | Yes |
| iii. | Audited Balance Sheet and profit & Loss Account for the last three years as per PQR. | Applicable | Yes |
| iv. A | Copy of PAN Card & GST registration | Applicable | Yes |
| iv. B | PF Code and ESI Code | Not Applicable | Not Applicable |
| v. | Submission of MSE certificate as specified in Tender | Not Applicable | Not Applicable |
| vi. | Offer forwarding letter / tender submission letter as per Annexure – 2 | Applicable | Yes |
| vii. | Submission of Certificate of No Deviation as per Annexure – 3 | Applicable | Yes |
| viii. | Declaration regarding Insolvency/ Liquidation/ Bankruptcy Proceedings as per Annexure – 4 | Applicable | Yes |
| ix. | Declaration by Authorized Signatory as per Annexure – 5 | Not Applicable | Not Applicable |



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| | | | |
|--------|--|-----------------------|----------------|
| x. | Declaration by Authorized Signatory regarding Authenticity of submitted Documents Annexure – 6 | Not Applicable | Not Applicable |
| xi. | Submission of Non-Disclosure Certificate as per Annexure –7 | Applicable | Applicable |
| xii. | Submission of Integrity Pact as specified in Tender as per Annexure – 8 | Not Applicable | Not Applicable |
| xiii. | Declaration confirming knowledge about Site Conditions as per Annexure – 9 | Applicable | Yes |
| xiv. | Declaration reg. Related Firms & their areas of Activities as per Annexure – 10 | Applicable | Yes |
| xv. | Declaration for relation in BHEL as per Annexure – 11 | Applicable | Yes |
| xvi. | Declaration reg. minimum local content in line with revised public procurement as per Annexure – 12 | Applicable | Yes |
| xvii. | Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017 as per Annexure – 13 | Applicable | Yes |
| xviii. | Bank Account Details for E-Payment as per Annexure – 14 | Not Applicable | Not Applicable |
| xix. | Power of Attorney for submission of tender as per Annexure -15 | Not Applicable | Not Applicable |
| xx. | Proforma of Bank Guarantee for Earnest Money as per Annexure – 16 | Not Applicable | Not Applicable |

NOTE: Strike off 'YES' or 'NO', as applicable. Tender not accompanied by the prescribed **above applicable documents** are liable to be summarily rejected.

DATE :

Sign. of the AUTHORISED SIGNATORY

(With Name, Designation and Company seal)



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ANNEXURE - 2

OFFER FORWARDING LETTER / TENDER SUBMISSION LETTER

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

Offer Reference No:

Date:

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Submission of Offer against Bid No:

Having examined the tender documents against your Bid No. dated and having understood the provisions of the said tender documents and having thoroughly studied the requirements of BHEL related to the work tendered for, in connection with (name of work & project site), we hereby submit our offer for the proposed work in accordance with terms and conditions mentioned in the tender documents, at the prices quoted by us and as per the indicated delivery schedule.

Should our Offer be accepted by BHEL for Award, I/we further agree to furnish 'Performance Security' for the work as provided for in the Tender Conditions within the stipulated time as may be indicated by BHEL.

I/We further agree to execute all the works referred to in the said Tender documents upon the terms and conditions contained or referred to therein and as detailed in the appendices annexed thereto.

I/We have deposited herewith the requisite Earnest Money Deposit (EMD) as per details furnished in the Check List.

Authorised Representative of Bidder

Signature:

Name:

Address:

Place:

Date:



CERTIFICATE OF NO DEVIATION

(To be Typed & submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Subject: No Deviation Certificate

Ref: 1) Bid No:

2) All other pertinent issues till date

We hereby confirm that we have not changed/ modified/materially altered any of the tender documents as downloaded from the website/ issued by BHEL and in case of such observance at any stage, it shall be treated as null and void.

We also hereby confirm that we have neither set any Terms and Conditions and nor have we taken any deviation from the Tender conditions together with other references applicable for the above referred Bid.

We further confirm our unqualified acceptance to all Terms and Conditions, unqualified compliance to Tender Conditions.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized
representative of the bidder)

Date:

Place:



UNDERTAKING

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: Bid Specification No:

I/We,

declare that,

I/We am/are not admitted under insolvency resolution process or liquidation under Insolvency and Bankruptcy Code, 2016, as amended from time to time or under any other law as on date, by NCLT or any adjudicating authority/authorities.

**Sign. of the AUTHORISED SIGNATORY
(With Name, Designation and Company seal)**

Place:

Date:



DECLARATION BY AUTHORISED SIGNATORY OF BIDDER

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration by Authorised Signatory

Ref: 1) Bid Specification No:

2) All other pertinent issues till date

I/We, hereby certify that all the information and data furnished by me with regard to the above Tender Specification are true and complete to the best of my knowledge. I have gone through the specifications, conditions, stipulations and all other pertinent issues till date, and agree to comply with the requirements and Intent of the specification.

I further certify that I am authorised to represent on behalf of my Company/Firm for the above mentioned tender and a valid Power of Attorney to this effect is also enclosed.

Yours faithfully,

(Signature, Date & Seal of Authorized
Signatory of the Bidder)

Date:

Enclosed: Power of Attorney



Declaration by Authorised Signatory regarding Authenticity of submitted documents.

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **Declaration by Authorised Signatory regarding Authenticity of submitted documents.**

Ref : 1) Bid No. & Date:

2) All other pertinent issues till date

I/We, hereby certify that all the documents submitted by us in support of possession of “Qualifying Requirements” are true copies of the original and are fully compliant required for qualifying / applying in the bid and shall produce the original of same as and when required by Bharat Heavy Electricals Limited.

I / We hereby further confirm that no tampering is done with documents submitted in support of our qualification as bidder. I / We understand that at any stage (during bidding process or while executing the awarded contract) if it is found that fake / false / forged bid qualifying / supporting documents / certificates were submitted, it would lead to summarily rejection of our bid / termination of contract. BHEL shall be at liberty to initiate other appropriate actions as per the terms of the Bid / Contract and other extant policies of Bharat Heavy Electricals Limited.

Yours faithfully,

(Signature, Date & Seal of Authorized

Signatory of the Bidder)

Date:



NON-DISCLOSURE CERTIFICATE

(To be Typed & submitted in the Letter Head of the Company/Firm of Bidder)

I/We understand that BHEL **FSIP** is committed to Information Security Management System as per their Information Security Policy.

Hence, I/We M/s

who are submitting offer for providing services to BHEL **BHEL FSIP** against Bid

No. hereby undertake to comply with the following in line with Information Security Policy of **BHEL FSIP**.

- To maintain confidentiality of documents & information which shall be used during the execution of the Contract.
- The documents & information shall not be revealed to or shared with third party which shall not be in the business interest of BHEL **BHEL FSIP**.

(Signature, date & seal of Authorized

Signatory of the bidder)

Date:



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ANNEXURE – 8

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

_____The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.



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- 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
- 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.



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- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and will await their decision in the matter.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 4 - Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

Section 5 - Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 - Equal treatment of all Bidders/ Contractors / Sub-contractors

- 6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption



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of IP by his sub-contractors and shall continue to remain responsible for any default by his subcontractors.

6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 -Independent External Monitor(s)

8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.

8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non-disclosure agreement.

8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.



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- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission,

in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.9 IEM should examine the process integrity; they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organisation.
- 8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.12 The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

- 9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.
- 9.2 If any claim is made/ lodged during currency of IP, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the CMD, BHEL.



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Section 10 - Other Provisions

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.
- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- 10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- 10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On behalf of the Principal

For & On behalf of the Bidder/ Contractor

(Office Seal)

(Office Seal)

Place----- Date-----

Witness: _____

Witness: _____

(Name & Address) _____

(Name & Address) _____



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ANNEXURE – 9

DECLARATION CONFIRMING KNOWLEDGE ABOUT SITE CONDITIONS

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration confirming knowledge about Site conditions

Ref: 1) Bid Specification No:
2) All other pertinent issues till date

I/We, hereby declare and confirm that we have visited the Project Site as referred in BHEL Tender Specifications and acquired full knowledge and information about the Site conditions including Wage structure, Industrial Climate, the Law & Order and other conditions prevalent at and around the Site. We further confirm that the above information is true and correct and we shall not raise any claim of any nature due to lack of knowledge of Site conditions.

I/We, hereby offer to carry out work as detailed in above mentioned Tender Specification, in accordance with Terms & Conditions thereof.

Yours faithfully,

(Signature, Date & Seal of Authorized
Representative of the Bidder)

Date:

Place:



General condition of Contract-Rev. 03

ANNEXURE – 10

DECLARATION

Date:

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/ Madam,

Sub: Details of related firms and their area of activities

Please find below details of firms owned by our family members that are doing business/ registered for same item with BHEL, _____ (NA, if not applicable)

| | | |
|-----|-------------------------------------|--|
| 1 | Material Category/ Work Description | |
| | Name of Firm | |
| | Address of Firm | |
| | Nature of Business | |
| | Name of Family Member | |
| | Relationship | |
| 2 | Material Category/ Work Description | |
| | Name of Firm | |
| | Address of Firm | |
| | Nature of Business | |
| | Name of Family Member | |
| | Relationship | |
| ... | | |

Note: I certify that the above information is true and I agree for penal action from BHEL in case any of the above information furnished is found to be false.

Regards,

(_____)

From: M/s _____

Supplier Code: _____

Address: _____



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ANNEXURE – 11

DECLARATION FOR RELATION IN BHEL

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder failing which the offer of Bidder is liable to be summarily rejected)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration for relation in BHEL

Ref: 1) Bid Specification No:

I/We hereby submit the following information pertaining to relation/relatives of Proprieter/Partner(s)/ Director(s) employed in BHEL

Tick (✓) any one as applicable:

1. The Proprieter, Partner(s), Director(s) of our Company/Firm DO NOT have any relation or relatives employed in BHEL

OR

2. The Proprieter, Partner(s), or Director(s) of our Company/Firm HAVE relation/relatives employed in BHEL and their particulars are as below:

I.....

II.....

.....

(Signature, Date & Seal of Authorized
Signatory of the Bidder)

Note:

1. Attach separate sheet, if necessary.
2. If BHEL Management comes to know at a later date that the information furnished by the Bidder is false, BHEL reserves the right to take suitable against the Bidder/Contractor.



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ANNEXURE – 12

**DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH
REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04TH JUNE,
2020 AND SUBSEQUENT ORDER(S)**

(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration reg. minimum local content in line with Public Procurement (Preference to Make in India), Order 2017-Revision, dated 04th June, 2020 and subsequent order(s).

Ref: 1) Bid Specification No:

2) All other pertinent issues till date

We hereby certify that the items/works/services offered by (specify the name of the organization here) has a local content of % and this meets the local content requirement for 'Class-I local supplier' / 'Class II local supplier' ** as defined in Public Procurement (Preference to Make in India), Order 2017-Revision dated 04.06.2020 issued by DPIIT and subsequent order(s).

The details of the location(s) at which the local value addition is made are as follows:

- | | |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |
| ... | |

Thanking you,

Yours faithfully,

(Signature, Date & Seal of Authorized Signatory of the Bidder)

**** - Strike out whichever is not applicable.**

Note:

1. Bidders to note that above format, duly filled & signed by authorized signatory, shall be submitted along with the techno-commercial offer.
2. In case the bidder's quoted value is in excess of Rs. 10 crores, the authorized signatory for this declaration shall necessarily be the statutory auditor or cost auditor of the company (in the case of companies) or a practising cost accountant or practicing chartered accountant (in respect of suppliers other than companies).
3. In the event of false declaration, actions as per the above order and as per BHEL Guidelines shall be initiated against the bidder.



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ANNEXURE – 13

DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017

(To be typed and submitted in the Letter Head of the Entity/ Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017

Ref: 1) Bid Specification No:
2) All other pertinent issues till date

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India. I certify that (SPECIFY THE NAME OF THE ORGANIZATION HERE), is not from such a country/ has been registered with the Competent Authority (attach valid registration by the Competent Authority, i.e., the Registration Committee constituted by the Dept. for Promotion of Industry and Internal Trade (DPIIT)).

I hereby certify that we fulfil all requirements in this regard and is eligible to be considered.

Thanking you,

Yours faithfully,

(Signature, Date & Seal of
Authorized Signatory of the Bidder)

Note: Bidders to note that in case above certification given by a bidder, whose bid is accepted, is found to be false, then this would be a ground for immediate termination and for taking further action in accordance with law and as per BHEL guidelines.



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ANNEXURE – 14

BANK ACCOUNT DETAILS FOR E-PAYMENT

(To be given on Letter head of the Company /Firm of Bidder, and **ENDORSED (SIGNED & STAMPED) BY THE BANK** to enable BHEL release payments through Electronic Fund Transfer (EFT/RTGS))

1. Beneficiary Name :

2. Beneficiary Account No. :

3. Bank Name & Branch :

4. City/Place :

5. 9 digit MICR Code of Bank Branch :

6. IFSC Code of Bank Branch :

7. Beneficiary E-mail ID :
(for payment confirmation)

NOTE: In case Bank endorsed certificate regarding above has already been submitted earlier, kindly submit photocopy of the same



General condition of Contract-Rev. 03

ANNEXURE – 15

POWER OF ATTORNEY for SUBMISSION OF TENDER

(To be typed on non-judicial stamp paper of minimum Rs. 100/- and Notarized)

KNOW ALL MEN BY THESE PRESENTS, that I/We do hereby make, nominate, constitute and appoint Mr. _____, whose signature given below herewith to be true and lawful Attorney of M/s. _____ hereinafter called 'Company', for submitting Tender/entering into Contract and inter alia, sign, execute all papers and to do necessary lawful acts on behalf of Company with M/s Bharat Heavy Electricals Ltd, Central Procurement Cell (CPC), in connection with.....
.....vide Bid

No: _____, dated _____.

And the Company do hereby agree to ratify and confirm all acts, deeds, things or proceedings as may be lawfully done by the said attorney and by or on behalf of the company and in the name of the company, by virtue of the powers conferred herein and the same shall be binding on the company and shall have full force and effect.

IN WITNESS WHEREOF, the common seal of the company has been hereunto affixed in the manner hereinafter appearing on the document.

Dated at _____, this _____ day of _____

Director/CMD/Partner/Proprietor

Signature of Mr. _____ (Attorney)

Attested by: Director/CMD/Partner/Proprietor

Witness

Notary Public



PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY

(On non-Judicial paper of appropriate value)

Bank Guarantee No.

Date

To

(Employer's Name and Address)

.....

Dear Sirs,

In accordance with the terms and conditions of Invitation for Bids/Notice Inviting Tender No.¹(Tender Conditions), M/s.
having its registered office at² (hereinafter referred to as the 'Tenderer'), is submitting its bid for the work of.....³ invited by⁴.(name of the Employer) through its Unit at(

The Tender Conditions provide that the Tenderer shall pay a sum of Rs as Earnest Money Deposit in the form therein mentioned. The form of payment of Earnest Money Deposit includes Bank Guarantee executed by a Scheduled Bank.

In lieu of the stipulations contained in the aforesaid Tender Conditions that an irrevocable and unconditional Bank Guarantee against Earnest Money Deposit for an amount of⁵ is required to be submitted by the Tenderer as a condition precedent for participation in the said Tender and the Tenderer having approached us for giving the said Guarantee,

we, the[Name & address of the Bank]

..... having our Registered Office at

.....(hereinafter referred to as the Bank) being the Guarantor under this Guarantee, hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer without any demur, merely on your first demand any sum or sums of Rs.

.....⁵ (in words Rupees.....) without any reservation, protest, and recourse and without the beneficiary needing to prove or demonstrate reasons for its such demand.

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.



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We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor/Contractor/Vendors in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment hereunder and the Tenderer shall have no claim against us for making such payment.

We Bank further agree that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Tender or to extend the time of submission of from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Tenderer and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Tenderer or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Tenderer or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Tenderer and notwithstanding any security or other guarantee that the Employer may have in relation to the Tenderer's liabilities.

This Guarantee shall be irrevocable and shall remain in force upto and including.....⁶ and shall be extended from time to time for such period as may be desired by the Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Tenderer but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms hereof. However, unless a demand or claim under this Guarantee is made on us in writing on or before the⁷ we shall be discharged from all liabilities under this Guarantee.

This Bank Guarantee shall be governed, construed and interpreted in accordance with the laws of India.

Courts at shall alone have exclusive jurisdiction over any matter arising out of or in connection with this Bank Guarantee

We, Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a. The liability of the Bank under this Guarantee shall not exceed.....⁵.....
- b. This Guarantee shall be valid up to⁶



General condition of Contract-Rev. 03

- c. Unless the Bank is served a written claim or demand on or before _____⁷ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Date.....

Place of Issue.....

- 1 *Details of the Invitation to Bid/Notice Inviting Tender*
- 2 *Name and Address of the Tenderer*
- 3 *Details of the Work*
- 4 *Name of the Employer*
- 5 *BG Amount in words and Figures*
- 6 *Validity Date*
- 7 *Date of Expiry of Claim Period*

Notes:

1. Units are advised that expiry of claim period may be kept 3-6 months after validity date. It may be ensured that the same is in line with the agreement/ contract entered with the Vendor.
2. The BG should be on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Contractor/sub-contractor /vendor/ Bank issuing the guarantee.
3. In line with the GCC, SCC or contractual terms, Unit may carry out minor modifications in the Standard BG Formats. If required, such modifications may be carried out after taking up appropriately with the Unit/Region's Law Deptt.

4. In Case of Bank Guarantees submitted by Foreign Vendors-

- a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e., Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.



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b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)

b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank's (BHEL's Consortium Bank) branch in India. It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.

b.2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.

b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). The BG Format provided to them should clearly specify the same.



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ANNEXURE – 17

BANK GUARANTEE FOR PERFORMANCE SECURITY

(On non-Judicial paper of appropriate value)

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____¹ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) with its registered office at _____² hereinafter referred to as the ' Vendor / Contractor / Supplier ', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated³ valued at Rs.....⁴ (Rupees -----) / FC.....(in words.....) for⁵ (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank Guarantee, equivalent to% (....

Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

We,, (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs -----⁶ (Rupees -----) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

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. _____.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.



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The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We thebank 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 Contract/ satisfactory completion of the performance guarantee period as per the terms of the Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

WeBANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Vendor / Contractor / Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor / Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier 's liabilities.

This Guarantee shall remain in force upto and including.....⁷ and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

Unless a demand or claim under this guarantee is made on us in writing on or before the⁸ we shall be discharged from all liabilities under this guarantee thereafter.

This Bank Guarantee shall be governed, construed and interpreted in accordance with the laws of India.

Courts at shall alone have exclusive jurisdiction over any matter arising out of or in connection with this Bank Guarantee

We, BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.



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Notwithstanding anything to the contrary contained hereinabove:

- a. The liability of the Bank under this Guarantee shall not exceed.....⁶
- b. This Guarantee shall be valid up to⁷
- c. Unless the Bank is served a written claim or demand on or before⁸ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of (Name of the Bank) Dated.....

Place of Issue.....

1 NAME AND ADDRESS OF EMPLOYER i.e., Bharat Heavy Electricals Limited

2 NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

3 DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

4 CONTRACT VALUE

5 PROJECT/SUPPLY DETAILS

6 BG AMOUNT IN FIGURES AND WORDS

7 VALIDITY DATE

8 DATE OF EXPIRY OF CLAIM PERIOD

Note:

1. Units are advised that expiry of claim period may be kept 3-6 months after validity date. It may be ensured that the same is in line with the agreement/ contract entered with the Vendor.
2. The BG should be on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Vendor/Contractor/Supplier /Bank issuing the guarantee.
3. In line with the GCC, SCC or contractual terms, Unit may carry out minor modifications in the Standard BG Formats. If required, such modifications may be carried out after taking up appropriately with the Unit/Region's Law Deptt.

4. In Case of Bank Guarantees submitted by Foreign Vendors-



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a. From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India) can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e.

Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.

b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)

b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank's (BHEL's Consortium Bank) branch in India. It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.

b.2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl.no. b.1 will required to be followed.

b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). The BG Format provided to them should clearly specify the same.



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ANNEXURE – 18

LIST OF CONSORTIUM BANK

| Sl. No. | NAME OF THE BANK |
|---------|---|
| 1 | State Bank of India |
| 2 | Canara Bank |
| 3 | IDBI Bank Limited |
| 4 | ICICI Bank Limited |
| 5 | HDFC Bank Limited |
| 6 | Axis Bank |
| 7 | IndusInd Bank Limited |
| 8 | Bank of Baroda |
| 9 | Exim Bank |
| 10 | Indian Bank |
| 11 | Punjab National Bank |
| 12 | Union Bank of India |
| 13 | Yes Bank Limited |
| 14 | RBL Bank Ltd. |
| 15 | Standard Chartered Bank |
| 16 | Indian Overseas Bank |
| 17 | Kotak Mahindra Bank Limited |
| 18 | Federal Bank Limited |
| 19 | Hongkong and Shanghai Banking Corporation Ltd |



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Annexure-19

CONTRACT AGREEMENT FORMAT

Agreement No:

Date:.....

The agreement made on between M/s. Bharat Heavy Electricals Limited, FSIP, Jagdishpur, Distt Amethi (UP) having its registered office at BHEL House, Siri Fort, New Delhi-

110049 (hererin after called the contractee) the first party, (Name of Contractor), (address.....) (hereinafter called the Contractor) the 2nd party. Whereas through its Tender Enquiry No.: -----, the contractee had called for (Name of service.....) as per scope of work at FSIP Jagdishpur. And whereas the contractor has submitted his offer in pursuance of said tender notice. And whereas the company has decided to accept contractors tender mentioned above as per the offered rates and conditions specified in offer subject to other terms and conditions specified in the tender enquiry/ proposed agreement and the company's contract hereto.

And whereas the contractor has agreed to enter (Name of service.....) at FSIP Jagdishpur specified above at the rates mentioned, subject to the conditions contained hereunder:

1. Contract Period:

02. All other terms and conditions shall be as per (WO No.....). The security deposit and any other amount occurring to the contract will be liable for forfeiture in the event of the contractor violating any of the conditions of the contractor and will be set against any claim or expenditure incurred by BHEL on account of acts of omission/negligence on the part of the contractor.

03. The rate for the aforesaid work shall be as per (WO No.....).

04. For delays beyond the specified schedule given in tender document, if attributable to contractor, penalty shall be applicable as per terms given in NIT. Cost of rejection/rework, as appropriate shall be recovered from contractor as compensation for defective job done- **Agreed.**

05. Payment shall be made, on the Nos. of Measurement units, successfully executed, by the Contractor. The contractor shall submit their clear & legible bills (in duplicate) on Monthly basis, duly verified by concerned BHEL staff. Each bill must be enclosed with work/ activity completion report duly signed by contractor & and BHEL representative (s).

The security deposit and any other amount occurring to the contract will be liable for forfeiture in the event of the contractor violating any of the conditions of the contractor and will be set against any claim or expenditure incurred by BHEL on account of acts of omission/negligence on the part of the contractor.

Settlement of Disputes/Arbitration- All disputes arising in connection with the contract shall be settled by mutual consultation. If no agreement is reached, the dispute shall be settled in accordance with Arbitration and conciliation Act, 1996 and the rules made there under. The dispute shall be referred for arbitration to any arbitrator to be appointed by the Head of Unit- FSIP, Jagdishpur. The award of the arbitrator shall be final



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and binding on both the parties. The venue of the arbitration shall be at Amethi. The award to be given by the Arbitration shall be a speaking award. All questions, disputes, differences arising under, out of or in connection with this contract shall be to the exclusive jurisdiction of Amethi (U.P.), court.

Indemnity- That BHEL-Jagdishpur will not, in any manner be responsible for any act, omission or commission of the workers engaged by contractor and no claim in this respect will lie against BHEL-Jagdishpur. If any such claim is made against BHEL-Jagdishpur by any worker or his heirs engaged/employed by the contractor, which BHEL-Jagdishpur is obliged to discharge by virtue of any statute or any provision of law and rules due to mere fact of the workers of the contractor working at BHEL-Jagdishpur premises or otherwise, the contractor will be liable to indemnify/reimburse BHEL-Jagdishpur all the money paid in addition to the expenses incurred by him. The contractor must indemnify and keep indemnified BHEL-Jagdishpur against all losses and claims for injuries or damage to any person or property whatsoever which may arise of or in course of the operation of the contract and against all claims, demands, proceedings, damages, cost, charges and expenses whatsoever in respect of contingencies depicted herein shall be deemed as expected risk.

In witness where the parties there to have here under signed the agreement.

Signature of the Contractor

For and on behalf of

Name
Designation

Bharat Heavy Electricals Ltd.
FSIP, Jagdishpur

Witness:

1.Name

Address

2.Name

Address



Section-III

SPECIAL TERMS AND CONDITIONS (STC)

(The 'Special Terms and Conditions' given hereunder supersede the relevant terms and conditions given in 'General Condition of Contract').

A. PRE-QUALIFYING CRITERIA:

| Sl. No. | Description of Qualifying requirement | Documentary Proof enclosed |
|---------|---|----------------------------|
| 1. | <p>The Tenderer should have, in the last seven years ending on 31.03.2025 successfully completed Road Construction work (Involving Bitumen works or WBM works) in any industry, Government organization or other commercial establishments Values of such successfully completed road works should be as under:</p> <p>(a) Three completed/executed works each costing not less than the amount equal to Rs 30.93 lakhs (Including GST). OR (b) Two completed/executed works each costing not less than the amount equal to Rs 38.66 Lakhs (Including GST). OR (c) One completed/executed work costing not less than the amount equal to Rs 61.86 Lakhs (Including GST).</p> <p>Copies of order/completion certificate for work completed will be considered. Equivalent document from the executing authority shall be enclosed along with Techno-commercial bid. In case of experience other than BHEL, TDS Certificate from Customer / Form 26AS is also required to be furnished by the bidder.</p> | Yes/No |
| 2. | <p>Average Annual Financial turnover during the last 3 years, ending 31st March 2024 should be at least Rs 23.20 lakhs (Including GST). Audited balance sheet and Profit & loss account shall be submitted for last 3 years i.e. F.Y. 2021-22, 2022-23 & 2023-24. If audited balance sheets are not available, provisional turnover certificate issued by practicing Chartered Accountant will be considered.</p> | Yes/No |

BHEL reserves the right to verify the documents submitted by the contractor.

In case the Tenderers not fulfilling the above conditions, the offer is liable for rejection. The semi filled, incomplete Tender Documents will be rejected.



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B. SPECIAL TERMS AND CONDITIONS RELATED TO WORK

INTRODUCTION & SITE LOCATION

The terms and conditions mentioned in this section are in addition to what are stated in General Terms & Conditions (GCC) of the tender document. In case of any contradiction between the terms and conditions given in GCC and those specified in this STC, the terms and conditions of this STC shall prevail.

Bharat Heavy Electricals Ltd. is setting up a manufacturing plant at Jagdishpur; district Amethi, UP, for production of electrical machine components. The site location is about 80 KM south east of Lucknow on Lucknow Varanasi highway and approx. 55 KM from Sultanpur and 210 Km from Varanasi. The nearest Airport is at Lucknow.

1) SCOPE OF WORK

The scope of work of contractor shall broadly cover following civil works:

- a) Scarify loose surface from existing road.
- b) Providing and laying semi- dense Bituminous concrete as per in Engineer-in-Charge.
- c) Providing and laying seal coat over prepared surface of road with bitumen heated in bitumen boiler fitted with the spray set spraying as per in Engineer-in-Charge.
- d) Providing and applying tack coat using hot straight run bitumen of grade as per in Engineer-in-Charge.
- e) Brick edging (Vertical) along length wise with half brick work.
- f) Applying 2.5 mm thick road strips
- g) Any other similar Work as asked by BHEL within the premises of BHEL Jagdishpur.
- h) Moreover, the scope of work shall be as per BOQ.
- i) The bidder's scope shall broadly include construction of all the Buildings and foundations which includes earth work, plain & reinforced cement concrete, reinforcement, scaffolding, formwork, masonry work, floor finishing, skirting, plastering, MS embedment etc.; as well as supply of all materials, consumables, labor, tools and plants, transportation and storage, sample testing etc.; all complete as per BOQ, specifications and drawings.
- j) In addition to above the bidder's scope shall also cover submission of field test results etc, as applicable, along with source of supplies for the bought out items pertaining to his scope of supplies and execution for the following –
- k) The specific technical requirements for work to be executed under this Contract shall be as per BOQ. The applicability of specifications shall be limited to the scope of civil works only as specified in the BOQ. Mechanical /Electrical items indicated are for general information only.
- l) The scope of work will also include such other related works although they may not be specifically mentioned above and all such incidental items not specified but reasonably implied and necessary for completion of the job as a whole and as desired and as directed by the engineer. The detail scope of work covered above is not a comprehensive list of items of work involved. The detail scope of work may vary considerably depending on the actual construction requirements.
- m) Unless otherwise specified, the work to be provided by the contractor for the items mentioned in the "Bill of Quantities" shall include but not be limited to the following.

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- i) Furnishing all labor, materials, supervision, construction plans, equipment, supplies, transport, to and from the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown or specified but reasonably implied or necessary for the proper completion, maintenance and handling over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provide by the engineer during the course of works.
- ii) Furnishing samples of all materials required by the engineers for testing / inspection and approval for use in the works. The engineer for final incorporation in the works may retain the samples.
- iii) Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
- iv) Giving all notices, paying all fees, taxes etc., in accordance with the General Terms & Conditions that is required for all works including temporary works.
- v) Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
- vi) Carrying out topographic survey of required area and establish levels and coordinates at suitable intervals from existing grid levels and coordinates furnished by the owner established bench marks, setting out the locations and levels of proposed structures, constructions and marking of reference pillars and other identification works etc., The contractor shall provide BHEL such a assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used.
- vii) Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract.
- viii) Make necessary storage arrangement / sheds of adequate capacity to store cement within his normal scope without any extra cost to BHEL.
- ix) Arrange necessary T & P and IMTEs for carrying out the work. A list of such T & P and IMTEs required for such work as a minimum is given in **Annexure STC-I & STC-II**.
- x) Arrange necessary Tests for the work. A list of such tests are given in **Annexure STC-III**
- n) BHEL is ISO 9001-2015, ISO 14001-2015 and OHSAS 18001-2007 certified company. The contractor in all respects shall organize his work, systems, environment, process control documentation, tools, plant, inspection, measuring and testing equipment's etc. as per instructions of Engineer.

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- o) The contractor shall also comply with applicable legislation and regulations with regards to Health, safety and environmental aspects for minimizing risk arising from occupational health, safety hazards, controlling pollution and wastage.
- p) BHEL shall provide Field Quality Plan (FQP) after award of work. The FQP shall have to be complied with by the contractor. All necessary tests and mix designs required as per field quality plan shall have to be performed by the contractor through site lab / accredited labs / institute of repute at no extra cost to BHEL.
- q) BHEL and their Consultant may depute their representative for checking and supervision of important stages of work. The contractor shall be required to provide all facilities for inspection of works at no extra cost to BHEL. Any defect in quality of work or deviations from drawings / specifications pointed out during such inspection shall be made good by the contractor in the same way as if pointed out by the BHEL Engineer, without any cost implication to BHEL.
- r) Persons so deployed shall have to work in extended hours whenever required. Workmen provided as per the above provisions shall be fully trained and experienced in the nature of work for which they are deployed. In case of requirement they may be redeployed as per requirements by the engineer.

2) TIME SCHEDULE

- a) **The contractor is required to commence the work within 1.5 Month (45 days) from the date of intimation from BHEL to start the work.**
- b) Entire work as detailed in tender specification shall be completed within **15 days from date of start of work** as per as per the programs / milestones decided by BHEL from time to time.
- c) Contractor has to mobilize adequate resources to meet his commitments to BHEL as indicated from time to time. **In case due to reasons not attributable to the contractor, the work gets delayed and additional manpower / resources have to be mobilized so as to expedite the work to meet various milestones, same shall be done within the quoted rates as per Rate Schedule, at no extra cost to BHEL.** In the event the contractor fails to respond to these requirements, BHEL shall take appropriate actions to meet its commitments in line with the provisions of General Terms & Conditions.
- d) In case due to reasons not attributable to the contractor, the work gets delayed and scheduled completion gets extended, time extension will be granted by BHEL but in no case over run compensation will be payable.
- e) The work under the scope of this contract is deemed to be completed in all respects, only when all the works are carried out as per satisfaction of BHEL. The decision of BHEL on completion date shall be final and binding on the contractor.

3) TAKING OVER OF WORKS BY BHEL

- a) All works shall be taken over by BHEL in part or in full when it has been completed in all respects and/or can be put to use satisfactorily. The complete work under the contract shall be taken over only after completion of all punch points, pending work, rework wherever required, site clearing and reconciliation of materials.
- b) The guarantee period shall start only after the complete work under the contract has been taken over by BHEL.

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4) RATE SCHEDULE CUM BOQ

- a) Contractor shall fully understand description and scope of work before quoting. The scope of work and responsibility of the contractor as mentioned under this specification shall be covered within the quoted amount / finally derived item rates.
- b) The Tenderers are required to quote the 'Total Amount' for the complete scope of work in the Annexure PB-II of BOQ & Price Schedule both in words and figures.
- c) Conditional price bids or price bids with any deviation / clarification etc. are liable to be rejected. No cutting / erasing / over writing shall be done.
- d) Quantities mentioned in the rate schedules are approximate only and liable for variation both on positive and negative sides. The tentative contract value (CV) for entire scope of work shall be calculated as per finally quoted amount / derived item rates & the quantities indicated in Rate Schedule cum BOQ.

5) VARIATION IN SCOPE OF WORK / DEVIATION LIMIT

BHEL reserves the right to add or delete items of scope of work depending upon the final requirement. For such addition or deletion, the Contract price shall be adjusted based on the quoted unit price. Such variation is not expected to be more than $\pm 25\%$. However, the quantities in the BOQ are tentative which may vary or deviate up to any limit provided the contract value is limited to $\pm 25\%$. The price quoted by the Contractor shall be valid for such variation.

6) EXTRA WORK

The Contractor shall, when requested by BHEL, perform extra work at mutually agreed rates.

7) TERMS OF PAYMENT

- a) BHEL Management shall have the right to deduct a sum equivalent to the cost of repair or replacement from the bidder's bill to make good any loss or damage incurred by contractor during the contract period.
- b) The bidder shall submit the documentary evidence of payment on account of submission of statutory payments made to the concerned agencies before clearance of bill.
- c) Measurement of work completed shall be done by the Contractor and submitted to BHEL for checking and approval. For this purpose, Contractor shall submit hard copies as well as a soft copy containing abstract & detailed measurement sheets of the bill. The measurement sheets and the bill will be checked and approved by BHEL for further processing, or returned to the Contractor for correction and resubmission. The certificate of Engineer regarding such approval and passing of sums shall be final and conclusive against the Contractor.
- d) The abstract of the measurements and final bill shall be entered/pasted in BHEL Measurement Book and signed and dated by both parties as per the provisions of the General Terms & Conditions.
- e) In case any amount is withheld by BHEL during course of execution of work on account of non-compliance of contract requirement, the same shall be recovered / released from the contractors bills as deemed fit by the engineer-in-charge of BHEL and the decision of engineer-in-charge shall be final in this regard and binding on the contractor.



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8) GUARANTEE

The works constructed by the Contractor shall be guaranteed for a period of 02 (Two) Years from taking over of all works by BHEL. During this period the Contractor shall have to attend all maintenance / repair matters relating to the contract as required by BHEL.

9) PENALTY FOR DELAY

The Contractor shall complete the work as per the time frame given in the Letter of Intent / Work Order. For late completion of work, BHEL standard LD clause shall be applicable, which is 0.5% per week for total work, subject to maximum 10% of work order value. Cost of rejection/rework, as appropriate shall be recovered from bidder as compensation for defective job done.

10) COMPLETION CERTIFICATES/ NOC FROM LOCAL STATUTORY BODIES

If required, contractor has to arrange at his own cost building/ work completion certificates from the local statutory bodies. However, any fees required for obtaining such NOCs shall be paid by BHEL on production of relevant depository challans/ receipts from such Govt. authorities.

Annexure -STC-I

INDICATIVE LIST OF TOOLS AND PLANTS (T&Ps) TO BE ARRANGED BY
THE CONTRACTOR AT HIS OWN COST

| SL NO | T & P EQUIPMENT | QUANTITY |
|-------|---|--------------------|
| 1. | CONCRETE MIXTURE M/Cs | AS PER REQUIREMENT |
| 2. | CONCRETE VIBRATORS | AS PER REQUIREMENT |
| 3. | PLY SHUTTERING BOARD AND MS SHUTTERINGS | AS PER REQUIREMENT |
| 4. | 15/20 MT TRAILORS WITH PULLING UNIT TRACTOR -TRAILORS | AS PER REQUIREMENT |
| 5. | TIPPERS FOR DUMPING MATERIAL | AS PER REQUIREMENT |

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| | | |
|----|--|--------------------|
| 6. | HYDRAULIC EXCAVATORS | AS PER REQUIREMENT |
| 7. | DIESEL / VIBRATORY ROAD ROLLER – 8 TO 10 TONNE | AS PER REQUIREMENT |

NOTES

- The above list specifies only major T&Ps (may not be complete to be deployed by the contractor). All additional / other tools and plants including trucks & devices, tackles, machines, measuring instruments etc. in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rate / price.

Annexure- STC II

INDICATIVE LIST OF INSPECTION MEASURING AND TESTING EQUIPMENTS (IMTEs) TO BE ARRANGED BY THE CONTRACTOR AT HIS OWN COST

| SL NO | IMTE EQUIPMENT | QTY |
|-------|---|--------------------|
| 1 | AUTO LEVEL AND STAFF | 2 NO |
| 2 | DUMPY LEVEL UPTO 350 MM | AS PER REQUIREMENT |
| 3 | CONSTRUCTION MATERIAL TEST EQUIPMENT | AS PER REQUIREMENT |
| 4 | CONCRETE CUBE MOULD (150 X 150 X 150) mm | 6 NOS |
| 5 | CONCRETE slump cone WITH TAMPING ROD | 1 SET |
| 6 | COARSE AGGREGATE SIEVES & SAND SIEVER | 1 SET |
| 7 | MOISTURE CONTAINER (STEEL/ ALUMINIUM) | 5 NO |
| 8 | CORE CUTTER TEST APPARATUS | 1 SET |

NOTES:

- The above list specifies only major IMTEs (may not be complete to be deployed by the contractor). Contractor has to set up the field laboratory with facilities required for material & concrete testing. All additional / other IMTEs / measuring

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instruments etc. in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rate / price.

Annexure- STC III

INDICATIVE LIST OF TESTS TO BE CONDUCTED BY THE CONTRACTOR

| SL.No. | Name of Test | Min. Qty. Required | IS code No. |
|--------|--|---------------------|------------------------|
| (A) | Road Aggregate & Fine Aggregate | | |
| 1 | Sieve Analysis and Fineness Modulus | 30 kg. | 2386 (Part I) : 1963 |
| 2 | Flakiness and Elongation Index | | |
| 3 | Water Absorption | 10 kg. | 2386 (Part III) : 1963 |
| 4 | Aggregate Impact Value | 20 kg. | 2386 (Part IV) : 1963 |
| 5 | Aggregate 10% Fine Value | 20 kg. | 2386 (Part IV) : 1963 |
| 6 | Natural Moisture Content | 5 kg. | 2386 (Part III) : 1963 |
| (B) | Bitumen | | |
| 1 | Penetration | 2 kg. | 1203-1978 |
| 2 | Elasticity Index | 2 kg. | |
| 3 | Binder Content of Tar Aggregate Mixture | 5 kg. | IRC SP 11 : 1988 |
| (C) | Miscellaneous | | |
| 1 | Bituminous Mix Design | 2 bag each material | ASTMD 1559 -71 |
| (i) | Dense Graded Bituminous Macadam | - | |
| (ii) | Bituminous Concrete | - | |

11) Bill of Quantity(BoQ):

| (Quantum of Work) (Annexure-I) | | | | |
|---------------------------------------|--|------|-----------|---|
| S.No. | DESCRIPTION OF WORK | UNIT | Total Qty | % Weightage of Item Amount against Total Amount |
| 1 | Scarifying of existing bituminous road surface upto a depth of 50 mm to remove loose gravel and disposal of scarified material within all lifts and lead upto 1 km (by mechanical means). | Sqm | 12797 | 0.786 |

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| | | | | |
|---|---|-----|-------|--------|
| 2 | Providing and applying tack coat using hot straight run bitumen of grade VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications on bituminous surface@ 0.50 kg/sq.m. | Sqm | 25594 | 11.138 |
| 3 | Providing and laying semi- dense Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in- Charge. 40 mm compacted thickness with bitumen of grade VG- 30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity. | Sqm | 12797 | 66.399 |
| 4 | Providing and laying seal coat over prepared surface of road with bitumen heated in bitumen boiler fitted with the spray set spraying using 98 kg of bitumen of grade VG - 10 and blinding surface with 0.90 cum of stone aggregate of 6.7 mm size (Passing 11.2 mm sieve and retained on 2.36 mm sieve) per 100 sqm of road surface, including rolling and finishing with power road roller all complete. | Sqm | 12797 | 16.409 |
| 5 | Brick edging laid lengthwise (vertical) with half brick depth including excavation, refilling and disposal of surplus earth lead upto 50 metres : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5 | Cum | 844 | 0.51 |
| 6 | Supplying Good Earth and stacking at site + Filling available excavated earth (excluding rock) in along roadside in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m. | Cum | 127 | 1.156 |

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| | | | | |
|----------------|---|------|-----|---------------|
| 7 | Providing and applying 2.5 mm thick road marking strips (retroreflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of engineer-in-charge and accordance with applicable specifications. | Sqm | 381 | 2.992 |
| 8 | Providing and fixing Glow studs of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acrylonitrile) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro- reflective surface shall be 35 (+/-5) degrees to base .The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4 : 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge. | Each | 240 | 0.61 |
| Total % | | | | 100.00 |



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12) Price Bid Format:

| Annexure-PB II | | |
|---|--|-----------------------|
| | Price Schedule | |
| BOQ (As per Annexure-I) | | Total Amount (in Rs) |
| Total Amount inclusive of GST (Rupees in Figures) : | | |
| Total Amount inclusive of GST (Rupees in Words) : | | |
| Note: | | |
| 1 | Total price of the package to be quoted by the bidders which shall form the basis of comparison for deciding lowest bid. | |
| 2 | In case of any discrepancy between 'Total Quoted Amount (in Figures)' and 'Total Quoted Amount (in Words)', lower of the two 'Amounts' shall be considered for evaluation purpose | |
| 3 | For further processing & Award of work, Total Quoted Amount by the L1 (lowest) bidder shall be used for deriving Individual item rate by BHEL based on % (percentage) weightage specified in BOQ (Annexure-I). | |

C. Technical Specifications

This Document shall consist of following sections: -

- ☐ Part A
- ☐ Part B

PART – A

SPECIFIC TECHNICAL REQUIREMENTS

1.0 GENERAL

Part-A covers specific technical requirements of contract and should be read in conjunction with BOQ, Part-B and other sections of the contract. In case of any conflict between the contents of BOQ and Part-A, BOQ will prevail over Part-A. In case of any conflict between Part-A and Part-B, Part-A will prevail over Part-B.

2.0 FREE ISSUE MATERIALS

Nothing shall be supplied as free issue material by BHEL.

3.0 DISMANTLING OF EXISTING STRUCTURES

The contractor will have to carry out dismantling of buried/ semi buried structures, if any, encountered within the battery limit and disposal of it within plant boundary as directed by BHEL at no extra cost to BHEL.

4.0 STATUTORY REQUIREMENTS

Bidder shall comply with all the applicable statutory rules pertaining to Factories Act, Fire Safety Rules of Tariff Advisory Committee, Water Act for pollution control, Explosives Act, etc.

Provisions of safety, health and welfare according to Factories Act shall be complied with. These shall include provision of continuous walkway minimum 500 wide along the crane-girder level on both sides of building, comfortable approach to EOT crane cabin, railing, fire escape, locker room for workmen, pantry, toilets, rest room, etc.

Provisions for fire proof doors number of staircases, fire separation wall, lath plastering/encasing the structural members (in the fire prone areas), type of glazing etc. shall be made according to the recommendations of Tariff Advisory Committee.

Statutory clearances and norms of State Pollution Control Board shall be followed.

Bidder shall obtain approval of Civil/Architectural drawings from concerned authorities before taking up the construction work.

5.0 LAYOUT

Before starting the work, the Contractor shall carry out the setting out of foundation and structures and provide levels, with reference to general existing grid and bench mark. If the contractor uses the grid, , bench mark and reference pillar made by other Contractors, he shall coordinate with the Contractor and shall satisfy himself of the accuracy of the reference marks. If he is required to set out the foundation afresh, he shall do so independently with reference to the one existing grid and bench mark which has been followed by other agency at the instruction of the Engineer. In case any discrepancy be found, it shall be immediately brought to the notice of the engineer for any rectification/modification necessary. No complaint shall be entertained at a later stage. The Contractor shall accurately set out the position for holding down bolts and inserts.

If required, in the opinion of the Engineer, he shall construct and maintain pillars for Grid, references and bench marks and maintain them till the completion of the construction. He shall also help the Engineer with instruments, materials and labours for checking the detailed lay outs and levels. The Contractor shall be solely responsible for the correctness of the layout and levels, and Engineer's approval shall not be deemed to imply any warranty in carrying out the work correctly.

6.0 WORKMANSHIP

Workmanship shall be of the best possible quality and all work shall be carried out by skilled workmen except for those which normally require unskilled persons. Welding shall be done by experienced and certified welders in proper sequence using necessary jigs and fixtures. Fabrications shall be done in shops having proper equipment for accurate edge planning and milling of column shall ends, base late surfaces etc. and shaping and dimensioning of anchor bolt assembly, inserts and other misc. items. In addition to the requirement specified above, if the bye-laws of the local Govt., Municipal or other authorities require the employment of licensed or registered workmen for various traders, the contractor shall arrange to have the work done by such registered or licensed personnel. In case of manufactured materials, the Contractor shall have, with no additional cost the owner, the services of the supervisors of the manufacturers to achieve that the work is being done according to the manufacturer's specifications.

7.0 TEMPORARY WORK

All scaffoldings, staging, temporary bracing and other necessary temporary work required for proper execution of the Contract shall be provided by the Contractor at his own cost and inclusive of all materials, labour, supervision and other facilities.

The layout and details of such Temporary work shall have the prior approval of the Engineer as agreed, but the Contractor shall be responsible for proper strength and safety of the same. All Temporary work shall be so constructed as not to interfere with any permanent work or with the work by other agencies. If it is necessary to remove any of the temporary work at any time to facilitate execution of the work or with the work of other agencies, such removal and re-erection, if required, shall be carried out by the Contractor at the discretion of the Engineer without any delay and any extra cost on this account shall be borne by the Contractor.

8.0 INTERFACE WITH STRUCTURES UNDER OTHER'S SCOPE

- a) In cases of interface e.g. structures under other's scope of supply being supported on structures under scope of this contractor, the same will be discussed and suitably addressed.
- b) Modification in layout of foundation/structure during detail engineering stage may be necessary to avoid fouling with those under other's scope. Necessary changes on this account will be made without any extra cost to Owner.
- c) Necessary engineering is to be done and provisions are to be kept accordingly by the Contractor to construct foundations/underground structures, etc. without disturbing/ endangering the constructions done under the scope of other contracts.

9.0 INSPECTION, TESTING AND QUALITY CONTROL FOR CIVIL WORKS

Sampling and testing for major items of civil works viz earthwork, concreting, structural steel work (including welding) etc. shall be carried out in accordance with the requirements of this specification and field quality plan (FQP).

The bidder shall get a detailed field quality assurance programme from BHEL for civil and road works before starting of the construction work. This shall include the guidance to bidder for frequency of sampling and testing nature/type of test, method of test, arrangement of testing apparatus/equipment, deployment of qualified/experienced manpower, preparation of format for record as per Field Quality Plan. Bidder will responsible for Setting

of a Field testing laboratory and/or at a laboratory approved by the Engineer and the Bidder shall submit to the Engineer, the test results in triplicate. In addition, the bidder shall furnish the original test certificate from the manufacturers of various materials to be used in the construction.

If any work found to be of inferior quality or sub-standard, the same shall be dismantled and shall be redone as per approved quality or relevant standard. BHEL reserve the rights to reject the work of inferior quality. All expenses on account of dismantling and rework shall be borne by contractor.

10.0 CONSTRUCTION / ERECTION METHODOLOGY

- Construction excavation activities shall be fully mechanized from the start of the work.
- All excavation and backfilling work shall be done using excavators, loaders dumpers, dozers, poclains, excavator mounted rock breakers, rollers, sprinklers, water tankers, etc. Manual excavation can be done only on isolated place with specific approval of engineer.
- Dewatering shall be done using the combination of electrical and stand-by diesel pumps.
- For concreting, weigh batching plants, transit mixers, concrete pumps, hoists, etc. shall be used.
- All fabrication and erection activities of structural steel shall be carried out using automatic submerged arc welding machines, cutting machine, gantry cranes, crawler / wheel mounted heavy cranes and other equipments like heavy plate bending machines, shearing machines, lathe, milling machines etc. Use of derricks shall not be permitted.
- All handling of materials shall be with cranes. Heavy trailers shall be used for transportation.
- Mechanized modular units of scaffolding and shuttering shall be used.
- Grouting shall be carried out using hydraulically controlled grouting equipment.
- Roadwork shall be done using pavers, rollers and premix plant.
- All finishing items shall be installed using appropriate modern mechanical tools.
- Manual punching etc. shall not be permitted.
- Heavy duty hoist for lifting of construction materials shall be deployed.
- Compressors for cleaning of foundations and other surfaces shall be used.
- Field laboratory shall be provided with all modern equipment for survey, testing of aggregates, concrete, welding etc. For testing of steel works, dye penetration test equipment, etc shall be deployed.
- All persons working at site shall be provided with necessary safety equipment and all safety aspects shall be duly considered for each construction/erection activity. Moreover, only the persons who are trained in the respective trade shall be employed for executing that particular work.
- Fabrication and Erection of all fabricated columns shall be done in single piece unless otherwise provided for in the approved drawings. Main columns of the power house building can have maximum of one number of the erection splice. All shop and site splice shall suitably have staggered. The erection splice shall be provided with full strength splice cover plate over the butt weld. Contractor shall submit the erection scheme for the erection of all type of structures and carryout the erection work only after approval of the scheme by the owner.

11.0 FIELD LABORATORY FACILITIES AT SITE FOR MATERIAL TESTING:

Contractor shall provide field testing facilities at site laboratory built by the contractor as per list of apparatus at annexure-A-1.

12.0 MAKE OF BOUGHT OUT MATERIAL:

Contractor shall supply bought out items as per the list attached at annexure-A-2 of this section.

ANNEXURE – “A-1”

CONTRACTOR SHALL PROVIDE MINIMUM FOLLOWING FACILITIES IN SITE IN THE FIELD LABORATORY FOR MATERIAL TESTING

General Equipment

| Sl.No | Description | Sl.No | Description |
|-------|--------------------|-------|-------------------|
| 1. | Balances | 10. | Burette stand |
| 2. | Drier | 11. | Pipette |
| 3. | Thermometer | 12. | Wooden mallet |
| 4. | Hydrometer | 13. | Hair brush |
| 5. | Hand-scoop | 14. | Wire Brush |
| 6. | Glass beakers | 15. | Buckets |
| 7. | Measuring Cylinder | 16. | Test Tubes |
| 8. | Desiccator | 17. | Working platforms |
| 9. | Burette | 18. | Alcometer |

Soil testing apparatus for conducting the following tests:

Particle size analysis and index properties of soil

Moisture-density relations of soil

Specific gravity of soil

Density of soil in place by sand replacement method

CBR initial and field testing apparatus as per IRC/ Department of Road Transport and Highway Govt of India guidelines

Testing Equipment for conducting the following tests on concrete samples:

Specific gravity and absorption and bulking of fine aggregates

Sieve analysis of fine aggregates and coarse aggregates

INDICATIVE LIST OF APPROVED MAKE OF BOUGHT OUT MATERIAL TO BE ARRANGED BY THE CONTRACTOR AT HIS OWN COST

The following list may be read in conjunction with the relevant make/ makes of materials mentioned in the BOQ or elsewhere in this tender document.

| S.NO. | MATERIAL NAME | MAKE |
|--------------|--|--|
| 1. | GI & MS PIPES | SURYA, PRAKASH, JINDALHISSAR, TATA |
| 2 | CEMENT | JP BUNIYAD, MAIHAR CEMENT, ULTRATECH , L&T OR EQUIVALENT |
| 3 | REINFORCEMENT STEEL | TATA-TMT, SAIL, OR EQUIVALENT |
| 4 | STRUCTURAL STEEL | TATA, SAIL |
| 5 | COARSE SAND | BADA/KALPI /DUDHI |
| 6 | LOCAL SAND | GHAGHARA/ GANGA |
| 7 | STONE BALLAST FOR BASE CONCRETE / WATER BOUND MACADAM | SHANKERGARH/ DALA OR EQUIVALENT |
| 8 | STONE GRIT, 20MM, 12MM, 8MM FOR RCC WORK / BITUMIN ROAD WORK | JHANSI/ BHARATKROUP |

PART - B

STANDARD TECHNICAL SPECIFICATION FOR LAND DEVELOPMENT AND APPROACH ROADS

Following sections of technical specifications shall be followed for all works at site in addition to standard CPWD specifications.

B1: EARTHWORK IN EXCAVATION, AREA FILLING, LEVELLING AND GRADING

1.00.00 SCOPE

This specification covers earth work excavation in all types of soil, soft rock and hard rock including setting out, clearing and grubbing, shoring, dewatering, area filling with good earth, watering, compaction of fills, testing, approaches, disposal of surplus earth, etc relevant to locations covered under this contract.

1.01.0 Work To Be Provided By The Contractor

The work to be provided for by the contractor unless specified otherwise shall include but not be limited to the following.

a) Supplying and providing all labour, supervision services including as required under statutory labour regulations, materials, scaffolding, equipments, tools and plants, transportation etc required for the work.

b) Carrying out sampling and testing on fill materials/fills to assess the quality/moisture content/degree of compaction and submission of the test results whenever required by the engineer.

1.02.00 Work to be provided by others

No work under this specification will be provided by any agency other than the contractor unless specifically mentioned elsewhere in the contract.

2.00.00 Codes and Standards

All work shall be carried out as per this specification and shall conform to the latest revision and/or replacements of the following or any other Indian Standard (IS) Codes unless specified otherwise.

| | |
|---------|--|
| IS-1200 | Method of measurement of building and civil engineering works, |
| | Part-I: Earthwork |
| IS-2720 | Method of test for soils (Relevant parts) |
| IS-3764 | Excavation work - Code of safety |
| IS-4081 | Safety code for blasting and related drilling operations |
| IS-4701 | Indian Standard Code of Practice for earthwork on Canals |

IS:6922 Criteria for safety and design of structures subject to underground blasts

In case of conflict between this specification and those (IS Codes) referred to herein, the former shall prevail. In case any particular aspect of work is not covered specifically by this specification/IS Codes, any other standard practice as may be specified by the engineer shall be followed.

2.01.00 Conformity with Designs

The contractor shall carry out the work as per specification and as directed by the engineer.

2.02.00 Materials

2.02.01 General

All materials required for the work shall be of the best quality available and as approved by the engineer.

2.02.02 Material for Excavation

For the purpose of identifying the various strata encountered during the course of excavation, the following classification is to be followed.

a) Soil

It include all type of soil including laterite and moorum etc with/without any percentage of kankars which can be excavated by normal means such as shovel, pick axe, crow bar, spade etc and those which do not fall under clause 2.02.02 (b) and (c) etc.

b) Soft Rock

It includes the rocks (including weathered rock) which are removable by splitting with the help of crow bar, pick axe, wedges, pavement breakers, pneumatic tools, hammers or such implements etc and not requiring blasting (for excavation) in the opinion of the engineer.

c) Hard Rock

It includes the rocks which require blasting for excavation in the opinion of the engineer. Where blasting is prohibited for any reasons, the excavation shall be carried out by chiselling or any other method as approved by the engineer. The mere fact that the contractor resorts to blasting shall not classify the soft rock under hard rock.

However, the engineer's decision on the type of strata encountered during excavation shall be final and binding on the contractor.

2.02.03 Material for Filling

Material to be used for filling shall be free from vegetation's, roots, salts, rubbish, lumps, organic matter and any other harmful chemicals etc. and shall be got approved by the engineer. Normally excavated earth or good earth supplied from outsource shall be used for filling. In case such earth contains deleterious salts, the same shall not be used. All clods of earth shall be broken or removed. Where the excavated material is mostly rock and if filling with the same is permitted by the engineer in writing, then the filling with rock shall be done in the following manner. The boulders shall be broken into pieces not exceeding 150mm size in any direction and mixed with fine materials consisting of decomposed rock, moorum or any approved earth to fill the voids as far as possible and the mixture shall then be used for filling.

In case the earth required for filling is over and above the earth available from the compulsory excavations within the project area, then borrow areas for obtaining suitable fill material shall be arranged by the contractor himself from outside the plant boundary limits and all expenses including royalties, taxes, duties etc shall be borne by him. The selected earth from the borrow areas shall be got approved by the engineer. The borrowed material shall be free from roots, vegetation's, decayed organic matter, harmful salts and chemicals, free from lumps and clods etc. The contractor shall obtain and submit necessary clearances/permissions from the concerned authorities for the borrow areas/materials acquired to the engineer.

If specified, the back filling shall be done with clean well graded sand from approved quarries free from harmful and deleterious materials.

2.03.00 Quality Control

All works shall confirm to the lines, levels, grades, cross sections and dimensions shown as directed by the engineer. The contractor shall establish and maintain quality control for the various aspects of the work, method of construction, materials and equipment's used etc. The quality control operation shall include but not be limited to the following.

| Sl. No. | Activity | Check |
|---------|-------------------------------------|---|
| 1 | Lines, levels & grades | a) By periodic surveys b) By establishing markers, boards etc |
| 2 | Area filling, levelling and grading | (a) On quality of fill material (b) On moisture content of back fill (c) On degree of compaction achieved |

3.00.0 EXECUTION

The contractor shall prepare and submit the detailed schemes for excavation and filling works with area levelling and grading as proposed to be executed by him showing the dimensions as per the construction drawings and specification adding his proposal of slopes, shoring, approaches, dewatering, drainage, berms and compaction etc. within 15 days of award of the contract to the engineer for approval.

3.01.0 SETTING OUT

On receiving the approval from the engineer with modifications and corrections if any, the contractor shall set out the work from the control points furnished by the engineer and fix permanent points and markers for ease of periodic checking as the work proceeds. These permanent points and markers shall be fixed at the interval as prescribed by the engineer and shall be got checked and certified by the engineer after whom the contractor shall proceed with the work. It should be noted that this checking by the engineer prior to the start of the work will in no way relieve the contractor of his responsibility of carrying out the work to true lines, levels and grades as per the engineer in charge. If any errors are noticed in the contractor's work at any stage, the same shall be rectified by the contractor at his own risk and cost.

3.02.00 Clearing and Grubbing

The area to be excavated shall be cleared out of fences, trees, logs, stumps, bushes, vegetation, rubbish, slush etc. Trees up to 300mm girth shall be uprooted. Trees above 300mm girth to be cut shall be approved by the engineer and marked. Cutting of trees shall include removing roots as well. After the tree is cut and roots taken out, the pot holes formed shall be filled with good earth in 250mm layers and compacted unless directed otherwise by the engineer. The trees shall be cut in to suitable pieces as instructed by the engineer. Before earthwork is started, all the spoils, unserviceable materials and rubbish shall be burnt or removed and disposed to the approved disposal area(s) as specified by the engineer. Useful materials, saleable timber, fire woods etc shall be the property of the owner and shall be stacked properly at the worksite in a manner as directed by the engineer.

3.03.00 Excavation for Foundations and Trenches

3.03.01 General

All excavation shall be done to the minimum dimensions as required for the safety and working facility. In each individual case, the contractor shall obtain prior approval of the engineer for the method he proposes to adopt for the excavation including dimensions, side slopes, shoring, dewatering, drainage and disposal etc. This approval however shall not in any way make the

engineer responsible for any consequent loss or damage. The excavation must be carried out in the most expeditious and efficient manner. All excavation in open cuts shall be made true to the line, slopes and grades as directed by the engineer. No material shall project within the dimension of minimum excavation lines marked. Boulders (if any) projecting out of the excavated surfaces shall be removed if they are likely to be a hindrance to the work/workers in the opinion of the engineer.

Method of excavation shall in every case be subject to the approval of the engineer. The contractor shall ensure the stability and safety of the excavation, adjacent structures, services and works etc including the safety of the workmen. If any slip occurs, the contractor shall remove all the slipped materials from the excavated pit without any extra cost to the engineer/owner. All loose boulders and semi-detached rocks which are not inside but so close to the area to be excavated and may liable to fall or otherwise endanger the workmen, equipment of the work etc during excavation in the opinion of the engineer shall be stripped off and removed away from the area of excavation. The method to be used for removal shall be such that it should not shatter or render unstable or unsafe the portion which was originally sound and safe. In case any material not required to be removed initially but later to become loose or unstable in the opinion of the engineer shall also be promptly and satisfactorily removed.

The rough excavation may be carried out up to a maximum depth of 150 mm above the final level. The balance shall be excavated with special care. If directed by the engineer, soft and undesirable spots shall be removed even below the final level. In case where excavation in soil, soft rock (including weathered rock) and hard rock are involved, the excavation in each stratum shall be carried out separately with the approved methodology and as per the instructions of the engineer.

All excavated materials such as rock, boulders, bricks, dismantled concrete blocks etc shall be the property of the owner and shall be stacked separately as directed by the engineer. All gold, silver, oil, minerals, archeological and other findings of importance, trees cut or other materials of any description and all precious stones, coins, treasures, relics, antiquities and other similar things which may be found in or upon the site shall be the property of the owner and the contractor shall duly preserve the same to the satisfaction of the engineer/owner. The contractor shall deliver the same to such person or persons as may be authorized or appointed from time to time by the owner to receive the same.

Prior to starting the excavation, the ground level at the location shall be checked jointly with the engineer.

3.03.02 Excavation in All Type of Soil and in Soft Rock

The excavation in all type of soil, soft rock including decomposed rock etc shall be carried out as per the approved proposal and as directed by the engineer. The work shall be carried out in a workmanlike manner without endangering the safety of nearby structures/services or works and without causing hindrance to any other activities in the area. Foundation pits shall not be excavated to the full depth unless construction is imminent. The last 150mm depth shall be excavated once concreting work is imminent. At the discretion of the engineer, the full depth may be excavated and the bed be covered with lean concrete as specified after watering and compacting the bed. As the excavation reaches the required dimensions, lines, levels and grades etc, the work shall be got checked and approved by the engineer. In cases where deterioration of the ground, upheaval, slips etc are expected, the engineer may order to suspend the work at any stage and instruct the contractor to carry out the protection works before the excavation will be restarted.

3.03.03 Excavation in Hard Rock

Hard rocks shall normally be excavated by means of blasting. In case where blasting is prohibited for any reasons, the excavation shall be carried out by chiselling or any other approved method as directed by the engineer. Personnel deployed for rock excavation shall be protected from all hazards such as loose rock/boulder rolling down and from general slips of excavated surfaces. Where the excavated surface is not stable against sliding, necessary supports such as props, bracings or bulkheads shall be provided and maintained during the period of construction. Where the danger of falling loose rock/boulder from the excavated surfaces deeper than 2m exist, steel mesh anchored to the lower edge of the excavation and extending over and above the rock face adequate to retain the dislodged material shall be provided and maintained.

3.03.04 Disposal of Surplus Materials

All surplus material from excavation shall be removed and disposed of from the excavation site to the designated disposal area indicated by the engineer. All good and sound rocks obtained from excavations and all assorted materials of dismantled structures are the property of the owner and if the contractor wants to use it, he shall have to obtain it from the engineer at a mutually agreed rate. All sound rocks and other assorted materials like excavated bricks etc shall be stacked separately.

3.03.05 Protection

The contractor shall notify the engineer as soon as the excavation is expected to be completed within a day so that he shall inspect it at the earliest. Immediately after approval of the engineer, the excavation must be covered up in a shortest possible time. But in no case the excavation shall be covered up or worked on before approval by the engineer. Excavated material shall be

placed 1.5m or half the depth (of excavation) whichever is more from the edge of the excavation or further away if directed by the engineer. Excavation shall not be carried out below the foundation level of the structure close by until the required precautions are taken. Adequate fencing is to be made enclosing the excavation. The contractor shall protect all the underground services exposed during excavation. All existing surface drains in the work area shall be suitably diverted by the contractor before taking up excavation to maintain the working area neat and clean.

3.03.06 Dewatering

All excavation shall be kept free of water and slush. Grading in the vicinity shall be controlled to prevent the surface water running into the excavations. The contractor shall remove any water inclusive of rain water and subsoil water etc accumulated in the excavation by pumping or other means as approved by the engineer and keep the excavations dewatered and/or lower the subsoil water level to 300mm below the founding level until the construction of foundation and backfilling are completed in all respects.

Sumps made for dewatering must be kept clear of the foundations. The engineer's prior approval on the method of pumping to be adopted shall be taken; but in any case, the pumping arrangement shall be such that there shall be no movement or blowing in of subsoil due to the differential head of water during pumping.

3.03.07 Timber Shoring

Close or open type timber shoring as approved by the engineer depending on the nature of sub-soil, depth of pit or trench and the type of timbering shall be adopted. Timbers made out of approved quality shall only be used. It shall be the responsibility of the contractor to take all necessary steps to prevent the sides of trenches and pits from collapsing.

a) Close Timbering

Close timbering shall be done by completely covering the sides of the trenches and pits generally with short, upright members called "polling boards". These shall be of 250mm wide(min.) and 40mm thick(min.) sections as directed by the engineer. The boards shall generally be placed vertically in pairs, one on each side of the cut and shall be kept apart (maximum spacing is limited to 1.20m) by horizontal walers of strong wood cross strutted with wooden struts or as directed by the engineer. The length of wooden struts shall depend on the width of the trench or pit.

In case where the soil is very soft and loose, the boards shall be placed horizontally against the sides of excavation and supported by vertical walers which shall be strutted to similar timber pieces on the opposite

face of the trench or pit. The lowest board supporting the sides shall be taken into the ground. No portion of the vertical side of the trench or pit shall remain exposed to avoid any slipping out of earth.

The withdrawal of the timber shall be done very carefully to prevent the collapse of the pit or trench. It shall be started from one end and proceeded systematically to the other end. Concrete or masonry shall not be damaged during the removal of the timber. No claim shall be entertained for any timber which cannot be withdrawn and is lost or buried.

b) Open Timbering

In case of open timbering, vertical board of 250mm wide(min.) and 40mm thick(min.) shall be spaced sufficiently apart to leave unsupported strips of maximum 500mm average width. The detailed arrangement, size of timber and the spacing etc shall be subjected to the approval of the engineer. In all other respects, the specification for close timbering shall apply to open timbering as well.

3.03.8 Treatment of Slips

The contractor shall take all precautions to avoid high surcharges and provide proper surface drainage to prevent flow of water over the sides of the excavations. These precautions along with proper slopes, berms, shoring and control of ground water should cause no slips to occur. If however slips still occur, the same shall be removed by the contractor with his own risk and cost.

3.04.00 Area Filling, levelling and grading

3.04.01 General

The material to be used for filling shall be approved by the engineer which shall be obtained directly from the excavation, from the nearby areas where excavation work by the same agency is in progress, from the temporary stacks of excavated spoils or from the borrow pits as directed by the engineer. The material shall be free from lumps and clods, roots and vegetations, harmful salts and chemicals, organic materials etc.

In locations where sand filling is required, the sand used should be clean, well graded and be of the quality normally acceptable for use in concrete.

3.04.02 Filling and Compaction in Pits and Trenches around the Structures

The spaces around the foundation in pits and trenches shall be cleared of all debris, brick bats, mortar droppings etc and filled with approved earth in layers not exceeding 250mm (in loose thickness). Each layer (loose) shall be

watered, rammed and properly compacted to the required degree to the satisfaction of the engineer. Earth shall be compacted with approved mechanized compaction machine. Usually, no manual compaction shall be allowed unless specifically permitted by the engineer. The moisture content of the fill material during compaction shall be controlled near to its optimum moisture content so as to obtain the required degree of compaction. The final surface shall be trimmed and levelled to proper profile as desired by the engineer.

3.04.03 Plinth Filling

The plinth shall be filled with earth in layers not exceeding 250mm (in loose thickness) and each layer shall be watered and compacted to the required degree with approved compaction machine or manually if specifically permitted by the engineer. When the filling reaches the finished level, the surface shall be flooded with water for at least 24 hours, allowed to dry and then rammed and compacted in order to avoid any settlement at a later stage. The finished surface of fill shall be trimmed to the slope intended to be provided for the floor.

3.04.04 Filling in Trenches for Water Pipes and Drains

Filling in trenches for pipes and drains shall be commenced as soon as the joints of pipes and drains have been tested and passed. Where the trenches are excavated in soil, the filling shall be done with earth on the sides and top of pipes in layers not exceeding 150mm, watered, rammed and compacted taking care that no damage is caused to the pipe below.

In case of trenches excavated in rock, the filling upto a height of 300mm or the diameter of the pipe whichever is more above the crown of the pipe or barrel shall be done with fine material such as earth, moorum, disintegrated rock or ash as per the availability at site and shall be filled in compacted layers not exceeding 150mm. The remaining filling shall be done in layers with the mixture of boulders (of size not exceeding 150mm) and fine material as specified elsewhere in the specification. Each layer shall be watered, rammed and compacted to the required degree and to the satisfaction of the engineer.

3.04.05 Filling in Designated Area

Materials from excavation and the materials brought from outside should be spread in layers approximately 250mm thick when loose, watered and compacted with the help of a compacting equipment as per the directions of the engineer. In wide areas, rollers shall be employed and compaction shall be done to the satisfaction of the engineer at the optimum moisture content which shall be checked and controlled by the contractor.

3.05.00 Approaches and Fencing

The contractor should provide and maintain proper approaches for the workmen and inspection. The roads and approaches around the excavation should be kept clear at all times so that there is no hindrance to the movement of men, material and equipment of various agencies connected with the project. Sturdy and elegant fencing is to be provided around the top edge of the excavation as well as around the bottom of the fill where dumping from a high bench is in progress.

3.06.00 Lighting

Full scale area lighting is to be provided if night work is permitted or directed by the engineer. If no night work is in progress, red warning lights should be provided at the corners of the excavated pit and the edges of the fill.

4.00.00 TESTING AND ACCEPTANCE CRITERIA

4.01.00 Excavation

On completion of excavation, the dimension of the pits will be checked after the pits are completely dewatered. The work will be accepted after all undercuts have been set right and all over excavations are filled back to the required lines, levels and grades by placing ordinary cement concrete of 1:4:8 proportion and/or richer and/or by compacted earth as directed by the engineer. The choice of the grade of concrete will be a matter of unfettered discretion of the engineer. Over excavation of the sides shall be made good by the contractor while carrying out the backfilling. The excavation work will be accepted after the above requirements are fulfilled and all the temporary approaches encroaching inside the excavation have been removed.

4.02.00 Filling, levelling and grading

The degree of compaction required will be as per the stipulation laid down in IS: 4701 and the actual method of measuring the degree of compaction will be as decided by the engineer. The work of back filling will be accepted after the engineer is satisfied with the degree of compaction achieved.

5.00.00 RATES AND MEASUREMENTS

5.01.00 Rates

a) The item of work in the schedule of quantities describes the work very briefly. The various items of the schedule of quantities shall be read in conjunction with the corresponding section in the technical specification including amendments and additions if any. For each item in the schedule of quantities, the bidder's rate shall include all the

activities covered in the description of the items as well as for all necessary operations in detail as described in the technical specification.

- b)** No claims shall be entertained if the details shown on the released for BOQ differ in any way from those shown on the tender BOQ.
- c)** The unit rate quoted shall include minor details which are obviously and fairly intended and which may not have been included in these documents but are essential for the satisfactory completion of the work.
- d)** The bidder's quoted rate shall be inclusive of supplying and providing all labour, men, materials, equipments, tools and plants, supervision, services, approaches, schemes etc.
- e)** In case blasting in hard rock is envisaged, the unit rate quoted for earth work shall include the cost of storage and safety arrangements for the materials required for blasting. No separate payment will be made on this account.

5.02.00 Measurements

Method of measurements is specified in the proceeding sections. Where not so specified, the latest version of IS: 1200, Part-1 shall be applicable.

- a)** The length, breadth and depth shall be measured correct to the nearest centimetre if measurements are taken by tape. Rounding of numerical shall be as per relevant IS Codes. If the measurements are taken with staff and level, the levels shall be recorded correct to 5mm. The area and volume shall be worked out in square meter and cubic meter respectively correct to the nearest of two decimal places.
- b)** Stacks of supplied earth shall be measured as per laid down practice in CPWD specifications . Necessary void deductions as per CPWD specs. shall be carried out to arrive at net quantity for payment.
- c)** For earth work in excavation, the ground levels shall be taken before and after completion of the work in the actually excavated area. The quantity of earth work in excavation shall be computed from these levels in cubic meter.
- d)** Where soft rock and hard rock are mixed, the measurement shall be done as follows. The two types of rock shall be stacked separately and measured in stacks. The net quantity of each type of rock shall be so arrived by applying a deduction of 50% for looseness/voids in the stacks. If the sum of net quantity of the two types of rock so arrived exceeds the total quantity of excavation, then the quantity of each type of rock shall be worked out from the total quantity (from excavation) in the ratio of net quantities in stack measurements of the two types of rock. If stacking is not feasible, the method as suggested by the engineer shall be followed.
- e)** Where soil, soft rock and hard rock are mixed, the measurement shall be done as follows. The soft and hard rock shall be removed from the excavated material and stacked separately and measured in stacks. The net quantity of

each type of rock shall be so arrived by applying a deduction of 50% for looseness/voids in stacks. The difference between the entire excavation and the sum of the quantities of soft and hard rock so arrived shall be taken as soil.

6.00.00 INFORMATION TO BE SUBMITTED BY THE BIDDER

6.01.00 With Tender

Detail of equipments and machineries proposed to be used for excavation, filling, levelling and grading and compaction shall be submitted along with the tender.

6.02.00 After Award

After award of the contract the successful bidder shall submit the following for approval.

a) Within 30 days of the award of contract, the contractor shall submit a detailed programme of the work as proposed to be executed giving completion dates of excavation, time required for filling levelling and grading and compaction. The programme should also show how the excavation and filling quantities will be balanced minimizing the temporary stacking of spoils. It is to be noted that the engineer even after initial approval of the programme may instruct the contractor to enhance or to retard the progress of work during the actual execution in order to match with the progress of other structures. The initial programme being submitted by the contractor should have sufficient flexibility to take care of such reasonable variations.

B2: Standard Technical Specification for Roads and Drainage

1.00.00 Scope

The scope include all works required for the construction of road including construction of embankment, sub-base course, base course, tack coat, bituminous macadam, wearing course, liquid seal coat, shoulder and all incidental items of work specified or not shown but reasonably implied or necessary for the completion of the work etc.

The scope also include all works required for the construction of drainage including construction of road side drains, RCC culverts, pipe culverts, drainage pipes, manholes and all other incidental items necessary for the completion of the work.

1.01.00 Works To Be Provided By the Contractor

The works to be provided by the contractor unless specified otherwise shall include but not be limited to the following.

a) Construction of roads including providing all materials, labour, supervision, services, equipments, tools and plants, transportation etc all required for the completion of the work.

b) Submission of detailed scheme of all operations required for executing the work (e.g. material handling, placement, services, approaches etc) to the engineer for approval.

c) Carrying out tests whenever required by the engineer to assess the quality of work and submission of the test results to the engineer after completion of the same etc.

1.02.00 Work To Be Provided By Others

No work under this specification will be provided for by any agency other than the contractor unless specifically mentioned elsewhere in the contract.

1.03.00 Conformity with Designs

The contractor shall carryout the work as per the construction specification and as directed by the engineer.

1.04.00 Materials to Be Used

All materials required for the work shall be the best commercial variety and as approved by the engineer.

2.00.00 Codes and Standards

All works under this specification shall conform to the latest revision and/or replacement of the following or any other IRC/IS Codes and Standard Practices unless specified otherwise.

- a) Specification for road and bridge works of Ministry of Shipping & Transport (Road Wing) Published by the IRC
- b) IRC: 19 - Standard specification and code of practice for Water bound Macadam
- c) IRC: SP 11 - Hand Book of Quality Control for Construction of Roads and Runways
- d) IS: 456 - Indian Standard Code of Practice for Plain and Reinforced Concrete.
- e) IS: 2212 - Code of Practice for Brick work

- f) IS: 783 - Code of Practice for Laying of Concrete Pipes
- g) IS: 1201 - Methods of testing tar and bituminous materials to 1220
- h) IS: 73 - Specification for paving bitumen
- i) IS: 215 - Specification for Road tar
- j) IS: 216 - Coal tar pitch
- k) IS: 217 - Specification for cut-back bitumen
- l) IS: 454 - Specification for cut-back bitumen from waxy crude
- m) IS: 1834 - Specification for hot applied sealing compound for joint in concrete
- n) IS: 1838 - Specification for performed fillers for expansion joints in concrete, non extruding and resilient type
 - Part I Bitumen impregnated fibre
 - Part II CNSL Aldehyde resin and coconut pith
- o) IS: 334 - Glossary of terms relating to bitumen and tar
- p) IS: 1077 - Common burnt clay building bricks
- q) IS: 3117 - Specification for bitumen emulsion roads (anionic type)
- r) IS: 1200 - Method of measurement of building and civil engineering work (Part-17) - Road work including airfield pavements
- s) Other specifications mentioned elsewhere in this specification.

In case any particular aspect of work is not covered specifically by the specification/Indian Standard Code of practices, any other standard practice as may be specified by the engineer shall be followed.

2.01.00 **Quality Control**

The Contractor shall establish and maintain quality control for all materials, procedures, workmanship and equipments used. All works shall conform to the lines, grades, cross sections and dimensions shown on the specification and as directed by the engineer. Permitted tolerances for road works are described hereinafter.

a) Horizontal Alignment

Horizontal alignment shall be reckoned with respect to the centre line of the carriageway. The edges of the carriageway as constructed shall be correct within a tolerance of $\pm 25\text{mm}$ there from. The corresponding tolerance for edges of the roadway and lower layers of the pavement shall be $\pm 40\text{mm}$.

b) Longitudinal Profile

The finished levels of the sub-grade and different pavement courses as constructed shall not vary from those calculated with reference to the longitudinal and cross-profile of the road as directed by the engineer and shall not exceed the tolerances as mentioned below.

| | | |
|----------------|--------------------|--------------------|
| Sub-grade | $\pm 25\text{ mm}$ | |
| Sub-base | | $\pm 20\text{ mm}$ |
| Base course | | $\pm 15\text{ mm}$ |
| Wearing course | | $\pm 10\text{ mm}$ |

Tolerance in wearing course shall not be permitted in conjunction with the positive tolerance on base course if the thickness of the wearing course is thereby reduced by more than 6 mm.

c) Surface Regularity of Sub-grade and Pavement Courses

The surface regularity of the completed sub-base, base course and wearing surfaces in the longitudinal and transverse directions shall be within the tolerances indicated in Table - I. The longitudinal profile shall be checked with a 3m long straight edge at the middle of each traffic lane along a line parallel to the centre of the road. The transverse profile shall be checked with a set of three camber boards at intervals of 10m.

TABLE -I
PERMITTED TOLERANCE OF SURFACE REGULARITY FOR PAVEMENT COURSES

| Sl. No. | Type of Construction | Longitudinal profile with 3m straight edge | | Cross Profile |
|---------|----------------------|--|---|--|
| | | Maximum permissible Undulation (mm) | Maximum number of undulations permitted in any 300m length with undulation exceeding (mm) | Maximum permissible variation from specified profile |
| | | | | |

| | | | | | | | |
|----|---|----|----|----|----|-------|-------------------------------|
| | | | 18 | 12 | 10 | 6 | under camber template (mm) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1. | Earthen sub-grade | 25 | 30 | - | - | - | 15 |
| 2. | Granular sub-base | 15 | - | 30 | - | - | 12 |
| 3. | Water Bound Macadam with oversize metal (40-90 mm size) | 15 | - | 30 | - | - | 12 |
| 4. | Water Bound Macadam with normal size metal (20-50 mm and 40-63 mm size), Bituminous Penetration Macadam | 12 | - | - | 30 | - | 8 |
| 5. | Surface dressing** (two coat) over WBM (20-50 mm or 40- 63 mm size metal), Bituminous penetration macadam | 12 | - | - | 20 | - | 8 |
| 6. | Open graded premix carpet, mix seal Surfacing | 10 | - | - | - | 30 | 6 |
| 7. | Bituminous macadam | 10 | - | - | - | 20*** | 6 |
| 8. | Semi-dense carpet | 10 | - | - | - | 20*** | 6 |
| 9. | Asphaltic Concrete | 8 | - | - | - | 10*** | 4 |

Notes:

1. ** For surface dressing in all other cases, the standards of surface evenness will be the same as those for the surface receiving the surface dressing.
2. *** These are for machine laid surfaces. If laid manually due to unavoidable reasons, tolerance upto 50 percent above these values in this column may be permitted at the discretion of the Engineer. However this relaxation does not apply to the values of maximum undulation for longitudinal and cross profiles mentioned in columns 3 and 8 on the table.
3. Surface evenness requirements in respect of both the longitudinal and cross profiles should be simultaneously satisfied.

3.00.00 Execution

3.01.00 Setting Out

Within 15 days of the award of contract, the contractor shall prepare and submit to the Engineer detailed schemes of embankment filling and excavation works as proposed to be executed by him showing the dimensions as per construction specification adding his proposals of drainage and dewatering of pits, watering and compacting the embankment fill etc. On receiving the approval from the Engineer with modifications and corrections if any, the contractor shall set out the work from the control points furnished by the Engineer and fix permanent points and markers for ease of future checking. These permanent points and markers will be checked by the Engineer and certified by him after which the contractor shall proceed with the work. It should be noted that this checking by the Engineer prior to the start of the work will in no way absolve the contractor of his responsibility of carrying out the work to true lines and levels. If any errors are noticed in the Contractor's work at any stage, the contractor at his own risk and cost shall rectify the same. Profiles of the embankment made with Bamboo, earth or other convenient materials and strings shall be set up at suitable intervals for the guidance of the workmen.

3.02.00 Clearing and Grubbing

Before commencement of earthwork, the surface area of ground to be occupied shall be cleared of all fences, trees, logs, stumps, bushes, vegetation, rubbish, slush etc. Cutting of trees shall include trees having girth of any size and removing roots upto a depth of 600mm below ground level or 300mm below formation level whichever is deeper. After the removal of roots of trees, the pot holes formed shall be filled with good earth in 250mm layers (loose thickness) and compacted unless otherwise directed by the Engineer. The trees shall be cut into suitable pieces as instructed by the Engineer. Before earthwork is started, all the spoils and unserviceable materials and rubbish shall be burnt or removed from the site to the approved disposal areas as may be specified. Useful materials, saleable timbers, firewood etc shall be the property of the Owner and shall be stacked properly at the work site in a manner as directed by the Engineer.

3.03.00 Filling in Embankment

3.03.01 General

The material used for constructing the embankment shall be earth, moorum, gravel or a mixture of the above or any other material approved by the Engineer. The material shall be free from lumps and clods, boulders and rock pieces, roots and vegetation, harmful salts and chemicals, organic materials, loose silts, fine sands and expansive clays in order to provide a stable embankment. The filling and compaction operation should be such that the

best available materials are saved for the top portion and will result in an acceptable and uniform gradation of material and provide impermeability and stability to the embankment when compacted. The size of the coarse material in the mixture of earth shall ordinarily not exceed 75mm. However the Engineer may at his discretion permit the use of material coarser than the specified if he is satisfied that the same will not present any difficulty as regard to the placement and compaction of the fill material are concerned. Ordinarily, only the materials satisfying the density requirements as given below in Table-II shall be employed for embankment construction.

Table - II
Density Requirements of Embankment Materials

| Sl. No. | Type of Work | Maximum laboratory dry density when tested as per IS: 2720 (Part - VII) |
|---------|--|---|
| 1. | Embankment up to 3m height | Not less than 1.44 gm/cc |
| 2. | Embankment exceeding 3m height and embankment of any height subject to long period of inundation | Not less than 1.52 gm/cc |
| 3. | Top 0.5m of the embankment below sub-base and shoulders (where earth shoulders are specified) | Not less than 1.65 gm/cc |

Expansive clays exhibiting marked swell and shrinkage properties shall not be used for embankment construction.

The material for embankment construction shall be obtained from approved sources with preference given to the materials available from nearby road excavation or any other excavation under the same contract.

3.03.02 Setting Out

After the site clearance, the work shall be set out true to lines, curves, slopes, grades and sections as shown as directed by the Engineer. The contractor shall provide all labour, survey instruments and materials such as strings, pegs, nails, bamboo, stones, lime, mortar, concrete etc required in connection with the setting out of the works and establishment of the bench marks. The limits of the embankment shall be marked by fixing batter pegs on both sides at regular intervals as guides before commencing the earthwork. To ensure the safety, the pegs should normally be fixed about 500mm away from the actual limits of the fill and to be painted in a distinct colour. The centreline of the embankment shall be pegged at regular intervals of 25/30m and at all

skews/curves. The actual profile of the embankment shall be made at every third centre line peg with bamboo posts and strings. Preferably prototype profiles developed with wooden planks need to be fixed at every 200m and at the intersection points at curves. The profile shall be about 3m long.

3.03.03 Stripping and Storing top soil

The construction of the earthen embankment by filling shall conform to the dimensions, slopes and other details as directed by the Engineer. Before commencement of the embankment construction, the surface area of ground to be occupied after clearing and grubbing shall be stripped off to a minimum depth of 150mm or more as directed by the Engineer in order to remove all perishable materials and any soil which may become unstable on saturation or may interfere with the development or proper bonding between the foundation and embankment. It is not necessary to remove all the soil containing fine hair like roots but only the rather heavy mats are to be removed. In localities where most of the available embankment fill materials are not conducive to plant growth or when so directed by the Engineer, the top soil suitable for plant growth existing over the embankment foundation areas shall be stripped to specified depths not exceeding 150mm and stored for covering the embankment slopes where revegetation is desired.

3.03.04 Compacting Original Ground

In all cases, the original ground after stripping shall be compacted by rolling with a minimum six passes of 8-10 tonne roller and as directed by the Engineer.

Where the height of the proposed embankment is less than 0.5m and the original ground does not already have a relative compaction of at least 95 percent of Standard Proctor density (maximum dry density), the same shall be loosened up to a depth of 0.5m and filled in layers not exceeding 250mm in loose thickness and each layer shall be watered and compacted to 100% maximum dry density of the fill material determined in accordance with IS: 2720, Part-VII. However before relaying and compacting the loosened material, the surface below this level shall be suitably compacted as directed by the Engineer with a minimum six passes of 8 - 10 tonne roller.

Where so directed by the Engineer, any unsuitable material occurring in the embankment foundation shall be removed and replaced with approved materials suitably compacted. Embankment work shall not proceed until the foundation soil of the embankment is inspected by the Engineer and approved.

3.03.05 Filling

The embankment material shall be spread uniformly over the entire width of the embankment in layers not exceeding 250mm in loose thickness. Successive layers of embankment shall not be placed until the layer under

construction has been thoroughly compacted to the requirements set down hereunder. Moisture content of the fill material shall be checked at the source of supply and if found less than that specified for compaction, the same shall be made good either at the source or after spreading the soil in loose thickness for compaction. In the latter case water shall be sprinkled directly from a hose line or from a truck mounted water tank and flooding shall not be permitted under any circumstances. After adding required amount of water, the soil shall be processed by means of harrows, rotary mixers or by any other approved method until the layer is uniformly wet.

If the material delivered to the road bed is too wet, it shall be dried by aeration and exposure to the sun till the moisture content is acceptable for compaction. Should circumstances arise where owing to wet weather, the moisture content cannot be reduced to the required amount by the above procedure, the work on compaction shall be suspended.

Moisture content of each layer shall be checked in accordance with IS:2720, Part-II and unless otherwise specified shall be so maintained making due allowance for evaporation losses that during compaction, the moisture content shall be in the range of 1 percent above to 2 percent below the optimum moisture content as determined in accordance with IS:2720, Part-VII.

Clods or hard lumps of earth shall be broken to have a maximum size of 150mm when being placed in the lower layers of the embankment and a maximum size of 60mm when being placed in the top 0.5m portion of the embankment below sub-base.

Hauling equipment shall be dispersed uniformly over the entire surface of the previously constructed layer to minimise rutting or uneven compaction.

Where the embankment is to be constructed across a low swampy ground that will not support the weight of trucks or other hauling equipments, the lower part of the fill shall be constructed by dumping successive loads in a uniformly distributed layer to a thickness not greater than that necessary to support the hauling equipment while placing subsequent layers.

3.03.06 Compaction

Compaction equipment approved by the Engineer shall only be employed for construction. If directed by the Engineer, the Contractor shall demonstrate the efficiency of the plant he intends to use by carrying out compaction trials. Each layer shall be thoroughly compacted to the density as specified in Table-III. Subsequent layers shall be placed only after the finished layer has been tested and accepted by the Engineer.

Table - III

Compaction Requirements for Embankment

| Sl. No. | Type of work/material | Field dry density as a percentage of maximum laboratory dry density as per IS : 2720, Part-VII |
|---------|---|--|
| 1. | Top 0.5m portion of embankment below sub-base and shoulders | Not less than 100 |
| 2. | Other portions of embankment | Not less than 95 |

When density measurements reveal any soft area in the embankment, further compaction shall be carried out as directed by the Engineer. If in spite of that the specified compaction is not achieved, the material in the soft area shall be removed and replaced with approved material and compacted to the density requirements and satisfaction of the Engineer.

3.03.07 Drainage

The surface of the embankment at all times during construction shall be maintained at such a cross fall as will shed water and prevent ponding.

3.03.08 Finishing Operations

Finishing operations shall include the work of shaping and dressing the shoulders, road bed and side slopes to conform the alignment, levels, cross sections and dimensions as shown as directed by the Engineer. Both the upper and lower ends of the side slopes shall be rounded off to improve the appearance and merge the embankment with the adjacent terrain.

3.04.00 Turfing With Sods

3.04.01 General

This work shall consist of furnishing and laying live sod of perennial turf forming grass on embankment slopes, shoulders or other locations as directed by the Engineer. Unless otherwise specified the work shall be taken up following the construction of embankment provided the season is favourable for establishment of the sod.

3.04.02 Materials

The sod shall consist of dense, well rooted growth of permanent and desirable grasses indigenous to the locality where it is to be used and shall be practically

free from weeds and other undesirable matters. At the time the sod is cut, the grass shall have a length of approximately 50mm and the sod shall be free from any debris.

Thickness of the sod shall be as uniform as possible with about 50 to 80mm of soil covering the grass roots depending on the nature of the sod so that practically all the dense root system of the grass are retained in the sod strip. The sods shall be cut in rectangular strips of uniform width not less than 250mm x 300mm in size but not so large so that it is convenient to handle and transport without damage. During wet weather the sod shall be allowed to dry sufficiently to prevent rearing during handling and during dry weather it shall be watered before lifting to ensure its vitality and to prevent dropping of soil during handling.

3.04.03 Placing the Sods

The area to be sodded shall be previously constructed to the required slope and cross section. Soil in the area shall be loosened, freed from all stones larger than 50mm size, sticks, stumps and any other undesirable foreign matters etc and brought to a reasonably granular texture to a depth not less than 25mm for receiving the sod.

Top soil shall be spread over the slopes wherever required,. Prior to placing the top soil, the slopes shall be roughened and wetted in order to have a satisfactory bond. The depth of top soil (to be spread) shall be 75mm.

Following soil preparation and top soiling (if required), fertilizer and ground limestone when specified shall be spread uniformly. After spreading, the materials shall be incorporated in the soil by discing or other means. The prepared sod bed shall be moistened if not already sufficiently moist and the sod shall be placed thereon within 24 hours after the same has been cut. Each sod strip shall be laid in close contact with each other and shall be lightly tamped with suitable wooden or metal tampers so as to eliminate air pockets and to press it into the underlying soil. At points where water may flow over the sod, the upper edges of the sod strips shall be turned into the soil below the adjacent area and a layer of earth shall be placed over it followed by thorough compaction.

3.04.04 Staking the Sods

Where the side slope is 2 to 1 or steeper and the distance along the slope is more than 2m, the sods shall be staked with pegs or nails spaced approximately 500 to 1000mm along the longitudinal axis of the sod strips. Stakes shall be driven approximately plumb through the sods and to be almost flushed with them.

3.04.05 Top Dressing

After the sods have been laid in position, the surface shall be cleaned of any loose sod, excess soil and other foreign materials. Thereafter a thin layer of top soil shall be scattered over the top dressed surface and the area shall be thoroughly moistened by sprinkling water.

3.04.06 Watering and Maintenance

The turfing so laid shall be well watered and protected until final acceptance. Watering shall be done in such a way that no erosion or damage to the sodded areas/embankment occur. The Contractor shall erect necessary warning signs and barriers, repair or replace the sods which are failing to show uniform growth of grass or damaged by his operation and shall maintain the sod at his own cost until final acceptance.

3.05.00 Shoulder Construction

3.05.01 Description

This work shall consist of constructing shoulder on either side of the pavement in accordance with the requirements of this specification and in conformity with the lines, grades and cross sections as directed by the Engineer.

3.05.02 Materials

Shoulder shall be made of selected earth or granular material as specified conforming to relevant IRC standards.

3.05.03 Construction Operations

Except in the case of bituminous pavements, the shoulders shall be constructed in advance to the laying of pavement courses. The compacted thickness of each layer of shoulder shall correspond to the compacted layer of pavement course to be laid adjacent to it. After compaction, the inside edges of shoulders shall be trimmed vertical and the area enclosed between the shoulders shall be cleaned of all spilled materials before proceeding with the construction of the pavement layer.

In the case of bituminous pavements, shoulder shall be constructed only after the pavement courses have been laid and compacted.

Regardless of the method of laying, all shoulder construction material shall be placed directly on the shoulder. Any spilled material dragged on to the pavement surface shall be immediately removed without any damage to the pavement and the area so affected shall be thoroughly cleaned. During all

stages of shoulder construction, the required crossfall shall be maintained to drain off surface water.

3.06.00 Kerb

3.06.01 Material

Kerb, if required for the construction of footpath, shall consist of pre-cast concrete blocks with concrete grade of M-20. The blocks shall be of 100mm thick and of suitable length. The depth of blocks unless otherwise mentioned elsewhere shall be 375mm considering 225mm height of footpath above the road level.

3.06.02 Laying

The kerb shall be laid by cutting trenches of 150mm deep. The width of the trench shall be minimum and just sufficient to insert the kerbs. The inside faces of the kerbs shall be in plumb and the gap between the block shall not be more than 10mm. The gap shall be filled with cement mortar as specified.

The kerbs shall be thoroughly packed with a mixture of stone chips (50%) and moorum (50%) at the outside face. The laying and packing shall be done in a proper workmanlike manner acceptable to the Engineer.

3.07.00 Sub-base (Granular Sub-base)

3.07.01 Description

This work shall consist of laying and compacting well graded material on the prepared sub-grade in accordance with the specification. The material shall be laid in one or more layers and shall conform to the lines, grades and cross sections as directed by the Engineer.

3.07.02 Materials

The materials to be used for the work shall be natural sand, moorum, gravel, crushed stone, crushed slag, crushed concrete, brick metal, laterite, kankar etc or combinations thereof depending upon the grading required. The mixed materials shall be free from organic and other deleterious constituents and conform to one of the three grading given in Table - IV below.

Table - IV
Grading for Granular Sub-base Material

| Sieve designation | Percent by weight passing the sieve | | |
|---|-------------------------------------|-----------|-----------|
| | Grading 1 | Grading 2 | Grading 3 |
| 80 mm | 100 | 100 | 100 |
| 63 mm | 90 - 100 | 90 - 100 | 90 - 100 |
| 4.75 mm | 35 - 70 | 40 - 90 | 50 - 100 |
| 75 micron | 0 - 20 | 0 - 25 | 0 - 30 |
| Minimum CBR value for the fraction of material passing 20 mm sieve. | 30 % | 25% | 20% |

Note: The materials passing 425micron sieve for all the three gradings when tested according to IS: 2720, Part V shall have liquid limit and plasticity index not more than 25 percent and 6 percent respectively.

3.07.03 Physical Requirements

The fraction of materials passing 20mm sieve shall give a CBR value as specified in Table – IV when tested in accordance with IS : 2720, Part XVI after preparing the samples at maximum dry density and optimum moisture content corresponding to IS : 2720, Part VII and soaking the same in water for 4 days.

3.07.04 Spreading and Compacting

Immediately prior to laying of sub-base, the sub-grade already finished shall be prepared by removing all vegetations and other extraneous matters, lightly sprinkled with water if necessary and rolled with one pass of 8 - 10 tonne smooth wheeled roller.

The sub-base material shall be spread on the sub-grade with the help of a drag spreader, motor grader or other approved means. The thickness of loose layers shall be so regulated that the maximum thickness of each layer after compaction shall not exceed 150mm.

Moisture content of the loose material shall be checked in accordance with IS : 2720, Part II and shall be suitably adjusted by sprinkling additional water from a hose line, truck mounted water tank or other approved means so that at the time of compaction it shall be from 1 percent above to 2 percent below the optimum moisture content. While adding water, due allowance shall be made for evaporation losses. After water has been added, the material shall be processed by mechanical or other approved means if so directed by the Engineer until the layer is uniformly wet.

Immediately thereafter, rolling shall be done with 8 to 10 tonne smooth wheeled rollers or with any other approved plant. Rolling shall commence from the edges and progress towards the centre longitudinally except on super elevated portions where it shall progress from the lower to the upper edge parallel to the centre line of the pavement. Each pass of the roller shall uniformly overlap not less than one third of the track made in the preceding pass. During rolling, the grade and camber shall be checked and any high spots or depressions which become apparent shall be corrected by removing or adding fresh material.

Rolling shall be continued till the density achieved is at least 100% of the maximum dry density of the material determined as per IS : 2720, Part VII. The surface of any layer of material on completion of compaction shall be well closed, free from movement under compaction plant and from compaction planes, ridges, cracks or loose materials. All loose, segregated or otherwise defective areas shall be made good to the full thickness of layer and recompacted.

3.08.00 Water Bound Macadam Sub-base/Base Course

3.08.01 Description

Water bound macadam shall consist of clean crushed aggregates mechanically interlocked by rolling and bonded together with screenings, binding material wherever necessary and water, laid on the prepared subgrade or sub-base as the case may be and finished in accordance with the specification and in conformity with the lines, grades and crosssections as directed by the engineer incharge.

3.08.02 Materials

a) Coarse Aggregates - General Requirements

Coarse aggregates shall be either crushed or broken stone. The aggregates shall conform to the physical requirements set forth in Table - V.

Table – V

Physical Requirements of Coarse Aggregates for Water Bound Macadam

| Sl.No. | Type of Construction | Test | Test method | Requirements |
|--------|----------------------|---|--|--|
| 1. | Sub-base | Los Angeles Abrasion Value * or Aggregate Impact Value | IS : 2386 (Part IV) IS : 2386 (Part IV) or IS : 5640** | 50 percent maximum 40 percent maximum |
| 2. | Base | a) Loss Angeles Abrasion value* or Aggregate Impact Value b) Flakiness Index *** | IS : 2386 (Part IV) IS : 2386 (Part IV) or IS : 5640 ** IS : 2386 (Part I) | 50 percent maximum 40 percent maximum 15 percent maximum |

* Aggregates shall satisfy requirements of either of the two tests.

** Aggregates like brick metal, kankar and laterite which get softened in presence of water shall be tested for impact value under conditions in accordance with IS : 5640.

*** The requirements of Flakiness Index shall be enforced only in case of crushed or broken stone and crushed slag.

b) Crushed or Broken Stone

Crushed or broken stone shall be hard, durable and free from excess flat, elongated, soft and disintegrated particles, dirt and other objectionable matters.

c) Grading Requirements of Coarse Aggregates

The coarse aggregates shall conform to one of the gradings given in Table – VI. However the use of Grading-1 shall be restricted to sub-base courses only.

Table - VI
Grading Requirements of Coarse Aggregates

| Grading | Size range | Sieve designation | Percent by weight passing the sieve |
|---------|----------------|--|---|
| 1. | 90mm to 40 mm | 100 mm 80 mm 63 mm 40 mm 20 mm | 100 65 - 85 25 - 60 0 - 15 0 - 5 |
| 2. | 63 mm to 40 mm | 80 mm 63 mm 50 mm 40 mm 20 mm | 100 90 - 100 35 - 70 0 - 15 0 - 5 |
| 3. | 50 mm to 20 mm | 63 mm 50 mm 40 mm 20 mm 10 mm | 100 95 - 100 35 - 70 0 - 10 0 - 5 |

d) Screenings

Screenings to fill the voids in the coarse aggregate shall generally consist of the same material as the coarse aggregates. However where permitted, predominantly non-plastic material such as moorum or gravel (other than rounded river borne material) may be used for this purpose provided liquid limit and plasticity index of such material is below 20 and 6 respectively and fraction passing 75 micron sieve does not exceed 10 percent.

As far as possible, screenings shall conform to the grading set forth in Table-VII. Screenings of Type-A in Table-VII shall be used with coarse aggregates of Grading-1 in Table-VI. Screenings of Type-A or B shall be used with coarse aggregates of Grading-2. Screenings of Type-B shall be used with coarse aggregates of Grading-3.

Table - VII
Grading For Screenings

| Grading classification | Size of screenings | Sieve designation | Percent by weight passing the sieve |
|------------------------|--------------------|---|-------------------------------------|
| A | 12.5 mm | 12.5 mm 10.0 mm 4.75 mm 150 micron | 100 90 - 100 10 - 30 0 - 8 |
| B | 10 mm | 10 mm 4.75 mm 150 micron | 100 85 - 100 10 - 30 |

e) Binding Material

Binding material to be used for water bound macadam construction shall comprise of a suitable material approved by the Engineer having plasticity index value less than 6 as determined in accordance with IS : 2720,Part V. Application of binding material may not be necessary when the screenings used are of crushable type such as moorum or gravel.

3.08.03 Construction Operations

a) The sub-grade/sub-base to receive the water bound macadam coarse shall be prepared to the specified grade and camber and made free of any dust and other extraneous materials. Any ruts or soft yielding places shall be corrected in an approved manner and rolled until firm. Where water bound macadam is to be laid over an existing black topped surface, 50mm x 50mm furrows shall be cut at an angle of 45 degrees to the centre line of the road at 1m intervals in the latter before laying the coarse aggregates.

b) Inverted Choke

If water bound macadam is to be laid directly over the sub-grade without any other intervening pavement course, a 25mm course of screenings (Grading-B) shall be spread on the prepared sub-grade before application of coarse aggregates is taken up.

c) Spreading Coarse Aggregates

The coarse aggregates shall be spread uniformly over the prepared surface in such quantities that the thickness of each compacted layer is limited to 100mm for Grading-1 and 75 - 100mm for Grading-2 and 3. The spreading shall be done from stockpiles along the side of the roadway or directly from the vehicles. In no case shall the aggregate be dumped in heaps directly on the surface prepared to receive the aggregates nor shall hauling over be permitted. The surface of the aggregates spread shall be carefully checked with templates and all high or low spots remedied by removing or adding aggregates as may be required. No segregation of large or fine particles shall be allowed and the coarse aggregates as spread shall be of uniform gradation with no pockets of fine material.

The coarse aggregates shall not normally be spread more than 3 days in advance of the subsequent construction operation.

d) Rolling

Immediately following the spreading of the coarse aggregates, rolling shall be started with three wheeled power rollers of 8 to 10 tonne capacity or with tandem or vibratory rollers of approved type. The weight of the roller shall depend upon the type of the aggregate and be indicated by the Engineer.

Except on super elevated portions where the rolling shall proceed from inner edge to the outer, rolling shall begin from the edges gradually progressing towards the centre. First the edge/edges shall be compacted with roller running forward and backward. The roller shall then move inwards parallel to the centre line of the road. Each pass of the roller shall uniformly overlap not less than one half the width of the track made in the preceding pass.

Rolling shall continue until the aggregates are thoroughly keyed and the creeping of aggregates ahead of the roller is no longer visible. During rolling slight sprinkling of water may be done if necessary. Rolling shall not be done when the sub-grade is soft or yielding or when it causes a wavelike motion in the sub-grade or sub-base course.

The rolled surface shall be checked transversely and longitudinally with templates and any irregularities found shall be corrected by loosening the surface, adding or removing necessary amount of aggregates and rerolled until the entire surface conform to the desired camber and grade. In no case shall the use of screenings be permitted to make up the depressions.

e) Application of Screenings

After the coarse aggregate has been rolled, screenings to completely fill the interstices shall be applied gradually over the surface. These shall not be damp or wet at the time of application. Dry rolling shall be done while the screenings are being spread so that vibrations of the roller cause them to

settle into the voids of the coarse aggregates. The screenings shall not be dumped in piles but be spread uniformly in successive thin layers either by the spreading motion of hand shovels or by mechanical spreader or directly from trucks. Trucks operating for spreading the screenings shall be so driven as not to disturb the coarse aggregates.

The screenings shall be applied at a slow and uniform rate (in three or more applications) so as to ensure filling of all voids. This shall be accompanied by dry rolling and brooming with mechanical brooms or hand brooms or with both. In no case shall the screenings be applied so fast and thick as to form cakes or ridges on the surface in such a manner as would prevent filling of voids or prevent the direct bearing of the roller on the coarse aggregate. These operations shall continue until no more screenings can be forced into the voids of the coarse aggregates.

The spreading, rolling and brooming of screenings shall be carried out in only such lengths of road which could be completed within one day's operation.

f) Sprinkling and Grouting

After the screenings have been applied, the surface shall be copiously sprinkled with water, swept and rolled. Hand brooms shall be used to seep the wet screenings into the voids and to distribute them evenly. The sprinkling, sweeping and rolling operations shall be continued with additional screenings applied as necessary until the coarse aggregates are thoroughly keyed, well bonded and firmly set to its full depth and a grout has been formed of screenings. Care shall be taken to see that the base or sub-grade does not get damaged due to the addition of excess quantity of water during construction.

g) Application of Binding Material

After the application of screenings, the binding material where it is required to be used shall be applied successively in two or more thin layers at a slow and uniform rate. After each application, the surface shall be copiously sprinkled with water and the resulting slurry shall be swept in with hand brooms or mechanical brooms to fill the voids properly and rolled during which water shall be applied to the wheels of the rollers if necessary to wash down the binding material sticking to them. These operations shall continue until the resulting slurry after filling the voids form a wave ahead of the wheels of the moving roller.

h) Setting and Drying

After the final compaction of water bound macadam course, the road shall be allowed to dry overnight. Next morning hungry spots shall be filled with screenings or binding material as directed, lightly sprinkled with water if necessary and

rolled. No traffic shall be allowed on the road until the macadam is set. The Engineer shall have the discretion to stop hauling traffic from using the complete water bound macadam course if in his opinion it would cause excessive damage to the surface.

3.09.00 Tack Coat

3.09.01 Description

The work shall consist of application of a single coat of low viscosity liquid bituminous material to an existing road surface preparatory to another bituminous construction.

3.09.02 Materials

The binder used for tack coat shall be bitumen of a suitable grade as approved by the Engineer and conforming to IS-73, IS-217 or IS-454 as applicable or any other approved cutback.

3.09.03 Construction Operations

a) Preparation of Base

The surface on which the tack coat is to be applied shall be thoroughly swept and scraped clean of dust and any other extraneous materials before the application of the binder.

b) Application of Binder

Binder shall be heated to the temperature appropriate to the grade of bitumen used and approved by the Engineer and sprayed on the base at the rate specified below. The rate of spread in terms of straight run bitumen shall be 5 kg per 10 square metre area for an untreated water bound macadam surface. The binder shall be supplied uniformly with the aid of sprayers. The tack coat shall be applied just ahead of the oncoming bituminous construction.

3.10.00 Bituminous Macadam Binder Course

3.10.01 Description

This work shall consist of construction in a single course of 50mm/75mm thickness of compacted crushed aggregates premixed with a bituminous binder laid immediately after mixing on a base prepared previously in accordance with

the specification and in conformity with the lines, grades and cross sections as directed by the engineer incharge.

3.10.02 Materials

a) Binder

The Binder shall be straight run bitumen of a suitable grade as directed by the Engineer complying with IS: 73.

b) Aggregates

The aggregates shall consist of crushed stone, crushed gravel (shingle) or other stones. They shall be clean, strong, durable, fairly cubical in shape and free from any disintegrated pieces, organic and other deleterious matter and adherent coats. The aggregates shall preferably be hydrophobic and of low porosity.

The aggregates shall satisfy the physical requirements set forth in Table - VIII.

Table - VIII
Physical Requirements of Aggregates For Bituminous Macadam

| Sl. No. | Test | Test method | Requirements |
|---------|------------------------------|----------------------|--------------------|
| 1. | Los Angeles Abrasion Value * | IS : 2386 (Part IV) | 35 percent maximum |
| 2. | Aggregate Impact Value * | IS : 2386 (Part IV) | 30 percent maximum |
| 3. | Flakiness Index | IS : 2386 (Part I) | 35 percent maximum |
| 4. | Stripping Value | IS : 6241 (Part IV) | 25 percent maximum |
| 5. | Water Absorption | IS : 2386 (Part III) | 2 percent maximum |

*Aggregates may satisfy requirements of either of the two tests.

The aggregates for bituminous macadam for different thickness shall conform to Grading- A or B as given in Table-IX or X as the case may be.

Table-IX

Aggregates Grading For 75mm Compacted Thickness of Bituminous Macadam

| Sieve Designation | <i>Percent by weight passing the sieve</i> | |
|-------------------|--|-----------|
| | Grading A | Grading B |
| 63 mm | 100 | |
| 50 mm | 90 - 100 | 35 |
| 40 mm | - 65 | 100 |
| 25 mm | 20 - 40 | 70 - 100 |
| 20 mm | - | 50 |
| 12.5 mm | 5 - 20 | - 80 |
| 4.75 mm | - | - |
| 2.36 mm | - | 10 - 30 |
| 75 micron | 0 - 5 | 5 - 20 |
| | | 0 - 4 |

Table-X

Aggregates Grading For 50mm Compacted Thickness Of Bituminous Macadam

| Sieve Designation | Percent by weight passing the sieve | |
|-------------------|-------------------------------------|-----------|
| | Grading A | Grading B |
| 50 mm | 100 | |
| 40 mm | 90 - 100 | |
| 25 mm | 50 - 80 | 100 |
| 20 mm | - | 70 -100 |
| 12.5 mm | 10 - 30 | - |
| 10 mm | - | 35 - 60 |
| 4.75 mm | - | 15 - 35 |
| 2.36 mm | - 0 - | 5 - 20 |
| 75 micron | 5 | 0 - 4 |

c) Proportioning of Materials

The binder content for premixing shall be 3.5 and 4.0 percent by weight of the total mix for aggregate Grading-A and B respectively unless directed otherwise by the Engineer. The quantity of aggregates to be used shall be sufficient to yield the specified thickness after compaction.

d) Variation in Proportioning of Materials

The Contractor shall have the responsibility for ensuring proper proportion of materials and producing a uniform mix. A variation in binder content up to ± 0.3 percent by weight of total mix shall however be permissible for individual specimens taken for quality control tests.

3.10.03 Construction Operations

a) Weather and Seasonal Limitations

Bituminous macadam shall not be laid during rainy weather or when the base course is damp or wet.

b) Preparation of Base

The base on which the bituminous macadam is to be laid shall be prepared, shaped and conditioned to the specified lines, grade and cross sections as directed by the Engineer. The surface shall be thoroughly swept and scraped clean and free of any dust and foreign matter.

c) Tack Coat

A tack coat shall be applied over the base.

d) Preparation and Transport of Mix

Hot mix plant of adequate capacity shall be used for preparing the mix. The temperature of binder at the time of mixing shall be in the range 150 Deg. - 165 Deg. C and to that of aggregates shall be in the range 125 Deg. - 150 Deg. C provided the temperature difference between the binder and the aggregate at no time exceeds 25 Deg. C. Mixing shall be thorough to ensure that a homogenous mixture is obtained in which all particles of the aggregates are coated uniformly. The mixture shall be transported from the mixing plant to the point of use in a suitable vehicle. The vehicle employed for transport shall be clean and be covered over in transit if so directed by the Engineer.

e) Spreading

After mixing, the mix shall be spread immediately by means of a self propelled mechanical paver with suitable screeds capable of spreading, tamping and finishing the mix to the specified lines, grade and cross sections. However in restricted locations and in narrow widths where the available plants cannot operate in the opinion of the Engineer may permit manual laying of the mix. The temperature of mix at the time of laying shall be in the range 110 Deg. - 135 Deg. C.

In multilayer construction, the longitudinal joint in one layer shall offset into the layer below by about 150mm. However, the joint in the topmost layer shall be at the centre line of the pavement.

Longitudinal joints and edges shall be constructed true to the delineating lines parallel to the centre line of the road. All joints shall be cut vertical to the full thickness of the previously laid mix and the surface painted with hot bitumen before placing fresh material.

f) Rolling

After spreading of mix, the rolling shall be done with 8 to 10 tonne power roller or with any other approved plant. Rolling should start as soon as the materials are spread. Rolling shall be done with care to avoid any undulation in the pavement surface.

Rolling on the longitudinal joint shall be done immediately after the paving operation. After this, the rolling shall commence at the edges and progress towards the centre longitudinally except on super elevated portions where it shall progress from the lower to the upper edge parallel to the centre line of the pavement.

The initial or breakdown rolling shall be done as soon as it is possible to roll the mixture without cracking the surface and no mix picks up on the roller wheels. The second or intermediate rolling shall follow the break down rolling as early as possible and be done while the paving mix is still at a temperature that will result in maximum density. The final rolling shall be done while the material is still workable enough for removal of roller marks.

When the roller has passed over the whole area once, any high spots or depressions which become apparent shall be corrected by removing or adding fresh materials. The rolling shall then be continued till the entire surface has been rolled to compaction and there is no crushing of aggregates and till the entire roller marks are eliminated. Each pass of the roller shall uniformly overlap not less than one third of the track made in the preceding pass. The roller wheels shall be kept damp if necessary to avoid the bituminous material from sticking on the wheels and being picked up. In no case shall fuel/lubricating oil be used for this purpose.

Rolling operation shall be completed in every respect before the temperature of the mix fall below 80 Deg. C.

Rollers shall not stand on the newly laid material as it may lead to undue deformation. The edges along and transverse of the bituminous macadam laid and compacted earlier shall be cut to their full depth so as to expose fresh surface which shall be painted with a thin surface coat of appropriate binder before the new mix is placed against it.

The bituminous macadam shall be provided with a final surfacing without any delay. If there is to be any delay the course shall be covered by seal coat before allowing any traffic over it.

3.11.00 Open Graded Premix Carpet

3.11.01 Description

This work shall consist of laying and compacting open graded carpet of specified thickness in a single course of suitable small sized aggregates premixed with bituminous binder on a previously prepared base to form wearing course in accordance with the specification.

3.11.02 Materials

a) Binder

The binder shall be bitumen of suitable grade as approved by the Engineer and satisfying the requirements of IS: 73, 217, 454 or any other approved cutback as applicable.

b) Aggregates

The aggregates shall consist of angular fragments of clean, hard, tough and durable rock of uniform quality throughout. They shall be obtained by crushing rock, gravel or river shingle and be free of elongated and flaky pieces, soft and disintegrated materials, vegetable and any other deleterious matter etc. They shall preferably be hydrophobic type. The aggregates shall satisfy the quality requirements set forth in Table-VIII except that the flakiness Index shall be limited to a maximum of 30.

c) Proportioning of Materials

The materials shall be proportioned as per the quantities given in TableXI for 20mm thick open graded premix carpet.

Table - XI
Quantity of Materials Required For 10 Sq. M of Road Surface for 20mm Thick Open Graded Premix Carpet

| <u>Aggregates for Carpet</u> | | |
|------------------------------|---|-----------|
| i) | Stone Chippings - 12mm size ; passing 20 mm sieve and retained on 10 mm sieve | 0.18 Cu.m |
| ii) | Stone Chippings - 10 mm size; passing 12.5 mm sieve and retained on 6.3 mm sieve Cu.m | 0.09 |
| Total | | 0.27 Cu.m |

| <u>Binder for premixing (quantities in terms of straight run bitumen)</u> | | |
|---|---|---------|
| i) | For 0. 18 Cu.m of 12 mm size stone Chippings at 52 Kg per Cu.m | 9.5 Kg |
| ii) | For 0.09 Cu. M of 10mm size stone Chippings at 56 Kg per Cu.m | 5.1 Kg |
| Total | | 14.6 Kg |

3.11.03 Construction Operation

a) Weather and Seasonal Limitations

Open graded premix carpet shall not be laid during rainy weather or when the base course is damp or wet or when the atmospheric temperature in shade is 16 Deg. C or below.

b) Preparation of Base

The underlying base on which the bituminous carpet is to be laid shall be prepared, shaped and conditioned to the specified lines, grade and cross section in accordance with the specification and as directed by the Engineer. The surface shall be well cleaned by removing caked earth and other foreign matters with wire brushes, sweeping with brooms and finally dusting with sacks as necessary.

c) Tack Coat

A tack coat complying with clause 3.09.00 shall be applied over the base preparatory to laying of the carpet. However application of tack coat shall not be necessary when the laying of carpet follows soon after laying the bituminous course.

d) Preparation of Premix

Mixers of approved type shall be employed for mixing the aggregates with the bituminous binder. The binder shall be heated to the temperature appropriate to the grade of bitumen approved by the Engineer in boilers of suitable design avoiding local overheating and ensuring a continuous supply. The aggregates shall be dry and suitably heated to a temperature as directed by the Engineer before these are placed in the mixer. After about 15 seconds of dry mixing, the heated binder shall be distributed over the aggregates at the rate specified. The mixing of binder with chipping shall be continued until the chippings are thoroughly coated with the binder. The mix shall be immediately transported from the mixer to the point of use in suitable vehicles or wheel barrows. The vehicles employed for transport shall be clean and be covered over in transit if so directed.

e) Spreading and Rolling

The premixed material shall be spread on the road surface with rakes to the required thickness and camber or distributed evenly with the help of a drag spreader without any undue loss of time. The camber shall be checked by

means of camber boards and inequalities evened out. As soon as sufficient length of bituminous material are laid, rolling shall be commenced with 6 to 8 tonne power rollers preferably with smooth wheel tandem type or with any other approved plant. Rolling shall begin at the edges and progress toward the centre longitudinally except on the super elevated portions where it shall progress from the lower to upper edge parallel to the centre line of the pavement.

When the roller has passed over the whole area once, any high spots or depressions which become apparent shall be corrected by removing or adding premixed materials. Rolling shall then be continued until the entire surface has been rolled to compaction and all the roller marks have been eliminated. In each pass of the roller, preceding track shall be overlapped uniformly by at least 1/3 width. The roller wheels shall be kept damp to prevent the premix from adhering to the wheels and being picked up. In no case shall fuel/lubricating oil be used for this purpose. Rollers shall not stand on newly laid material as it may lead to undue deformations.

The edges along and transverse of the carpet laid and compacted earlier shall be cut to their full depth so as to expose fresh surface which shall be painted with a thin surface coat of approved binder before the new mix is placed against it.

f) Seal Coat

A seal coat conforming to clause 3.12.00 shall be applied to the surface immediately after laying the carpet. No traffic shall be allowed on the road till the seal coat has been placed.

3.12.00 Seal Coat

3.12.01 Description

This work shall consist of application of a seal coat as specified for sealing the voids in the bituminous surface laid to the specified levels, grade and camber.

Type-A: Liquid seal coat comprising of an application of a layer of bituminous binder followed by a cover of stone chippings.

Type-B: Premixed seal coat comprising of a thin application of fine aggregate premixed with bituminous binder.

3.12.02 Materials

a) Binder

The binder shall be bitumen of suitable grade as directed by the Engineer and conforming to the requirements of IS : 73, 217 or 454 as applicable or any other approved cutback.

The quantity of binder to be adopted in terms of straight run bitumen shall be 9.8 Kg and 6.8 Kg per 10 square metre area for Type-A and Type-B seal coat respectively.

b) Stone Chippings for Type A Seal Coat

The stone chippings shall consist of angular fragments of clean, hard, tough and durable rock of uniform quality throughout. They shall be free of elongated or flaky pieces, soft or disintegrated stone, vegetable or other deleterious matters etc. Stone chippings shall be of 6mm size defined as 100 percent passing through 10mm sieve and retained on 2.36mm sieve. The quantity used for spreading shall be 0.09 cum per 10 sqm area. The chippings shall satisfy the quality requirements spelled out in Table- VIII except that the upper limit for flakiness Index shall be 30.

c) Fine Aggregate for Type B Seal Coat

The fine aggregate shall be sand or fine grit and shall consist of clean, hard, durable, uncoated dry particles and shall be free from dust, soft or flaky material, organic matter or other deleterious substances. The aggregate shall pass 1.7 mm sieve and be retained on 180 micron sieve. The quantity used for premixing shall be 0.06 cubic metre per 10 square metre area.

3.12.03 Construction Operations

a) Preparation of Base

The seal coat shall be applied immediately after laying the bituminous course which is required to be sealed. Before application of seal coat, the surface shall be cleaned free of any dust or other extraneous matters.

b) Construction of Type-A Seal Coat

The binder shall be heated in boilers of suitable design to the temperature appropriate to the grade of bitumen approved by the Engineer and sprayed on the dry surface in a uniform manner preferably with the help of mechanical sprayers. Excessive deposits of binder caused by stopping or starting of the sprayer or through leakage or due to any other reason shall be suitably corrected before the stone chippings are spread.

Immediately after the application of binder, stone chippings in a dry and clean state shall be spread uniformly on the surface preferably by means of a mechanical grittier or otherwise manually so as to cover the surface completely. If necessary the surface shall be broomed to ensure uniform spread of chippings. Immediately

after the application of the cover material, the entire surface shall be rolled with a 8 - 10 tonne smooth wheeled roller. Rolling shall commence from the edges and progress towards the centre except in super elevated portions where it shall proceed from the inner edge to the outer. Each pass of the roller shall uniformly overlap not less than one third of the track made in the preceding pass. While rolling is in progress additional chippings shall be spread by hand in whatever quantities required making up the irregularities. Rolling shall continue until all aggregate particles are firmly bedded in the binder and present an uniform closed surface.

c) Construction of Type-B Seal Coat

Mixers of approved type shall be employed for mixing the aggregates with the bituminous binder. The binder shall be heated in boilers of suitable design to the temperature appropriate to the grade of bitumen approved by the Engineer. Also the aggregates shall be dry and suitably heated to a temperature as directed by the Engineer before the same are placed in the mixer. Mixing of binder with aggregates to the specified proportions shall be continued till the latter is thoroughly coated with the former. The mix shall be immediately transported from the mixing plant to the point of use and spread uniformly on the bituminous surface to be sealed. As soon as sufficient length has been covered with the premixed material, the surface shall be rolled with 6 - 8 tonne smooth wheeled power rollers. Rolling shall be continued till the premixed material completely seals the voids in the bituminous course and a smooth uniform surface is obtained.

3.12.04 Opening to Traffic

In case of Type-B Seal coat, traffic may be allowed soon after the final rolling when the premixed materials are cooled down to the surrounding temperature. However in case of Type- A seal coat, the traffic shall not be permitted until the following day.

3.13.00 Repair of Existing Water Bound Macadam Surfaces

Pot holes or patches and ruts in the water bound macadam base or surface course which is to be surface treated shall be repaired by removing all loose materials by cutting in rectangular patches and replacing with suitable materials. The repair shall be done as under.

Pot holes, patches and ruts shall be drained of any water and cut to regular shape with vertical sides and then be filled either with i) coarse aggregates and screenings conforming to the specification for water bound macadam and compacted with rollers or other approved rammer etc or with ii) premixed material conforming to the specification for open graded premix carpet and compacted with rollers or other approved means after

painting the sides and bottom of the holes with a thin application of bitumen or a combination of both as directed by the Engineer.

3.14.00 Dense Bituminous Macadam

Scope

Dense Bituminous Macadam (DBM) is used mainly for in base/binder and profile corrective courses.

DBM is also used as road base material. This work shall consist of construction in a single or multiple layers of DBM on a previously prepared base or sub-base. The thickness of a single layer shall be 50 mm to 100 mm.

Material

Bitumen :The bitumen shall be paving bitumen of penetration Grade of specified consistency and content conforming to IS 73 or as otherwise specified in the item.

Coarse Aggregates :The coarse aggregates shall consist of crushed rock, crushed gravel or other hard material retained on the 2.36 mm IS Sieve. They shall be clean, hard, durable, or cubical shape, free from dust and soft or friable matter, organic or other deleterious substance. Before approval of the source, the aggregates shall be tested for stripping. The aggregates shall satisfy the physical requirements for dense bituminous macadam.

Where crushed gravel is proposed for use as aggregate, not less than 90% by weight of the crushed material retained on the 4.75 mm IS Sieve shall have at least two fractured faces.

Fine Aggregates :Fine aggregates shall consist of crushed or naturally occurring mineral material, or a combination of the two, passing the 2.36 mm IS Sieve and retained on the 75 micron sieve. They shall be clean, hard, durable, dry and free from dust and soft or friable matter, organic or other deleterious matter.

The fine aggregate shall have a sand equivalent value of not less than 50 when tested in accordance with the requirements of IS 2720 (Part 37).

The plasticity index of the fraction passing the 0.425 mm IS Sieve shall not exceed 4, when tested in accordance with IS 2720 (Part 5).

TABLE 1.1

Physical Requirements for Coarse Aggregate for Dense Bituminous Macadam

| <i>Property</i> | <i>Test</i> | <i>Specification</i> |
|---------------------|--|-------------------------------|
| Cleanliness (dust) | Grain size analysis ¹ | Max 5% passing 0.075mm sieve. |
| Particle shape | Flakiness and Elongation Index (Combined) ² | Max 30% |
| Strength* | Los Angeles Abrasion Value ³ | Max 35% |
| | Aggregate Impact Value ⁴ | Max 27% |
| Durability | Soundness ⁵ | |
| | Sodium Sulphate | Max 12% |
| | Magnesium Sulphate | Max 18% |
| Water Absorption | Water Absorption ⁶ | Max 2% |
| Stripping | Coating and stripping of Bitumen aggregate Mixtures ⁷ | Minimum retained coating 95% |
| Water sensitivity** | Retained Tensile Strength ⁸ | Min 80% |

Note:

1. IS: 2386 Part 1

2. IS: 2386 Part 1

(The elongation test to be done only on non-aggregate in the sample)

3. IS 2368 Part 4*

4. IS 2368 Part 4*

5. IS 2386 Part 5

6. IS 2386 Part 3

7. IS 6241

8. AASHTO T283**

- Aggregate may satisfy requirement of either of these two tests.
- The water sensitivity test is only required if the minimum retained coating in the stripping test is less than 95%.

Filler : Filler shall consist of finely divided mineral matter such as rock dust, hydrated lime or cement approved by the Engineer-in-Charge.

The filler shall be graded within the limits indicated in Table 1.2

TABLE 1.2

Grading Requirements for Mineral Filler

| <i>Is Sieve (mm)</i> | <i>Cumulative per cent passing by weight of total aggregate</i> |
|----------------------|---|
| 0.6 | 100 |
| 0.3 | 95-100 |
| 0.075 | 85-100 |

The filler shall be free from organic impurities and have a plasticity index not greater than 4. The Plasticity Index requirements shall not apply if filler is cement or lime.

Aggregate Grading and Binder Content: When tested in accordance with IS 2386 Part 1 (wet sieving method), the combined grading of the coarse and fine aggregates and added filler for the particular mixture shall fall within the limits shown in Table 1.3 for dense bituminous macadam.

TABLE 1.3
Composition of Dense Graded Bituminous Macadam Pavement Layers

| | |
|--|--|
| Grading | 1 |
| Nominal aggregate size | 25 mm |
| Layer Thickness | 50-75 mm |
| IS Sieve ¹ (mm) | Cummulative % by weight of total aggregate passing |
| 37.5 | 100 |
| 26.5 | 90-100 |
| 19 | 71-95 |
| 13.2 | 56-80 |
| 4.75 | 38-54 |
| 2.36 | 28-42 |
| 0.3 | 7-21 |
| 0.075 | 2-8 |
| Bitumen content % by mass of total mix ² (Marshal method) | 5% or as specified in the item |
| Bitumen grade | 60/70 grade or as specified in the item |

Note: The combined aggregate grading shall not vary from the low limit on one sieve to the high limit on the adjacent sieve.

Mixture Design

Requirement for the Mixture: The mixture shall meet the requirements as given in table 1.4.

TABLE 1.4
Requirements for Dense Bituminous Macadam

| | |
|---|---|
| Minimum stability (kN at 60°C) | 9.0 |
| Minimum flow (mm) | 2 |
| Maximum flow (mm) | 4 |
| Compaction level (number of blow) | 75 blows on each of the two faces of the specimen |
| Per cent air voids | 3-6 |
| Per cent voids in mineral aggregate (VMA) | See Table 16.39 |
| Per cent voids filled with bitumen (VFB) | 65-75 |

The requirements for minimum percent voids in mineral aggregate (VMA) are given in Table 1.5.

TABLE 1.5

Minimum Percent Voids in Mineral Aggregate (Vma)

| Nominal Maximum Particle size ¹ (mm) | Minimum VMA, Percent Related to Design Air voids, Percent ² | | |
|---|--|------|------|
| | 3.0 | 4.0 | 5.0 |
| 9.5 | 14.0 | 15.0 | 16.0 |
| 12.5 | 13.0 | 14.0 | 15.0 |
| 19.0 | 12.0 | 13.0 | 14.0 |
| 25.0 | 11.0 | 12.0 | 13.0 |
| 37.5 | 10.0 | 11.0 | 12.0 |

Note:

1. The nominal maximum particle size is one size larger than the first sieve to retain more than 10percent.
2. Interpolate minimum voids in the mineral aggregate (VMA) for design air voids values between those listed.

Binder Content :The binder content shall be optimized by using Marshall method for determining the optimum binder content shall be adopted as described in the Asphalt Institute ManualMS-2, replacing the aggregates retained on the 26.5 mm sieve by the aggregates passing the 26.5 mm sieve and retained on the 22.4 mm sieve.

Job Mix Formula :The contractor shall inform the Engineer-in-Charge in writing, at least 20days before the start of the work, of the job mix formula proposed for use in the works, and shall give the details of Source and location of all materials, their sizes, grading and test results. Approval of the job mix formula shall be based on independent testing by the Engineer-in-Charge for which samples of all ingredients of the mix shall be furnished by the Contractor as required by the Engineer-inCharge.

Job mix formula shall be revised if there is a change in source of material and be got approved by Engineer-in-Charge.

Plant Trials – Permissible Variation in Job Mix Formula: Once the laboratory job mix formula is approved, the Contractor shall carry out plant trials at the mixer to establish that the plant can be set up to produce a uniform mix conforming to the approved job mix formula. The permissible variations of the individual percentages of the various ingredients in the actual mix from the job mix formula to be used shall be within the limits as specified in Table 1.6.

TABLE 1.6
Permissible Variations from the Job Mix Formula

| Description | Permissible Variation | |
|--|-----------------------|----------------|
| | Base/Binder Course | Wearing Course |
| Aggregate passing 19 mm sieve or larger | ± 8% | ± 7% |
| Aggregate passing 13.2 mm, 9.5 mm | ± 7% | ± 6% |
| Aggregate passing 4.75 mm | ± 6% | ± 5% |
| Aggregate passing 2.36 mm, 1.18 mm, 0.6 mm | ± 5% | ± 4% |
| Aggregate passing 0.3 mm, 0.15 mm | ± 4% | ± 3% |
| Aggregate passing 0.075 mm | ± 2% | ± 1.5% |
| Binder content | ± 0.3% | ± 0.3% |
| Mixing temperature | ± 10°C | ± 10°C |

Laying Trials :Once the plant trials have been successfully completed and approved, the Contractor shall carry out laying trials, to demonstrate that the proposed mix can be successfully laid and compacted.

Construction Operations

Prime Coat :Where the material on which the dense bituminous macadam is to be laid is other than a bitumen bound layer, a prime coat shall be applied, as specified, in accordance with the provisions, or as directed by the Engineer-inCharge.

Tack Coat :Where the material on which the dense bituminous macadam is to be placed is bitumen bound surface, a tack coat shall be applied as specified, in accordance with the provisions, or as directed by the Engineer-in-Charge.

Mixing and Transportation of the Mixture :The provisions are as specified in item and Morth specification.

Spreading :Morth specification shall apply. The paver finisher shall be fitted with electronic sensor device.

Rolling :The compaction process shall be carried out as per MORTH Specification.

Opening to Traffic :The newly laid surface shall not be open to traffic for at least 24 hours after laying the completion of compaction, without the express approval of the Engineer-in-Charge in writing.

Surface Finish and Quality Control of Work :The surface finish of the completed construction shall conform to the requirements. The materials and workmanship shall comply with the provisions set out in Table.

Arrangement for Traffic : During the period of construction, arrangements for traffic shall be made in accordance with the provisions of specification and as per direction of Engineer-in-Charge.

Measurement

Dense Bituminous Materials shall be measured as finished work in cubic meters, correct to two places of decimal.

Rate

The rate include the cost of all materials, labour and equipment, in all the operation described above.

3.15.00 Dense Bituminous Concrete

Scope

Dense Bituminous Concrete (DBC), is used in wearing and profile corrective courses, in a single or multiple layers on a previously prepared bound surface. A single layer shall be 25 mm to 100 mm in thickness.

Materials

Bitumen: CRBM or PMB as specified.

Coarse Aggregates

Fine Aggregates

Filler

Aggregate Grading and Binder Content : When tested in accordance with IS 2386 part 1 (wet grading method), the combined grading of the coarse and fine aggregates and added filler shall fall within the limits for grading 1 or 2 specified in the contract.

Mixture Design

Requirements for the Mixture : Apart from conformity with the grading and quality requirements for individual ingredients, the mixture shall meet the requirements except loss of stability of immersion in water at 60°C. The requirements for minimum percent voids in mineral aggregate (VMA). **Binder Content :** The Marshall method for determining the optimum binder content shall be adopted as described in the Asphalt Institute Manual MS-2, replacing the aggregates retained on the 26.5 mm Sieve and retained on the 22.4 mm Sieve, where approved by the Engineer-in-Charge.

Job Mix Formula: The contractor shall inform the Engineer-in-Charge in writing, at least 20 days before the start of the work, of the job mix formula proposed for use in the works, and shall give the details of Source and location of all materials, their sizes, grading and test results.

Approval of the job mix formula shall be based on independent testing by the Engineer-in-Charge for which samples of all ingredients of the mix shall be furnished by the Contractor as required by the Engineer-in-Charge.

Job mix formula shall be revised if there is a change in source of material and be got approved by Engineer-in-Charge.

Plant Trials – Permissible Variation in Job Mix Formula: Once the laboratory job mix formula is approved, the Contractor shall carry out plant trials at the mixer to establish that the plant can be set up to produce a uniform mix conforming to the approved job mix formula. The permissible variations of the individual percentages of the various ingredients in the actual mix from the job mix formula to be used shall be within the limits as specified in Table

1.6. **TABLE 1.6**

Permissible Variations from the Job Mix Formula

| Description | Permissible Variation | |
|--|-----------------------|----------------|
| | Base/Binder Course | Wearing Course |
| Aggregate passing 19 mm sieve or larger | ± 8% | ± 7% |
| Aggregate passing 13.2 mm, 9.5 mm | ± 7% | ± 6% |
| Aggregate passing 4.75 mm | ± 6% | ± 5% |
| Aggregate passing 2.36 mm, 1.18 mm, 0.6 mm | ± 5% | ± 4% |
| Aggregate passing 0.3 mm, 0.15 mm | ± 4% | ± 3% |
| Aggregate passing 0.075 mm | ± 2% | ± 1.5% |
| Binder content | ± 0.3% | ± 0.3% |
| Mixing temperature | ± 10°C | ± 10°C |

Laying Trials : Once the plant trials have been successfully completed and approved, the Contractor shall carry out laying trials, to demonstrate that the proposed mix can be successfully laid and compacted.

Construction Operations

TABLE NO. 1.7

Composition of Bituminous Concrete Pavement Layers

| Grading | 1 | 2 |
|----------------------------|---|----------|
| Nominal aggregate size | 19 mm | 13 mm |
| Layer Thickness | 50-65 mm | 30-45 mm |
| IS Sieve ¹ (mm) | Cumulative % by weight of total aggregate passing | |
| 45 | - | - |
| 37.5 | - | - |
| 26.5 | 100 | 100 |
| 19 | 79-100 | 100 |
| 13.2 | 59-72 | 79-100 |
| 9.5 | 52-79 | 70-88 |
| 4.75 | 35-55 | 53-71 |
| 2.36 | 28-44 | 42-58 |
| 1.18 | 20-34 | 34-48 |
| 0.6 | 15-27 | 26-38 |
| 0.3 | 10-20 | 18-28 |

| | | |
|---|---|---|
| 0.15 | 5-13 | 12-20 |
| 0.075 | 2-8 | 4-0 |
| Bitumen content % by mass of total mix ² | 5.5% or specified in item or directed otherwise | 5.5% or specified in item or directed otherwise |
| Bitumen grade (pen) | Specified in item or directed otherwise | Specified in item or directed otherwise |

Note:

1. The combined aggregate shall not vary from the low limit on one sieve to the high limit on the adjacent sieve.
2. Determined by the Marshal method.

Tack Coat :Where specified in the Contract, or otherwise required by the Engineer, a tack coat shall be applied.

Mixing and Transportation of the Mixture :The provisions as specified in item and MORTH specification shall apply.

Spreading :Morth specification shall apply. The paver finisher shall be fitted with electronic sensor device.

Rolling : The compaction process shall be carried out as per MORTH Specification. **Opening to**

Traffic :The newly laid surface shall not be open to traffic for at least 24 hour after laying and completion of compaction, without the express approval of the Engineer-in-Charge in writing.

Surface Finish and Quality Control: The surface finish of the completed construction shall conform to the requirements of "Clause 9.2 and provisions set out in Section 900 of MORTH specification".

Arrangements for Traffic During the period of construction, arrangements for traffic shall be made in accordance with the provisions of specification and as per direction of Engineer-in-Charge.

Measurement for Payment: DBC measured as finished work in cubic meters, correct to two places of decimal.

Rate: The rate include the cost of material, labour and equipment's, involved in all the operations described above.

3.16.00 TACK COAT WITH BITUMEN—EMULSION

The rate of application of binder which shall be as specified and which shall depend on the surface on which the premix carpet is to be laid.

1. on w.b.m @ 0.4kg/sqm.
2. on bituminous surface @ 0.25 kg/sqm.

Materials

Bitumen : This shall be straight-run bitumen of penetration value 80/100 conforming to IS 73 specifications.

Preparation of Surface Cleaning

Prior to the application of bitumen, all vegetation, loose sealing compound, caked mud, animal dung, dust, dirt and foreign material shall be removed from the entire surface of the pavement and from existing dummy, construction and expansion joints (wherever existing) by means of mechanical sweepers and blowers, otherwise with steel wire brushes, small picks, brooms or other implements as approved by the Engineer-in-Charge. The material so removed shall be disposed off as directed by the Engineer-in-Charge.

Weather and Seasonal Limitations

The tack coat shall not be applied nor any bitumen work done during rainy weather or when the surface is damp or wet or when the atmospheric temperature in the shade is not more than 16° C.

Application of Tack Coat

Heating : Bitumen shall be heated in a boiler to a temperature of 165 deg. C to 175 deg. C and maintained at that temperature. Temperature shall be checked at regular intervals with the help of a thermometer.

Application of Bitumen: Hot bitumen shall be applied evenly to the clean, dry surface by means of a pressure sprayer at specified rate. Even and uniform distribution of bitumen shall have been ensured. Bitumen shall be applied longitudinally along the length of the pavement and never across it. Excessive deposits of bitumen caused by stopping or starting of the sprayer or through leakage or any other reason shall be suitably rectified.

Measurements

Length and breadth shall be measured correct to a cm, along the surface of pavement. Area shall be worked out in sqm correct to two places of decimal.

Rate

Rate shall include the cost of all materials and labour involved in all the operations described above.

3.17.00 Road Side Drains

3.17.01 Drains

The road side drains shall be made in sizes and slopes as shown on the approved drawings. The sides and bottom shall be neatly dressed after excavation. Proper connections shall be made to the culverts outside the plant area as per the drawings and instructions of the Engineer. The excavated spoils other than that required for backfilling shall be transported and filled in low areas within the plant area or in embankments as instructed by the Engineer. The lining for drains shall be as per the drawings. Lining of drains may be of bricks or cement concrete blocks of specified grade as shown on the approved drawing or as directed by the Engineer. If shown on approved drawing, drains shall be of R.C.C. construction with necessary slopes.

3.18.00 Culverts

Excavation in trenches for foundation of culverts and wing walls shall be done with side slopes as per the drawings and instructions of the Engineer after clearing the site etc. As described in the "Specification for Earthwork in Excavation and Backfilling", backfilling in layers with watering and compaction shall be done after the construction of foundations. The construction of culverts shall be done true to the lines and levels as shown on the drawings. The specification for Masonry and/or Plain and Reinforced Cement concrete shall be followed as applicable.

3.19.00 Pipe Culverts and Drainage Pipes

3.19.01 Materials

The drainage pipes shall be made of R.C.C and shall be either class NP- 2 or NP-3 as shown on the approved drawings. Pipe culverts shall be made of reinforced concrete pipe and shall be of class NP4 or RDSO class for railways as shown in the drawing. All pipes shall meet the requirements of IS: 458 and shall be procured from approved manufacturers with collars as per manufacturer's specification. The tenderer shall specifically mention the particular manufacturer's product he proposes to use.

Cement shall be ordinary Portland cement as per IS: 269. Coarse Aggregates shall be as per IS: 383. Maximum size shall not exceed one third the thickness of the pipe or 20 mm whichever is smaller. Fine aggregates for concrete shall be as per IS: 383.

3.19.02 Laying of Pipes

Laying of concrete pipes shall correspond to IS: 783 and as per the specification given below.

- a) The foundation bed for pipe shall be excavated true to lines and grades shown on the drawings and as directed by the Engineer. When trenching is involved, its width on either side of the pipe shall not be less than 150mm and not more than one third the diameter of pipe unless otherwise instructed/permitted by the Engineer. The sides of the trench shall be as nearly vertical as possible. Side slope, shoring, bailing out water etc as required shall be done by the Contractor. Side slips if there be any shall be removed by the Contractor. After laying of the pipes are completed, backfilling of the trenches shall be done as per "Specification for Earthwork in Excavation and Backfilling" to the

satisfaction of the Engineer. The surplus spoils shall be transported and filled in low areas within the plant area as instructed by the Engineer. When bedrock or boulder stratum is encountered during excavation, the excavation shall be taken down to at least 200mm below the bottom of the pipe with prior permission of the Engineer and all rock/boulders in the area shall be removed and space filled with approved earth free from stone or fragmented materials, shaped to the requirements and thoroughly compacted to provide adequate support for the pipe. Filling of trench shall be carried out simultaneously on both sides of the pipe in such a manner that unequal pressures do not occur and shall be done as per the "Specification for Earthwork in Excavation and Backfilling". When two or more pipes are to be laid adjacent to each other, they shall be separated by a distance equal to at least half the diameter of the pipe subject to a minimum of 450 mm. Laying of pipes shall start from the outlet and proceed towards inlet. All pipes and fittings shall be gradually lowered into the trench or placed on the supports by approved means taking due care to avoid any damage. Under no circumstances the pipes shall be dropped into the trench or on supports from heights.

- b) b) Pipe bedding shall be first class projection bedding for positive projecting pipes as per IS: 783 having a projection ratio not greater than 0.70. The pipe shall be carefully laid on bedding made up of fine granular materials in an earth foundation; the bedding shall be carefully shaped to fit the lower part of the pipe exterior for at least ten percent of its overall height and in which the fill material is thoroughly compacted in layers not exceeding 150mm in depth around the pipe for the remainder of the pipe laid in trench.
- c) When indicated on the drawings or directed by the Engineer, the pipe shall be bedded on a cradle constructed of concrete having a mix not leaner than M-15. The shape and dimension of the cradle shall be as indicated on the drawing or as directed by the Engineer. The pipe shall be laid on the concrete bedding before the concrete is set. c) The drop walls shall be made with first class brickwork in 1:4 cement mortar.
- d) The pipe culverts shall be made with proper care with respect to the invert of the pipe, gradient if any etc as specified on the drawings and as instructed by the Engineer.
- e) Where R.C.C pipes are encased in concrete at road crossings or at other places the pipes need be suitably supported avoiding reinforcements of concrete blocks, joints properly done before concreting
- f) is taken up. Concreting of total height of block may be done in a single operation or may be done up to some height for pipes to be properly laid in position and the balance height of the block shall be concreted subsequently.
- g) The R.C.C. pipes shall be joined with cement mortar. Cement mortar shall consist of 1 part of cement and 2 part of clean sand with only enough water for workability. Procedure of jointing shall be as per IS : 783.

3.19.03 Relation with Water Supply Pipeline

Unless specifically cleared by the Engineer, under no circumstances shall the drainage pipes be allowed to come close to water supply pipelines.

3.20.00 Manholes and Inspection Chambers

The maximum distance between the manholes shall be 30m unless specifically permitted otherwise. In addition, at every change of alignment, gradient or diameter there shall be a manhole or inspection chamber. The distance between the manhole or inspection chamber and gully chamber shall not exceed 6 meters unless permitted otherwise. Manhole shall be constructed so as to be water tight under test. The channel or drain at the bottom of chamber shall be plastered with 1:2 cement sand mortar and finished smooth to the grade. The channels and drains shall be shaped and laid to provide a smooth flow. Connection to the existing pipelines shall be through a manhole. Manholes shall be provided with standard covers usually of C.I. or as directed by the Engineer. The cover shall be closely fitted so as to prevent gases from coming out.

4.00.00 Testing and Acceptance Criteria

All testing as mentioned in the specification and as mentioned in Clause No. 900 of the "Specification for Roads and Bridge Works, 1983" published by IRC on behalf of Ministry of Shipping and Transport (Roads Wing) shall be carried out by the Contractor as per the direction of the Engineer.

5.00.00 MEASUREMENT

Method of measurement shall be as per the latest version of IS: 1200, Part-17 and as directed by the Engineer.