

**BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI – 620 014
CIVIL ENGINEERING DEPARTMENT**

Dt. 23 07 2024

To

The Tenderer

Dear Sirs,

Name of work: Laying /Re-Laying/Repairs and Maintenance of roads in and around BHEL Township, Trichy

Tender Schedule No. **CT: TS: 07/24-25**

Please find enclosed / attached non-transferable tender document containing

Techno-commercial bid consisting of Preamble, Specifications, General and Special Conditions of Contract, Norms for Qualification and Qualification Pro form, Bill of Quantities to offer your most competitive rates for all the items.

TENDERS must be submitted electronically by logging to e-procurement portal
<https://eprocurebhel.co.in>

Physical submission of tender shall not be accepted.

EMD:

EMD may be submitted in the form of

- (i) Electronic Fund Transfer credited in BHEL account (before Tender opening) or
- (ii) Demand Draft (DD) in favour of BHEL Trichy or
- (iii) Fixed Deposit Receipt (FDR) issued by schedule banks/ Public Financial Institutions as defined in the Companies Act

(FDR should be in the name of the Contractor, A/c BHEL and affix one rupee (Rs.1/-) revenue stamp & sign on back side of FDR, In case, the same discharged FDR submitting second time as EMD "A Lien-Confirmation letter" issued from Bank must be submitted along with FDR). For vendors who are unsuccessful in the tender, who submitted FDR, it will be returned in person only.

In case of offline payments, the hardcopies of EMD documents i.e. DD/FDR is to be submitted to Manager / Civil / Planning, Civil Township office, BHEL, Trichy-14 before tender opening and the soft-copies to be uploaded at the time of online bid submission, otherwise the tender will be summarily rejected.

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Bidder should arrange for the EMD as specified in the tender. The original EMD should be posted/couriered/given in person in a sealed cover **super scribing “Name of Work” “Tender Schedule Number & date”** to the Tender Inviting Authority, within the bid submission date and time for the tender.

NOTE: - EMD waiver not applicable for MSE / NSIC / SSI vendors for this tender (Hence, vendors should furnish EMD of specified amount without which their bids will not be considered).

The completed qualification bid, Price Bid, Special Conditions of Contract and Standard conditions of Contract along with required documents and EMD shall be uploaded in e-procurement portal on or before **05-08-2024 @ 10:00 Hrs.** The qualification bid will be opened on **05-08-2024 @14:00 hrs** through e-procurement portal. In case of opening day falls on holiday or happened to be declared as a holiday, the receipt and opening of the tender shall automatically fall on the same timing of the next working day. Date and time of opening of the Price Bid shall be intimated only to the bidders those who have qualified after evaluation of the qualification bid.

Tender Document consists of Part A-Qualification Bid & Part B-Price Bid.

Part A-Qualification Bid consists of

- Section 1 - Notice Inviting E-Tender
- Section 2 – Preamble
- Section 3 – Important points to be taken care of while submitting offer
- Section 4 - Procedures & Guidelines
- Section 5 - Special conditions of contract
- Section 6 - Technical conditions of contract
- Section 7- General conditions of contract for lumpsum, item rates and Percentage contract

Part B-Price Bid consists of Bill of Quantity & schedules.

Thanking you,

Yours faithfully
For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED,

Manager
CIVIL / Planning
Civil Township office
BHEL, Trichy – 620 014.

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Bharat Heavy Electricals Limited ,Trichy -14- Civil Engineering Department**Part –A Qualification Bid****SECTION 1 - NOTICE INVITING E-TENDER**

A) Tender Details		
1.	Tender Schedule No.	CT: TS: 07/24-25
2	Tender Type	Open Tender – Two Part (e-Tender)
3.	Name of Work	Laying /Re-Laying/Repairs and Maintenance of roads in and around BHEL Township,Trichy
4.	Location of Work	BHEL – Trichy Complex
5.	Contract Value	Rs. 249.77 Lakhs Excluding applicable GST & BOCW Cess
6.	Period of Contract	4 months
6a	Maintenance period	6 (Six) months
7.	EMD	Rs. 2,00,000.00 /- a) Offer without EMD will be Rejected. b) EMD will not be waived off for MSME / NSIC / SSI vendors on submission of valid Documents. Hence EMD shall have to be furnished. c) EMD shall be paid preferably in the NEFT form (Ref. Annex-A1 and the SBI- e-collect receipt shall be uploaded along with tender documents) and EMD taken other than NEFT mode (DD/FDR) should be forwarded in original, physically / couriered to Civil / Factory / Planning / 53 Bldg. BHEL, Trichy-14 on or before tender submission deadline. The scanned copy of the same should be uploaded in eProcurement site. d) For more details regarding EMD, please refer Section – 3 The submitted bids which are not satisfying any of the above conditions as well as conditions stated in the section 3 regarding EMD shall be summarily rejected.
8.	Security deposit	10% of the contract value
9	Reverse auction	Reverse auction is applicable to this tender.
10.	Split & award	Split & award is not applicable to this tender.Entire work shall be awarded to L1 Contractor only.
11.	Tender document Details	Qualification Bid: Pages 1 to 188; Price Bid: Pages 189 to 193
12.	Mode of submission of offer	No Physical submission of tender , Tender only to be submitted electronically by logging to e-procurement portal https://eprocurebhel.co.in
13.	Last Date for Receipt of Tender	05-08-2024 / 10:00 Hrs.
14.	Date of Techno Commercial Bid opening	05-08-2024 / 14:00 Hrs.
15.	MSE benefits if applicable	Not Applicable
16.	Contact details of queries related to tender	KV Lakshmi Narayanan, Manager, Civil / Planning, 0431 257 1053; e-mail: kvln@bhel.in
17.	Contact details for queries related to scope of work	Shri. V Subramaniyan,DGM/Civil. 0431 257 1012; e-mail: vsmn@bhel.in

We, the tenderer, have gone through all the pages of tender document and accept the terms and conditions.

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B) Contractor Profile details -

1.	Name of the Enterprise / Company / Firm.	To be filled in e-procurement portal
1.1.	Status of the Enterprise / Company / Firm.	To be filled in e-procurement portal
1.2	Regd. Address of Enterprise / Company / Firm.	To be filled in e-procurement portal
1.3	If offer is addressed from different address, as above, the same may specified,	To be filled in e-procurement portal
2	Details of documentary evidence submitted in support of Status of the Enterprise / Company / Firm.	Details to be filled and documentary evidence to be uploaded in e-procurement portal

Following documents to be uploaded in e-procurement portal based on status of Agency / Company / Vendor

2.1	Are you / your partner involved whether as a proprietor / partner in other companies. In case of bid given by company, any other sister concerns being run. (Details of Name, Address, etc., of such companies shall be furnished.) if applicable	To be filled in e-procurement portal
3.	Landline/Mobile number(s)	To be filled in e-procurement portal
4.	E-mail Address	To be filled in e-procurement portal
5.	Name, Designation and Contact details of person signing the Tender (In case of authorized signatory, the copy of Power of Attorney (POA) should be uploaded as per Annexure-A3.)	To be filled in e-procurement portal
6.	BHEL- Trichy Vendor Code: (If vendor code is not available, kindly Submit the original NEFT/RTGS Format duly filled and signed in page No. 23 of this document along with cancelled cheque leaf	To be filled in e-procurement portal

If any vendors do not have ESI, EPF No. the vendor should produce a declaration in their letter head as per Annexure 2.

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C) NORMS FOR QUALIFICATION FOR THIS TENDER
(CHECK LIST - TO BE FILLED BY CONTRACTOR COMPULSORILY)

Sl. No	Qualifying Criteria	Details	Status
1	EMD – Rs. 2,00,000.00 (Details to be filled and documentary evidence to be uploaded in e-procurement portal)	NEFT/RTGS PAYMENT DETAILS: OR DD/ FDR DETAILS:	<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
2	Technical Competence Experience of having successfully completed similar works during last 7 (Seven) years ending last day of month previous to the one in which tender applications are invited should be either of the following a) Three similar completed works costing not less than the amount equal to Rs 100.0 Lakhs (or) b) Two similar completed works costing not less than the amount equal to Rs 125.0 Lakhs (or) c) One similar completed work costing not less than the amount equal to Rs 200.0 Lakhs (Experience proof from BHEL shall contain work order copies and experience proof from other than BHEL shall contain work order copies along with Form 26AS / TDS certificate / bank statement for payment from the organization for the work executed/Confirmation mail from completion certificate issuing authority) Similar Work means Construction of Roads, Laying/Relaying/Repairs & Maintenance of roads. For arriving at cost of similar work, the value of work executed shall be brought to current costing level by enhancing the actual value of work at simple rate of seven percent per annum, calculated from the date of completion to the last day of month previous to the one in which tender applications are invited	Details to be filled and documentary evidence to be uploaded in e-procurement portal	<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
3	FINANCIAL SOUNDNESS: Average Annual financial turnover for any of the three consecutive years during the last five financial years i.e. 2018-19, 2019-20, 2020-21, 2021-22 & 2022-23 shall be equal to or more than Rs 75.0 Lakhs. Documents to Prove Financial Soundness of the Firm (in any of the following manner given below) for any three consecutive years out of five years i.e. Self-attested copy of Income Tax Submission Acknowledgment (SARAL), Audited Profit & Loss account and Balance Sheet indicating CA membership number for above mentioned Financial Years. OR Auditor's certificate (with CA membership no. / UDIN) for consolidated minimum average annual turnover (as given above) should be enclosed.	Details to be filled and documentary evidence to be uploaded in e-procurement portal	<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded

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Sl. No	Qualifying Criteria	Details	Status
4	Income Tax Registration (PAN) (Copy of PAN to be uploaded)	Details to be filled and documentary evidence to be uploaded in e-procurement portal	<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
5	GST Regn. No. (Declaration to be attached if Vendor is Exempted from paying GST. For such exempted vendor, Vendor cannot claim GST from BHEL, during the execution of the contract (if awarded) even if their status under GST changes to regular tax payer). (Copy of GST to be uploaded).		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
6	Acceptance to Scope of work, Special and General Terms and Conditions of Contract. (Duly signed and sealed copy of tender document to be uploaded)		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
7	“No deviation & Declaration certificate” on bidder’s Letter head as per enclosed Annexure-A2 of tender document (Duly signed and sealed copy to be uploaded.)		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
8	Details of Reverse Auction as per Annexures 1.	Details to be filled up in the Contractors letter head and to be uploaded in e-procurement portal as per the respective Annexures 1 to 5	<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
9	Details of PF & ESI Registration (if registration of EPF / ESI / Both (EPF & ESI) is/are not available, self-declaration as per the Annexure 2 is to be enclosed at the time of submission of the tender)		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
10	Local supplier self-declaration (Annexures 3)		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
11	Declaration for non-cartelization (Annexures 4)		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
12	E invoice Declaration (Annexures 5)		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
13	Integrity Pact		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded

Note :

1. Bidders are requested to submit only the documents required to meet the pre-qualification criteria as per tender. Documents not relevant to tender pre-qualification criteria / tender shall not be enclosed along with the offer
2. Digitally signed / Self-attested copy of all the documents should be uploaded along with Tender. BHEL reserves the right to cross check the authenticity of credentials submitted by the vendor. If at any stage, the document(s) submitted by Contractor is / are found incorrect / False / Fake, then necessary action will be taken by BHEL against Contractor viz. legal, Contractual, BHEL Policy / Procedural Actions in whatsoever manner as deemed fit.

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D) DETAILS OF THE VENDOR TO BE FURNISHED

1	Sole Proprietorship	PAN / GST Registration	Details to be filled and documentary evidence to be uploaded in e-procurement portal	<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
2	Partnership	Registered Partnership Deed / Pan copy of all the partners to be furnished		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
3	Private Limited Company / Public Limited Company / Public Sector / Govt. org	Certificate of Registration / Memorandum of Association & Articles of Association		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
4	E Format for “Acceptance for Electronic fund transfer/ RTGS Transfer”			<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
5	Original cancelled cheque leaf (Applicable for New vendor)			<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
6	Documentary proof for company / firm / proprietorship			<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
7	NEFT bank format (if applicable)			<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
8	Power of Attorney for signing tender (if applicable)			<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded

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ANNEXURE – 1

REVERSE AUCTION CONTACT DETAILS - TO BE FURNISHED IN LETTER HEAD

BHEL will go for Reverse Auction (RA) after opening the price bid/s, submitted by the bidder. More details are given under “SPECIAL TERMS & CONDITIONS OF CONTRACT”.

For this purpose, the following details should be furnished **without fail, along with the offer.**

Name of work: Laying /Re-Laying/Repairs and Maintenance of roads in and around BHEL Township,Trichy

Tender Schedule No. **CT: TS:07/ 24 -25**

Name of the contact person assigned for Reverse auction	
Mobile & Land line Number	
E-mail id	
FAX No. (if available)	

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ANNEXURE – 2

FORMAT FOR EPF & ESI DECLARATION - TO BE FURNISHED IN LETTER HEAD

(To be given in Vendors Letter head if not possessing EPF / ESI / Both (EPF & ESI) at the time of submission of the tender)

To:

Manager / CIVIL / PLANNING
Bharat Heavy Electricals Limited
Unit: Tiruverumbur
TIRUCHIRAPPALLI – 620 014.

Sir,

Sub: Declaration of EPF & ESI Submission – Reg.

At this time of submission of this tender -----(Tender Schedule No) I/We, -----
------(Company Name) am / are not possessing the EPF / ESI / Both (EPF & ESI). I hereby
declare that I will submit the EPF / ESI / Both (EPF&ESI) registration copy before placing of Work
order / Commencement of Work. I / we am / are also aware that payment for work done will
not be processed by BHEL without submission of EPF & ESI data paid to my / our employees
engaged to the corresponding BHEL contract.

Thanking you,

Yours Truly,
For and On behalf of,

Company name & seal

Date:

Place:

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TO BE FURNISHED IN LETTER HEAD**ANNEXURE – 3****Local Supplier Self-Declaration**

Tender Schedule No.	CT-TS-07/24-25
Tender hosted Date	23.07.2024

In line with Government public procurement order Number P-45021/2/2017-B.E-II dated 15.06.2017, and further modified order dt. 28.05.2018 & 04.06.2020. I / We hereby declare that I / We are a “Local Supplier” meeting the requirement of minimum local content (.....%) defined in the above government notification for the goods/services/works against above mentioned enquiry Number.

Details of location at which local value addition will be made is as follows:

Door No.	
Street / Address 1	
Street / Address 2	
District	
State	
Country	
PIN Code	

We also understand that the false declarations will be considered as breach of Integrity and liable for action.

For Company Name:

Seal:

Signature:

Date:

Place:

(Please fill all the yellow color field)

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Declaration for Non-Cartelization

To:

Manager

CIVIL /PLANNING
Civil Township office,
BHEL, Trichy – 14.

Sir,

At this time of submission of this tender ----- (Tender Schedule No) I / We, -----
----- (Company Name) declares that we 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, I / We ----- (Company Name), am / are found having indulged
in above activities, suitable action shall be taken by BHEL as per extant policies / guidelines.

Thanking you,

Yours Truly,

For and On behalf of,

Company name & seal

Date:

Place:

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E- Invoice Declaration

To:

Manager

CIVIL /PLANNING
Civil Township office,
BHEL, Trichy – 14.

Sub: Undertaking regarding Issuance of E-Invoice under GST Act

Dear Sir,

Sub: Undertaking regarding Issuance of E-Invoice under GST Act

Dear Sir,

1. We hereby confirm that our Aggregate Turnover (i.e. *Turnover computed on All India basis with same PAN*) for GSTIN : is less than 5 Crores & we are not mandated to issue E-Invoice (as per Rule No: 48 (4) of CGST Rules) w.e.f. 01/08/2023 as notified in Notification No: 10/2023-CT dated 10/05/2023 (*Principal Notification No: 13/2020-CT dated 21/03/2020*).
2. We hereby confirm that our Aggregate Turnover (i.e. *Turnover computed on All India basis with same PAN*) for GSTIN : is More than 5 Crores & we are mandated to issue E-Invoice (as per Rule No: 48 (4) of CGST Rules) w.e.f. 01/08/2023 as notified in Notification No: 10/2023-CT dated 10/05/2023 (*Principal Notification No: 13/2020-CT dated 21/03/2020*).

Thanking you,

Yours Truly,

For and On behalf of,
Company name & seal

Date:

Place:

(Strike out whichever is not applicable)

(This undertaking should be issued in company letterhead & to be signed by Authorised Signatory.)

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ANNEXURE – A1

EMD through E-collect (Bank payment)

This explains how to make Payments to BHEL - Tiruchirappalli and through SBI-E-collect. Vendors (EMD and SD Payments payable by others) can utilize this facility. payments can be made using Internet Banking, Debit Cards / Credit Cards etc. SBI Charges a minimum amount (Service Charges) for every transaction. This may vary according to the MODE selected.

STEP BY STEP PROCEDURE:

Login to <http://www.onlinesbi.com>

1. Select State Bank Collect available on the top (pre login page)
2. Accept the terms and conditions and click "PROCEED"
3. Select State "TAMILNADU" and Institution type "INDUSTRY".
4. Select "BHEL TRICHY" under "INDUSTRY"
5. In the next page, Select APPROPRIATE category, fill details correctly & click "SUBMIT".
6. If all details entered are correctly populated, click "CONFIRM" to proceed.
7. Make payment as per your convenience. (Options available are payment of fees through SBI Net Banking, State Bank ATM cum Debit Cards / Other Bank Debit / Credit Cards and through SBI Branches).
8. Save & Keep the copy of receipt for future reference.

HOW TO TAKE RECEIPT FOR A PAYMENT MADE, EVEN ON LATER DATE:

(PLEASE CHECK THE STATUS BEFORE MAKING PAYMENT SECOND TIME)

1. Login to www.onlinesbi.com
2. Select State Bank Collect available on the top (pre login page)
3. Accept the terms and conditions and click "PROCEED"
4. Select "PAYMENT HISTORY" option available on the left side of screen.
5. Using two options as mentioned below, you can get the receipt:
 - a) Type the same Date of Birth, Mobile Number which you have entered at the time of making payment through SB collect. Select the date range and submit.
 - b) If you know the payment reference number, then enter the Reference number (DU...) along with anyone information (Date of Birth / Mobile Number which you have entered at the time of making payment). Select the date range and submit.
6. In the next page, take print out of receipt.

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No deviation and Declaration to be given by vendor in vendor's letter head

Name of work: Laying /Re-Laying/Repairs and Maintenance of roads in and around BHEL Township,Trichy

Tender Schedule No: CT:TS:07/24-25

We,_____ hereby declare that we do not have any deviations to the tender terms and conditions as per Technical Bid-Qualifying Criteria-Price bid and Special and General terms & Conditions of Contract

We further confirm that We have gone through all the tender terms and conditions and we have noted down the job content and acquired full knowledge and information about the site conditions including climatic condition of 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.

We have quoted our offer for all items by taking care of unit of measurement given in the Bill of quantities against individual items. In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void. We assure that no tampering was done to any part of tender document by us and if otherwise will lead to rejection of our bid. We confirm to have submitted our offer strictly in accordance with tender instructions.

We also hereby confirm the following points with ref to the above works, if ordered on us:

1. We do hereby confirm that we will pay (i) at least the minimum wages (minimum basic wages + minimum DA) to all the persons engaged (Un Skilled / Semi-Skilled / Skilled /Supervisor category) by us in the above contract as per the Tamilnadu Government Minimum Wages Act - 1948 & also as per any revisions made by the State Govt. from time to time and (ii) Bonus as per the Bonus Act-1965 along with Wage.
2. ESI, PF & Bonus (both Employer and Employee contributions) amounts are to be remitted for total wages to be paid as mentioned in (i) & (ii) of point 1 and challans to be produced along with invoices for all the respective persons engaged in the above contract.
3. The quoted amount in this tender will remain firm throughout the entire Contract period and no extra payment against service charges will be claimed from BHEL under any circumstances from our end.

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4. We, the contractor, will disburse the salary/wages to all the persons engaged in the contract ONLY through nationalized banking channel in their respective accounts & the relevant Bank statement / proof for Bank payment will also be produced along with PF and ESI challans to the Welfare Section every month for processing our invoices for payment.
5. We the contractor, will pay the previous month salary in full to our employees before 7th of every month and will not adjust any advance / loan / repayment due by the employee to us.
6. We, the contractor, shall ensure that all the payments to the persons engaged in the contract will be paid ONLY through nationalized bank. No other mode of payment (hand payment / account transfer as advance payment or any other) is acceptable as salary.
7. In case we fail to pay the minimum wages to all the persons engaged in the contract which includes Minimum wages with ESI and PF (Employer contributions) for every month including Bonus, BHEL has the right to recover from the outstanding payments to us either under this Contract or in any other Contract(s) or from Security Deposit or from both. In case this amount is insufficient for such recoveries, we shall make good the balance amount by actual payment. In addition, BHEL, Trichy may recover the said amounts through other running contracts from BHEL's sister units.
8. We also confirm to all the Terms & Conditions as per your above referred Enquiry & as per our offer submitted against the same.
9. We also declare that, we have not been suspended or black listed or issued with Show Cause Notice by BHEL Trichy-14 or any other BHEL Unit or any PSU / Government organization.

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The tender must be signed digitally / physically by Proprietor / Managing Partner / Director of the Firm. If any other person is authorized to sign the tender, this copy of Power of Attorney must accompany the tender.

POWER OF ATTORNEY

(To be typed on company's letter head)

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 and inter alia, sign, execute all papers and to do necessary lawful acts on behalf of our Company with M/s Bharat Heavy Electricals Ltd, HPBP, TRICHY-620 014, in connection with (Name of work)

.....
.....

vide Tender Schedule 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.

Director / CMD / Partner / Proprietor

Signature of Mr.....(Attorney)

Attested by: Director / CMD / Partner / Proprietor

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**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 **Laying /Re-Laying/Repairs and Maintenance of roads in and around BHEL Township, Trichy** (hereinafter referred to as "Contract"). 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 panel of Independent External Monitor(s) (IEMs), 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 thirdperson, any material or immaterial benefit which the person is not legally entitled to.
 - 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.
 - 1.1.4) 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. The Bidder(s)/ Contractor(s) commits himself to observe the following principles during participation in the tender process and during the contract execution

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Kan N
KV LAKSHMI NARAYANAN
MANAGER
CIVIL PLANNING & PUBLIC BLDGS
BHEL, TRICHY - 620 014

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- 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.
- 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 shall 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 , terminate the contract, if already awarded, exclude from future business dealings and/ 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 (s) from the tender process before award / order acceptance according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal is entitled to terminate the Contract according to Section 3, or terminates the Contract in application of Section 3 above , the Bidder(s)/ Contractor (s) transgression through a violation of Section 2 above shall be construed breach of contract and the Principal shall be entitled to demand and recover from the Contractor an amount equal to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee , whichever

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is higher, as damages, in addition to and without prejudice to its right to demand and recover compensation for any other loss or damages specified elsewhere in the contract.

Section 5 - Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 (three) 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 or action can be taken as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 6 - Equal treatment of all Bidder (s)/ Contractor (s) / Sub-contractor (s)

- 6.1 The Principal will enter into Integrity Pacts with identical conditions as this Integrity Pact with All Bidders and Contractors.
- 6.2 In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor(s) and ensure that all Sub-contractors also sign the Integrity Pact.
- 6.3 The Principal will disqualify from the tender process all Bidders who do not sign this Integrity 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 panel of Independent External Monitor (s) (IEMs) for this Integrity Pact. The task of the IEMs is to review independently and objectively, Whether and to what extent the parties comply with the obligations under this Integrity Pact.
- 8.2 The IEMs are 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 IEMs shall be provided access to all documents/ records pertaining to the Contract, for Which a complaint or Issue is raised before them as and when warranted. However, the documents/records/information having National Security implications and those documents which have been classified as Secret/Top Secret are not to be disclosed.
- 8.4 The Principal will provide to the IEMs 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 IEMs the option to participate in such meetings.
- 8.5 The advisory role of IEMs is envisaged as that of a friend, philosopher and guide. The advice of IEMs would not be legally binding and it is restricted to resolving issues raised by a Bidder

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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.

- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process or during execution of Contract, the matter should be examined by the full panel of IEMs jointly, 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 the CMD, BHEL at the earliest. They may also send their report directly to the CVO, in case of suspicion of serious irregularities requiring legal/ administrative action. Only in case of very serious issue having a specific, verifiable Vigilance angle, the matter should be reported directly to the Commission. IEMs will tender their advice on the complaints within 30 days.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the IEMs and its terms and conditions.
- 8.9 IEMs 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 Principal should be looked into by the CVO of the Principal.
- 8.10 If the IEMs have 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 IEMs may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 After award of work, the IEMs shall look into any issue relating to execution of Contract, if specifically raised before them. As an illustrative example, if a Contractor who has been awarded the Contract, during the execution of Contract, raises issue of delayed payment etc. before the IEMs, the same shall be examined by the panel of IEMs. Issues like warranty/ guarantee etc. shall be outside the purview of IEMs.
- 8.12 However, the IEMs may suggest systemic improvements to the management of the Principal, if considered necessary, to bring about transparency, equity and fairness in the system of procurement.
- 8.13 The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

- 9.1 This Integrity Pact shall be operative from the date this Integrity Pact 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. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.

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Integrity Pact (IP)

(a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors 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.

SI	IEM	Email
1	Shri Otem Dai, IAS (Retd.)	iem1@bhel.in
2	Shri Bishwamitra Pandey, IRAS (Retd.)	Iem2@bhel.in
3	Shri Mukesh Mittal, IRS (Retd.)	Iem3@bhel.in

(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.

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 provided below:

Details of contact person(s):

(1)

Name: _____

Deptt: _____

Address: _____

Phone: (Landline/ Mobile)

Email: _____

Fax: _____

(2)

Name: _____

Deptt: _____

Address: _____

Phone: (Landline/ Mobile)

Email: _____

Fax: _____

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E FORMAT

THE PURCHASE/CONTRACT EXECUTING AGENCY/BHEL

ACCEPTANCE FOR ELECTRONIC FUND TRANSFER / RTGS TRANSFER

01	Name & Address of the Supplier / Sub-contractor												
02	VENDOR CODE assigned by BHEL												
	Details of Bank Account:												
03	NAME & ADDRESS OF THE BANK												
04	NAME OF THE BRANCH												
05	BRANCH CODE												
06	MICR CODE	<table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>											
07	ACCOUNT NUMBER												
08	TYPE OF ACCOUNT	CURRENT A/C / OD / CASH CREDIT											
09	BENEFICIERY'S NAME												
10	IFSC CODE OF THE BRANCH	<table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>											
11	PAN												
12	EMAIL ID												
13	TELEPHONE/MOBILE NO.												

CERTIFICATE

I / We hereby agree to receive the payments due from BHARAT HEAVY ELECTRICALS LIMITED by the National Electronic Funds Transfer and/or RTGS Transfer mode by credit to my / our above mentioned Bank Account. I / We also agree that payments made to the above mentioned Account is a valid discharge of the liability of Bharat Heavy Electricals Limited. I / We also agree to bear the applicable Bank Charges for the above mode of transfer. **A copy of the cheque leaf / cancelled cheque leaf of the above account is sent herewith.**

AUTHORISED SIGNATORY WITH NAME SEAL

Banker's Certification

We confirm that we are enabled for receiving RTGS and NEFT credits and we further confirm that the account number of _____ (name of account holder), the signature of the authorized signatory and the MICR and IFSC codes of our Branch mentioned above are correct.

PLACE:**(Manager / Officer's)****DATE :**

**Signature Under Bank stamp and Name Seal
With Membership No.**

(Telephone / Mobile No.)

Forwarded to Accounts Dept.

We confirm the above details are verified with the records available with us.

Signature of the BHEL Executive with Name Seal (Operating the Contract/Services)

SIGNATURE OF THE APPLICANT

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SECTION 2 - PREAMBLE

1. The scope of work includes **Laying /Re-Laying/Repairs and Maintenance of roads in and around BHEL Township,Trichy** . The brief description of items of work is given in the bill of quantities provided in the Price Bid.
2. Time is the essence of the contract. Works shall be commenced within 10 days from the date of issuing Work order. Failure to commence the work after issue of work order will be considered as breach of Contract unless there is any delay which is not attributable to contractor. In case of breach of contract, appropriate action shall be taken as per tender conditions. Contractor shall take advance action for mobilization of manpower, materials, Tools & plants & submission of statutory documents for obtaining labour passes immediately after issue of work order in order to commence the work within specified time as mentioned earlier in this para. Being a time bound work, the contractor should make all efforts to complete the work in time. Even though the overall completion period is indicated in the tender, works shall be completed progressively and handed over as per agreed schedule.
3. The tender value excludes cost of Cement, reinforcement steel and structural steel, which will be supplied by BHEL at Stores at free of cost as indicated in “Schedule” of the Tender document.
4. Tender Value is only approximate and liable for variation without entitling the tenderer to any compensation, till the total value of contract does not vary more than 30%. The contractor has to execute any item of work irrespective of the quantity available in the tender without any reservation till the contract value does not vary more than 30%.
5. **Quoted percentage/rate for all items shall be firm throughout the contract period including extended period if any and no cost escalation is allowed on any account.** Some changes are likely in the quantities furnished as well as in the layout, design and specifications of the work. The rates quoted shall be deemed to be inclusive of all such contingencies.
6. **Taxes & Duties:**
The percentage rate offered is for finished item of works and shall provide for the complete cost towards fuel, tools, tackles, plant & machinery, temporary works, labour, materials, levies, taxes, transport, lay-out, repairs, rectifications, maintenance till handing over, supervision, establishment, services, revenue expenses, overheads, profits & all other incidentals etc., complete Rate quoted shall include all royalties, terminal taxes, Octroi duties, and any other taxes leviable under the State or Central Government rules. The Bharat Heavy Electricals Ltd., will not entertain any claim whatever in this respect.

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7. **All taxes/ duties/ Cess other than GST and BOCW cess shall be deemed to be included in the quoted percentage price.**
8. Response to Tenders will be entertained only if the contractor has a valid GST registration number which should be clearly mentioned in the offer.

The Contractor shall mention their GST registration number in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN / SAC Code, etc.

All invoices shall bear the SAC code (Services Accounting Code) & HSN Code (if applicable) for each item separately (Harmonized System of Nomenclature).

Payment shall be effected only after submission of declaration to the effect that all invoice particulars are/were uploaded in the GSTN network/ portal & All tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If it is not mentioned in the invoice a separate declaration shall be submitted as per the requirement of BHEL.

9. All documents like Work completion certificate and any other document mentioned in PO, shall be submitted.
For all works executed within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle (if Input Tax Credit is applicable). In case of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the works executed, in such case availing of tax credit will be deferred to next month or so.
10. In case of discrepancy in the data uploaded by contractor in the GSTN portal or in case of any shortages or rejection in the works executed, then BHEL will not be able to avail the tax credit (if Input Tax Credit is applicable) and will notify the Contractor of the same. The Contractor has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections, within the calendar month notified by BHEL.
11. For any such delay in availing of tax credit for reasons attributable to the Contractor (as mentioned above), interest (calculated @ SBI Base Rate + 6%) along with penalty if any will be deducted for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills.
12. **All taxes and duty other than GST , GST Cess & BOCW cess.**

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The contract price shall be inclusive of all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, Octroi, commissions or other charges which may be levied on the input goods consumed and output goods delivered in the course of Works Contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from the contractors bills or otherwise as deemed fit.

13. Goods and service Tax (GST) & Cess

The following conditions will apply and supplier shall fully comply to the below points.

Indigenous suppliers:

- i. Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration No (GSTIN) which should be clearly mentioned in the offer. If the dealer is exempted from GST registration, a declaration with due supporting documents need to be furnished for considering the offer. Dealers under composition scheme should declare that he is a composition dealer supported by the screen shot taken from GST portal. The unregistered dealer as well as the composition dealer has to submit an undertaking stating that they will not claim GST during the execution of the contract even if their status under GST changes to regular tax payer.
- ii. Supplier shall mention their GSTIN in all their invoices (incl. credit Notes, Debit Notes) and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No. which is linked/uploaded in GSTN network shall be clearly indicated), Billed to party (with GSTIN) & Shipped to party details, item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, Place of Supply etc.
- iii. All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).
- iv. Invoices will be processed only upon completion of statutory requirement and further subject to following:
 - a. Vendor declaring such invoice in Form GST ANX-1
 - b. Receipt of Goods or Services and Tax invoice by BHEL
- v. As the continuous uploading of tax invoices in GSTN portal (in GST ANX-1) is available for all (i.e. both Small & Large) tax payers under proposed new GST Return System, all invoices raised on BHEL may be uploaded immediately in GST portal on despatch of material /rendering of services. The supplier shall ensure availability of Invoice in

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GST portal before submission of invoice to BHEL. Invoices will be admitted by BHEL only if the invoices are available in GSTN portal (in BHEL's GST ANX-2).

- vi. In case of discrepancy in the data uploaded by the supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note or debit note (details also to be uploaded in GSTN portal) for the shortages or rejections in the supplies or additional claims, within the calendar month informed by BHEL.
 - vii. In cases where invoice details have been uploaded by the vendor but failed to remit the GST amount to GST Department (Form PMT-08 or Form GST RET-01 to be submitted) within stipulated time, then GST paid on the invoices pertaining to the month for which GST return not filed by the vendor will be recovered from the vendor along with the applicable interest and all subsequent bills of the vendor will not be processed till filing of the GST return by the vendor
 - viii. In case GST credit is denied to BHEL due to non-receipt or delayed receipt of goods and/ or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount claimed in the invoice shall be disallowed to the vendor.
 - ix. Where any GST liability arising on BHEL under Reverse Charge (RCM), the vendor has to submit the invoices to BHEL well within the timeline prescribed in GST Law, to enable BHEL to discharge the GST liability. If there is a delay in submission of invoice by the vendor resulting in delayed payment of GST by BHEL along with Interest, then such Interest payable or paid shall be recovered from the vendor.
- 14. The tenderers are advised to visit BHEL at Tiruchirappalli and get themselves acquainted with the site conditions before submitting the offer.
 - 15. Usually, working hours are limited to day time only. In emergency cases to carryout works during nights, it may be done so with the specific prior permission of BHEL. In such case, it is to be carried out in the presence of BHEL officials or their authorized persons.
 - 16. The work shall be carried out as per drawings released then and there, AWS / BIS specifications, standard code of practice and as per the instructions of Engineer-in-charge.
 - 17. For any item of work not covered in Bill of Quantities, the rate will be arrived at based on the conditions given in BHEL General Conditions of Contract in force.
 - 18. The percentage rate offered is for finished item of works and shall provide for the complete cost fuel, tools, tackles, plant & machinery, temporary works, labour, levies, taxes, transport, lay-out, repairs, rectifications, maintenance till handing over,

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supervision, labour colony Establishment, services, revenue expenses, overheads, profits & all other incidentals etc., complete.

19. New Taxes / Levies

In case the Government imposes any new levy / tax on the output service / goods / work after award of the contract, the same shall be reimbursed by BHEL at actual. In case any new tax / levy / duty etc. becomes applicable after the date of Bidder's offer, the Bidder / Contractor 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.

20. After award of work the contractor has to furnish the security deposit. Also it is to be noted that after award of work the contractor has to furnish 50 % of security deposit before the commencement of work.

21. For any clarification on the tender document, the bidder may seek the same in writing or through email, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.

22. The contractor should bring the construction earth moving machineries like Poclain, Paver, Road Roller, JCB etc., as and when required for the work without any delay. Also required number of the following tools & Plants / instruments shall be made available at site for the works as and when required.

- a. Precise Leveling instruments and theodolite.
- b. Inter carting vehicle (tractor, hand trolley etc)
- c. 8-10 tonne Vibratory / Pneumatic Roller

23. The contractor has to arrange sufficient number of lorries to collect & transport the surplus earth, construction debris generated, etc. at site. Otherwise BHEL would clear the debris at the contractor's risk and cost.

24. In the event of any conflict between requirement of any clause of this specification / documents / drawings / data sheets etc. or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error / missing pages / other clerical errors in the tender documents, noticed must be pointed out before submission of offer, else BHEL's interpretation shall prevail.

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25. **Payment Terms :**
No advance / mobilization advance will be given and the part-payment or advance for raw materials brought by the successful tenderer will not be paid. The payment for the finished items of works only will be paid after incorporating the required raw materials into the work, if any.
26. **PVC & ORC :**
PVC & ORC are not applicable for this tender.
27. **Order of Precedence**
In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:
- a. Amendments / Clarifications / Corrigenda / Errata etc. issued in respect of the tender documents by BHEL
 - b. Notice Inviting Tender (NIT)
 - c. Price Bid
 - d. Qualification Bid
 - e. General Conditions of Contract
28. The decision of Engineer-in-charge shall be final and binding on the contractor regarding clarification of items in this tender schedule.
29. Documentary evidences (Self-attested) for all the above qualification norms like works experience, ESI, EPF, PAN, GST and IT returns for the last three years etc..., all as required & indicated in the tender document should be furnished, without which it will not be taken into account. The tenderers shall produce original document for verification if so decided by BHEL.
30. The contractor may be required to undertake works at remote places and in such cases the contractor should make own arrangement for safety of BHEL materials, water required for the work and power etc. without extra claim from BHEL.
31. The contractor has to carry out the work in production shops without affecting the production by planning such work on holidays / obtaining proper shut down.
32. The decision of Engineer-in-charge shall be final and binding on the contractor regarding clarification of items in this tender schedule.
33. The works executed in the own name of the tenderer only will be considered for eligibility criteria. ***The nominated committee may also visit the works executed by the contractor / tenderer to ascertain the nature of work relating to similar works before qualifying.***

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34. The contractor shall strictly adhere to various labour laws in force.
35. The contractor shall ensure compliance of EPF&MP Act 1952, by the subcontractors, if any engaged by the contractor.
36. The contractor shall follow norms of BHEL security system for movement of men & material including bio-metric system & materials within the complex.
37. Since the responsibility for the quality, workmanship and accuracy of any work being carried out under this contract lies with the contractor, the contractor should ensure that no work is done without the presence of contractor's representative at the work spot. The contract should arrange for surveying construction site wherever required at his own cost.
38. BHEL reserves its right to reject the offer on account of unsatisfactory past performance by the present tenderer / his group / group of companies / any member in the consortium in case of consortium in another project / sister unit awarded under different enquiry. The tenderer has to declare the facts of performance with his customers and their contact details with phone & e-mail ids in his letter head. BHEL reserves its right to cancel the tender without assigning any reason.
39. Bank Guarantee format and the list of consortium banks are enclosed for BG submission against Security Deposit.
40. Tenderers are requested to furnish the duly filled in E format (attached as separate in the Qualification Bid) sheet along with a cancelled cheque leaf to accept Electronic Fund Transfer / R T G S transfer for any payment from BHEL, Trichy.
41. The contractor has to submit the organization chart of their set up for the works and any change thereafter in the organization set up shall have the prior approval of BHEL.
42. The contractor should submit the programme for the completion of work and the list of machineries and site personnel to be deployed for the work along with tender.
43. Statement of completed works with detailed measurements along with material reconciliation statements shall be submitted by the contractor in the last week of every month for processing bill.
44. The contractor should establish his own site office, labour colony, fabrication yard, handling facility, storage facility etc., for which vacant land will be allotted on specific request for which the rent will not be collected.

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45. Adequate number of Quality Engineer and qualified Safety Engineer should be deployed at site. Experienced Engineers / Supervisors are to be engaged in Railway and water supply works.
46. The tenderer has to deploy adequate labour of required categories such as Unskilled, Skilled, Technically experienced, etc. so as to execute the works simultaneously in all areas of work. The Technical persons with experience shall have to produce valid certificate for verification.
47. Expertise labour only to be engaged for specialized items of work like laying of ceramic tiles, marbles, cuddapah slabs, granite slabs and false ceiling, partition, wall paneling, architectural finishing, water proofing, repair & rehabilitation work etc. and work experienced persons shall be engaged for fabrication, water supply, railway track laying and aligning works, sewerage system work, etc.
48. Exclusive Stores personnel should be engaged who would coordinate with department official for clearance and collection of BHEL supplied materials required for works. Separate non-technical persons should be engaged for arranging daily gate passes for labours and vehicles entry in all the gates of BHEL Complex.
49. The works contract to be entered into with the successful tenderer will be governed by the BHEL Revised General Conditions of Contract in force.
50. All the works shall be executed as per the standard specifications as provided in TNBP / BIS and special specifications of manufacturer.
51. All the materials to be used in the work and the nature of work shall conform to the respective TNBP & BIS and National Building Organization, Standard Specifications forming part of "ALL INDIA STANDARD SCHEDULE OF RATES" specifications and shall be got approved by the Engineer-in-charge before actual incorporation in the work.
52. With regard to specifications not covered by the General and Special Conditions of Contract, those contained in the Tamil Nadu Building Practice Standard Specifications or other specifications approved by Bharat Heavy Electricals Limited, shall apply.
53. ***The contractor should use only the materials of brand and quality as approved by BHEL.***
54. All materials and consumables brought by the contractor should have manufacturer's certificate.
55. All materials brought by the Contractor for incorporation in the work shall be got inspected and approved by the Engineer-in-charge before they are incorporated in the work.

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56. Contractor's materials and tools & plants shall have to be brought inside BHEL with proper invoice / voucher and make necessary entry in the security gate. They should maintain proper record for tools and plats, materials, etc., brought inside BHEL complex.
57. To safeguard the persons working at height in roof, wall etc., sufficient number of Industrial Safety nets shall be provided at tenderer's cost in appropriate level and locations. The working hand including Supervisors, Engineers should wear the personal protective items and safety measures such as helmets, safety belts, shoes, etc., before entering into working place.
58. All safety measures are to be followed during execution of work, particularly during blasting and only licensed blaster should be engaged for this purpose. Sufficient care shall be taken by the contractor during excavation to avoid damages to the buried pipe lines, cables and other infrastructure like railway lines if any etc. Controlled blasting including muffling can be carried out with prior permission from safety department.
59. The tenderer shall carry out health performance test at his cost for all the workmen engaged in the work through a registered medical practitioner and produce certificate on demand.
60. It shall be the responsibility of the contractor to see that the workmen do not utilize the departmental canteen facilities, else recovery shall be levied. Contractor has to make his own arrangements to provide refreshment for the workmen.
61. The contractor should extend fullest co-operation with the third party agencies engaged, if any by BHEL to adhere the Quality Control Procedures ensuring quality.
62. The contractor should extend full co-operation to the other contractors who may be doing other works in the same areas to enable them to execute their portions of work without any delay or difficulty.
63. On the written request from the contractor ***Water required for the work may be provided by this organization at only one point at the site of the work at free of cost.*** In case of failure of water supply, the Contractor will have to make his own arrangements for water without any extra claims until supply is restored. BHEL does not accept any liability whatsoever for non-supply or delay in the supply of water under any circumstances. The contractor shall ensure that there is no wastage of water otherwise supply of water is liable to be stopped at contractor's risk and cost.
64. On the written request from the contractor ***Electrical energy required for the work may be given by this organization at any one point at the site of work at free of cost.*** BHEL does not accept any liability whatsoever for non-supply, delay in supply or failure of supply of electrical energy. Contractor shall ensure that there is no wastage of electrical energy otherwise supply is liable to be stopped at contractor's risk and cost. The contractor shall

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make leak proof / fire proof shed and provide control panel board of required capacity and lay the required cables at their own cost for further distribution.

65. On the written request from the contractor ***Compressed air for the work will be provided by this organization at only one point near the site of work at free of cost.*** The contractor should be in a position to make his own arrangement for compressed air without any extra claim for the uninterrupted operation of jackhammer with silencer wherever BHEL is not in a position to supply compressed air.
66. Field quality plan issued by BHEL should be strictly followed.
67. No advance / No mobilization advance will be given and the part-payment or advance for raw materials brought by the successful tenderer will not be paid. The payment for the finished items of works only will be paid after incorporating the required raw materials into the work, if any.
68. No Over Run Charges shall be applicable under any circumstances.
69. *Misuse of the building (residential/non-residential) taken for maintenance viz. not closing water tap / not switching off power / not closing the main door at the end of the day will attract a fine of Rs.500/- per occasion-*
70. *Any mixing of concrete or cement mortar directly on the road surface will attract a fine of Rs.1000/-.*
71. *Items of work other than those mentioned in bill of quantities attached with Price bid will be carried out at the rates to be fixed by this organization as per relevant clauses of the General Conditions of Contract.*
72. LD / Penalty clause is applicable as per General Conditions of Contract in force.
73. BHEL reserves its right to finalize the contract through reverse auction for which only qualified tenderers will be provided with necessary documents containing reverse auction rules, terms and conditions for this purpose.
74. In all matters of dispute, the decision of the General Manager, Bharat Heavy Electricals Ltd., Tiruchirappalli – 620 014. shall be final and binding on the tenderer / contractor.
75. Any claim or dispute arising from the tender stage, till/after completion of the work under the terms and conditions stipulated in the tender document/contract agreement shall only be enforced or settled in the courts at Tiruchirappalli, TamilNadu only.
76. **Force Majeure clause:** If at any time during the continuance of this contract the performance in whole or in part by either party of any obligations under this contract shall

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be prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) then provided notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof neither party shall reason of such events be entitled to terminate this contract nor shall either party have any such nonperformance and delay is resumed as soon as practicable after such events has come to an end or ceased to exist. If the performance in whole or part of any obligation under this contract is prevented or delayed by reason or any such event claims for extension of time shall be granted for period considered reasonable by BHEL subject to prompt notification by the tenderer to BHEL of the particulars of the events and supply to the BHEL if required of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed to be a waiver of time in respect of remaining deliveries.

77. The correspondence exchanged against the tender from both tenderer and BHEL through email are considered as valid document legally though it is not signed. It is treated as valid confirmations made on behalf of the respective company and very much comes under the legal ambit of the business transaction and hence it is binding on both the parties to the business.
78. Any transaction pertaining to the tender from both the parties of business done round the clock irrespective of the office or business hours of the companies, are valid legally and binding on both the parties. This applies to the extent only in such cases where deadline time for transaction is not specifically declared by either or both the parties to the business.
79. In case work order is issued through email, the PC generated time and date of mail shall be construed as the official time and date of release of LOI. In as much as this date is within the last date of validity given by the bidder the LOI is said to have been issued within the validity period and shall be binding on both the parties to the business.
80. Tenderers participating in the tender should declare in their technical bid that whether they have been black-listed / kept on hold for a specified period / given Business holiday for a specified period by any Public sector undertaking or Government departments. The reasons for such action with details and the current status of such hold shall be clearly furnished to BHEL. If no such details are mentioned in the offer then it will be construed that the subject bidder is not under any such hold. But at a later date if it comes to the notice of BHEL about any such hold under enforcement on the subject bidder, BHEL will have every right to reject the offer of such vendors at any point of time and also under any stage of the finalisation of the subject tender irrespective of the status of the subject bidder in that tender. Such bidders will not be permitted to participate in the further tender proceedings and will be communicated suitably. They will not be also considered for any ongoing tenders even if participated till the hold is officially lifted and confirmed in writing.

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81. *The 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 the management about any fraud or suspected fraud as soon as it comes to their notice*

82. **Deviations**

The contractor shall not make any alteration in addition to or omission from the work as described in the tender documents except in pursuance of the written instructions of the Engineer-in-charge. No such deviation from the work described in the tender documents shall be valid unless the same has been specifically confirmed and accepted by the Accepting Officer in writing and incorporated in the contract.

The Accepting Officer may deviate either by way of addition or deduction, from the work so described, provided that the contract sum be not thereby varied on the whole by more than the percentage set out in the tender documents. The value of all addition and deductions will be added to, or deducted from the contract sum. Whenever the Accepting Officer intends to exercise such a right, his intention shall specify the deviations which are to be made, the lumpsum assessment or the proposed basis of payment, the extra time allowed, if any, and the date for completion of the entire contract.

*Any objection by the Contractor to any matter concerning the order shall be notified by him in writing to the Engineer-in-charge within **Seven days** from the date of such order, but under no circumstances shall the work be stopped (unless so ordered by the Engineer-in-charge) owing to differences or controversy that may arise from such an objection. In the absence of such a notification of objection by the contractor, he will be deemed to have accepted the order and the conditions stated therein. In the event of the contractor failing to agree with the Engineer-in charge regarding the terms of the proposed deviation, the objection shall be referred to the Project Manager whose decision shall be final conclusive and binding on the Contractor.*

83. For Arbitration and Conciliation, Refer Section 4 in this document

84. BOCW Act & BOCW Welfare Cess Act

- a) All taxes/ duties/ Cess other than GST and BOCW cess shall be deemed to be included in the quoted Price.
- b) It is the responsibility of the contractor to comply with all the provisions of BOCW Act & BOCW Rules and the BOCW Cess Act and Cess Rules including obtaining of license and payment / deposit of applicable cess under the Cess Act along with applicable Rules.
- c) It shall be the sole responsibility of the contractor in the capacity of employer to forthwith (within a period of 15 days from the award of work) apply for a license to the Competent Authority under the BOCW Act and obtain proper certificate thereof by specifying the scope of its work. It shall also be responsibility of the contractor to furnish a copy of such certificate of licence / permission to BHEL within a period of one month from the date of award of contract.

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- d) Contractor shall make remittance of the BOCW cess as per the Act in consultation with BHEL as per the rates in force (presently 1%).
- e) It shall be the responsibility of the contractor to furnish the receipts / challans towards deposit of the cess together with the number, name and other details of beneficiaries (building workers) engaged by the contractor during the preceding month.
- f) BHEL shall reimburse the same only upon production of documentary evidence. However, BHEL shall not reimburse the fee paid towards the registration of establishment, fees paid towards registration of Beneficiaries and contribution of Beneficiaries remitted.
- g) In case of any non-compliance, contractor shall indemnify BHEL from all consequences / liabilities / penalties in case of non-compliance of the provisions of BOCW Act along with the allied Rules and the Cess Act along with allied Rules by the contractor.
- h) In cases of non-compliance, BHEL reserves the right to deduct and withhold the applicable cess amount, liabilities and penalties if any from the running bills of the contractor and the same will be released as and when the obligations required under the BOCW Act and Cess Act are complied by the contractor and necessary proof to that effect is submitted to BHEL by the contractor.

In all cases where the contractor received any notice/order under the BOCW Act and Cess Act from the concerned authorities, the contractor should immediately inform BHEL.

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(To be taken on Non-Judicial Stamp paper/e-stamp paper as per Stamp Act prevailing in the State)

FORMAT FOR BANK GUARANTEE

Bank Guarantee No:

Date:

To

Bharat Heavy Electricals Limited
High Pressure Boiler Plant, Tiruchirappalli – 620014

Dear Sirs,

1. 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 "BHEL House" SIRI Fort, New Delhi – 110 049), through its Unit at **High Pressure Boiler Plant, BHEL, Tiruchirappalli – 620014**, having awarded to**(NAME OF THE VENDOR /CONTRACTOR / SUPPLIER / VENDOR CODE)** with its registered office at **(NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER)** 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.**(DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE)**.....dated valued at Rs..... (**CONTRACT VALUE**) Rupees -----)/ FC.....(in words.....) for(**PROJECT/SUPPLY DETAILS**) (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank Guarantee, equivalent to 5 % (Five Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,
2. 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 ----- **(BG AMOUNT IN**

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FIGURES AND WORDS) (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.

3. 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. _____. (**BG AMOUNT IN FIGURES AND WORDS)**
4. 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.
5. 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.
6. 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.
7. We.....BANK 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

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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.

8. 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.
9. This Guarantee shall remain in force upto and including.....(**SIX MONTHS BEYOND THE CLOSING DATE OF CONTRACT**) and shall be extended from time to time for such period as may be desired by Employer.
10. 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.
11. Unless a demand or claim under this guarantee is made on us in writing on or before the(**SIX MONTHS BEYOND THE CLOSING DATE OF CONTRACT**) we shall be discharged from all liabilities under this guarantee thereafter.
12. Any claim or dispute arising under the terms of this document shall only be enforced or settled in the Courts at **Tiruchirappalli.**
13. 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..... (*BG AMOUNT IN FIGURES AND WORDS*)
- b) This Guarantee shall be valid up to(*SIX MONTHS BEYOND THE CLOSING DATE OF CONTRACT*)
- c) Unless the Bank is served a written claim or demand on or before (*SIX MONTHS BEYOND THE CLOSING DATE OF CONTRACT*) 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.

14. 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

(Name of the Bank)

of

Dated.....

Place of Issue.....

BANK IFSC AND MICR CODE:

BANK EMAIL ID:

BANK PHONE NO:

AUTHORISED SIGNATORIES CELL PHONE NO:

BANK FAX NO:

Important Notes to be complied with:

- The contact details of the Issuing Bank such as Email ID, Phone No. and Fax No. should be indicated in the BG. Further, (1) it should be typed in Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State. (2) It should be signed by TWO bank officials with Rubber stamp containing names & employees number of bank officials. (3) Issuing Bank IFSC and MICR code should be mentioned on BG.
- **Please note that issuance of the BG without meeting the above requirement will render the document invalid.**

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The Bank Guarantee bonds (BG) are to be submitted on non-judicial stamp paper of Rs. 100/- and should be only from any one of the below mentioned Banks in India.

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

- (1) It should be typed in the Rs. 100 value of stamp paper.
- (2) It should be signed by TWO bank officials with Rubber stamp containing names & employee numbers of bank officials.
- (3) It should be submitted with bank covering letter with sign and seal of the bank official

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**SECTION 3 - IMPORTANT POINTS TO BE TAKEN CARE OF WHILE
SUBMITTING OFFER**

Section 3A - INSTRUCTIONS TO TENDERERS

1) Earnest Money Deposit:

EMD is to be paid by tenderers for securing fulfilment of any obligations in terms of the NIT. Earnest Money is to be paid by each tenderer to ensure that the tenderer does not refuse to execute the work after it is awarded to him.

Mode of Deposit:

The EMD may be accepted only in the following forms:

EMD may be submitted in the form of

- a) Electronic Fund Transfer credited in BHEL account (before Tender opening) or*
- b) Bankers Cheque/Pay order/Demand Draft (DD) in favor of BHEL Trichy (along with offer) or*
- c) Fixed Deposit Receipt (FDR) issued by schedule banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL and affix one rupee (Rs.1/-) revenue stamp & sign on back side of FDR).*
- d) Insurance Surety Bonds*

In addition to above, EMD in excess of Rs. Two lakhs may also be accepted in the form of Bank Guarantee from scheduled bank. The Bank Guarantee in such cases shall be valid for at least six months.

EMD by the Tenderer will be forfeited 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.*
- b) The Contractor fails to deposit the required Security deposit or commence the work within the period as per LOI/ Contract.*

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 suppliers/ contractors" and forfeited/ released based on the action as determined under these guidelines.

- a) EMD shall not carry any interest.*

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b) EMD of successful tenderer will be retained as part of Security Deposit

- 2) Should a tenderer or a contractor on the list of approved Contractors have a relative, or in the case of a firm or Company of contractors any of its shareholders or shareholder's relative, employed in a gazetted capacity in the Engineering Department of the Bharat Heavy Electricals Limited, the authority inviting tenders shall be informed of this fact at the time of submission of the tender, failing which tender, may be disqualified or if such fact subsequently comes to light, the contract may be rescinded in accordance with the relevant provisions in the General Conditions of Contract.
- 3) The Bharat Heavy Electricals Limited will not be bound by any power of attorney granted by the tenderer or by changes in the composition of firm made subsequent to the execution of the contract. They may however recognize such power of attorney and changes after obtaining proper legal advice the cost of which will be chargeable to the contract concerned.
- 4) ***If the tenderer deliberately gives wrong information in his tender or creates conditions favorable for the acceptance of this tender, the Bharat Heavy Electricals Limited, reserves the right to reject such tender at any stage.***
- 5) Words importing the singular number shall also be deemed to include the plural number and vice versa where the context so requires.
- 6) The expenses for competing and stamping the agreement shall be paid by the contractor.
- 7) The General and special conditions are complementary to each other and where they are conflict the Special Conditions shall prevail. In regard to matters not covered by the General and Special Conditions of Contract, those contained, those contained in the Tamil Nadu Building Practice Standard Specifications or other specifications approved by the Bharat Heavy Limited, Shall apply.
- 8) Tenderers shall not increase their quoted rates in case the Bharat Heavy Electricals Limited, negotiates for negotiation for reduction of rates. Such negotiation shall not amount to cancellation or withdrawal of the original offer and the rates originally quoted shall be binding on the tenderers for a period of three months from the date of opening of tenders.
- 9) Canvassing in any form in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
- 10) ***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***

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discounts, the L-1 bidder shall be decided by a toss / draw of lots, in the presence of the L-1 bidder(s) or their representative(s). Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding."

- 11) *Any deviation to this tender terms & conditions, and schedules of this tender will lead to total rejection of the offer submitted.*
- 12) *Tenderer who have been suspended or black listed or issued with "Show Cause Notice" by BHEL, Tiruchirappalli - 620014 or any other unit or GOI will not be allowed to participate in the tender, and bidder should declare the same in the tender. Even during the course of evaluation / finalization of tender if it is found that some of the parties are black listed/ barred from business transaction / under business hold, BHEL will not consider them for further participation in the tender.*
- 13) *Amount should be quoted as per the Work schedule (Price bid / Part –II). Amount quoted in any other form will not be accepted, and will be rejected.*
- 14) *The tender must be signed digitally / physically by Partner/ Director of the Firm or by the person holding the Power of Attorney on behalf of the Firm concerned. In the latter case, a copy of Power of Attorney, duly attested by a Notary Public must accompany the tender (As per annexure-A4) If a tenderer deliberately gives wrong information in his tender or creates conditions favorable for the acceptance of his tender, the BHEL will reject such tender at any stage.*
- 15) *Words imparting singular number shall be deemed to include plural number and vice-versa where the context so requires.*
- 16) *Canvassing in any form in connection with tenders is strictly prohibited and the tenders submitted by the Contractors who resort to canvassing will be liable for rejection.*
- 17) *Should a Tenderer's or a Contractor's or in the case of a firm or company of contractors/any of its shareholder's or shareholder's relative is employed in BHEL, the authority inviting the tenders shall be informed in writing of this fact at the time of submission of the tender, failing which the tender may be disqualified, or if such fact subsequently comes to light, the contract may be cancelled.*
- 18) *The tender schedule, and the tender shall be deemed to form an integral part of the contract to be entered into for this work.*
- 19) *Tenderer shall sign the tender documents for having accepted the conditions and upload in e-procurement portal.*
- 20) *Tender can be cancelled at any stage due to unavoidable circumstances.*

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- 21) *Kindly ensure that the total size of the scanned documents to be uploaded remains minimum. If required, documents may be scanned at lower resolutions say at 150 dpi.*
- 22) *However, it shall be sole responsibility of bidder that the uploaded documents remain legible.*
- 23) *If there is a discrepancy between words and figures quoted by bidder, the amount in words shall prevail. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto 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.*
- 23) TENDERERS should fill in all the required particulars in the blank spaces provided for this purpose in the tender documents and also sign each and every page of Tender Documents including the drawings attach there to before submitting their tender.
- 24) In quoting their percentage rate, the tenderers are advised to take account all factors including any fluctuations in the market rates etc. No claim will be entertained on this account after acceptance of the tender or during the currency of the contract.
- 25) Before tendering, the tenderers are advised to inspect the site of work and its environments and be well acquainted with the actual working and other Prevalent conditions position of materials and labour, General and Special Conditions of Contract. Instructions to tenders, drawings and Specifications and all other documents which form part of the Agreements to be entered into.
- 26) The percentage rate quoted in the tender shall remain valid for a period THREE MONTHS from the date of opening of tenders.
- 27) In the event of tender being submitted by firm the tender must be signed separately and legibly by each partner or member of the firm or in their absence, by the person holding the power of attorney on behalf of the firm concerned in the latter case a copy of the power of attorney duly attested by a Gazetted Officer must accompany the tender.
- 28) The Bharat Heavy Electricals Limited reserve the right to reject any or all the received or accept any tender or part thereof without assigning any reason thereof. In the case acceptance of part of tender, time for completion may also be reduced to the extent considered appropriate by the Accepting Authority.
- 29) Conditional and Unwitnessed tenders, tender containing absurd rates and amounts tenders which are incomplete or otherwise considered defective and tenders not in accordance with the tender conditions laid down by the Accepting Officer are liable to be rejected.

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- 30) Should a Tenderer find discrepancies or omissions in the Tender documents or should there any doubt as to their meaning, he should at once address the authority inviting the Tender, for clarification well before the due date, so as to submit his Tender in time. (No extension of time shall be given for submission of the Tender on any account) Every Endeavour is made to avoid any error which can materially affect the basis of the tender but the successful tenderer shall take upon himself to provide for the risk of any error which may be subsequently by discovered and shall make no subsequent claim on account thereof.
- 31) Conditional Tenders, Tenders containing prima-facie absurd rates and amounts, Tenders which are incomplete or otherwise considered defective and Tenders not in accordance with the Tender conditions herein contained and the Tenders not in original are liable to be rejected.
- 32) Vendors are advised to get themselves acquainted with the site conditions, the scope / work details before submitting the offer.
- 33) The contractor shall quote only the lowest possible amount, inclusive of all taxes (except Goods & Service Tax which will be paid by BHEL extra as applicable) that can be offered for the intended quantity.
- 34) If a Tenderer deliberately gives wrong information in his Tender or creates conditions favorable for the acceptance of his Tender, BHEL will REJECT SUCH TENDER AT ANY STAGE.
- 35) Words imparting singular number shall be deemed to include plural number and vice-versa where the context so requires.
- 36) Canvassing in any form in connection with Tenders is strictly prohibited and the Tenders submitted by the Contractors who resort to canvassing will be liable for rejection. The Tender schedule and the Tender shall be deemed to form an integral part of the Contract to be entered into for this work
- 37) Late and Delayed Tenders will be summarily rejected and under no circumstances it will be considered and accepted.
- 38) All corrigenda/addenda/amendments/time extensions/clarifications, etc. to the tender will be hosted on BHEL & Govt. Tenders websites only (i.e. <http://www.bhel.com>, & <https://eprocure.gov.in>) and will not be published in any other media. Bidders should regularly visit above website(s) to keep themselves updated.
- 39) BHEL may reject the bid or in case the contract has been awarded, then terminate the contract apart from taking any other suitable action under the contract or applicable legal provisions or BHEL guidelines including Guidelines for suspension of Business Dealings, without any liability for any compensation to the bidder if, BHEL discovers at any time that

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any statement made by the bidder in the affidavit cum undertaking is false, fraudulent or Any document submitted by the bidder was fake and forged Or If BHEL determines in the sole discretion that any statement was aimed at deliberately misleading BHEL with a view to ensure award of the subject contract to the bidder.

- 40) The workmen to be deployed by the contractor shall adhere to the safety / security rules and regulations of the Company and any person who is found to be violating the security / safety rules of the company shall be replaced immediately at the cost of the contractor.
- 41) The contractor shall strictly adhere to various labour laws in force.
- 42) The decision of In-charge for this contract shall be final and binding on the contractor regarding clarification of items of works.
- 43) Lowest prices received against BHEL tenders need not be the technically acceptable one, and in that case, BHEL reserves the right not to consider the same.
- 44) BHEL would negotiate or re-float the Tender opened if L1 price is not the acceptable price to them inter-alia other reasons. Tenderers shall not increase their quoted rates in case BHEL, negotiates for reduction of rates. Such negotiation shall not amount to cancellation or withdrawal of the original offer.
- 45) In all matters of disputes, the decision of the General Manager, BHEL, Tiruchirappali-14 shall be final and binding on the Contractor.
- 46) Care should be taken to ensure only correct bid for the corresponding enquiry is placed in appropriate cover super scribing the same, failing which the bid will be liable for rejection.
- 47) No bidder shall be allowed to use any electronic gadgets viz., mobile phones, tablets etc during tender opening/ or at any other meeting with BHEL for the purpose of this tender, which if found would be liable for rejection of their bid.
- 48) The amount offered shall provide for the complete cost towards labour, consumables, tools, plants & machinery, transport, supervision, profits & overheads, and all other incidentals, etc. complete. However, if the GST is applicable for this contract, the same will be reimbursed on production of valid documentary proof for having paid the GST by them.
- 49) The works contract to be entered into with the successful tenderer will be governed by BHEL General Conditions of Contract in force.
- 50) The tenderer shall carry out health performance test at his cost for all the workmen

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engaged in the work through a registered medical practitioner and produce certificate on demand.

- 51) The contractor has to make his own arrangements to provide refreshment for the workmen deployed by him.
- 52) If any of the workers employed by the contractor is found to indulge in acts subversive of discipline, the same will be brought to the knowledge of the contractor and he shall arrange for replacement of such personnel.
- 53) Contractor/Authorized representative must be present at site to supervise the activities on day-to-day basis and for giving necessary instructions regarding the work to be carried out.
- 54) All the consumables, Tools & Plants used in the work shall be of approved quality and will be subject to periodical inspection by BHEL officials.
- 55) The contractor has to carry-out the work in production shops without affecting the day to-day production activities.
- 56) The contractor should record the entry of all machineries / materials at the security gate while bringing in for work.
- 57) Statement of completed works with detailed certified measurements along with material consumption statement shall be submitted by the contractor in the last week of every month for processing their bill.
- 58) Contractor's materials and tools & plant shall have to be brought inside the factory /Township with proper invoice / voucher and make necessary entry in the Security gate. They should maintain proper record for materials, tools & plants, etc., brought inside the factory/Township complex.
- 59) Works shall be carried out as per relevant IS standards and rules adhering to necessary safety precautions.
- 60) The contractor should extend fullest co-operation with the third party agencies engaged, if any by BHEL to adhere the Quality Control Procedures ensuring quality.
- 61) The labour engaged under this contract cannot be deployed in any other works.

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Violation of this rule will be viewed seriously.

- 62) No contract labour will be allowed to enter into BHEL premises without PPEs (i.e. Safety Shoes etc.) GST will be charged on the forfeited EMD/SD amount from the bidder at the applicable rates. GST tax Invoice will be issued to the vendor on receipt/recovery of GST amount from the vendor. The Contractor should engage technical persons and workmen with the following qualifications for works as detailed below and the contractor shall carry out the health Performance check at his cost for the workmen engaged in the work through a registered medical practitioner and produce the certificate on demand.

63) **Signing the Tender:**

The Tender shall be signed by the Authorized Signatory Only. 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. Authorized signatory should have Power of Autonomy issued by MD or Board of Directors or authorized person for this purpose for quoting Tender and all procedures connected with, till finalization and execution of the Contract.

In case the Bidder is a Partnership Firm under Partnership Act, the Tender shall be signed by all the Partners of the firm or by the Managing Partner who have Signature and Seal of the Contractor authorized to do so or by a person holding the Power of Attorney on behalf of the Partnership Firm.

A copy of the Partnership Deed and / or a copy of the Power of Attorney, Self-attested shall accompany the Proprietor or Partner of the Company.

BHEL will not be bound by any other Power of Attorney granted or the change in the composition of the firm made, subsequent to the execution of the Contract agreement. They may however recognize such Power of Attorney or change in status after obtaining legal advice and the cost involved in that connection shall be chargeable to the bidder concerned.

If tenderer expires after the submission of his tender or after the acceptance of his tender the BHEL may, at their discretion, cancels such tender. If a partner of a firm expires after submission of tender or after the acceptance of the Tender, BHEL may cancel such Tender at their discretion unless the firm retain its character. The works executed in the own name of the tenderer only will be considered for eligibility criteria.

- 64) Expenses incurred by bidder towards preparation of bid incidental to tender irrespective of whether it is accepted or not, shall be borne by vendor only.

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- 65) The offers of the tenderer / bidders who are on the banned list and also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site (www.bhel.com → Tender Notification → List of Banned Firms).

The Parties who have been suspended or black listed or issued with “Show Cause Notice” by BHEL Trichy-14 or any other BHEL Unit will not be allowed to participate in the Tender and the bidder should declare the same in the Tender. Even during the course of evaluation / finalization of Tender if it is found that some of the parties are black listed / barred from business transactions / under business hold, BHEL will not consider them for further participation in the Tender.

- 66) Similarly, the offers of the bidders who are suspended (under hold/ delist) for business dealings by BHEL shall not be considered. Please note that lifting/ restoration of suspension (Ban/Hold/ De-list) of business dealing is automatic after expiry of specified suspension period. Hence, vendor shall be considered as suspended for business till suspension is lifted by BHEL in writing on specific request of the vendor as per extant guidelines.
- 67) The contractor should extend full co-operation to the other contractors who may be doing other works in the same areas to enable them to execute their portions of work without any delay or difficulty.
- 68) **Contractor has 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, experience etc. acceptable to concerned department.**
- 69) **Contractors are advised that contract labours must be employed without any discrimination on caste or creed or religion or gender basis.**
- 70) **The contractor shall submit police verification certificate in respect of the persons, engaged for first time by the contractor, for delivering services.**
- 71) **The contractor by submitting the tender undertakes that, they had never been found guilty by a court of law in India for any offence in involving fraud, dishonesty and moral turpitude. If at a later date, if it comes to the notice of BHEL about any such occurrences on the subject bidder, BHEL will have every right to reject the offer of such vendors at any point of time.**
- 72) **The Contractor shall ensure that his workmen movement is restricted to their relevant work areas only & shall vacate the premises after the shift is over.**
- 73) **If a tender provides relaxation for vendors, and if a vendor fails to submit supporting**

documents, they will be treated at par with other vendors or their bid would be liable for rejection, wherever as the case may be.

- 74) In order to avoid unforeseen delay, it is advised that, any correspondence by vendor to BHEL shall be emailed to all the addressees as mentioned in tender. The correspondence through email wherever sought by BHEL shall be replied with all the addressees in 'cc' of the mail. Vendor shall furnish valid email id's in the tender and regularly verify the same.
- 75) The tenderer/Bidder or any of his authorized personnel or agents will be granted permission by the BHEL to enter upon its premises and lands for the purpose of site visit. However, the bidder shall undertake that he, his personnel, and agents will be responsible against all liability in respect thereof, including death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.
- 76) In general, Bidders shall themselves obtain all necessary information. A Bidder shall be deemed to have full knowledge of the Site, whether he inspects it or not and no extra claims due to any misunderstanding or otherwise shall be allowed. The cost of visiting the Site shall be at the Bidders' own expense.
- 77) The Bidder, at his own responsibility and risk & cost, is encouraged to visit, inspect and survey the Site and its surroundings and satisfy himself before submitting his bid as to the form and nature of the Site, the means of access to the Site, the accommodation he may require, etc.
- 78) **BENEFITS TO STARTUPS:** Start-up companies will be provided benefits and relaxation as per the latest government norms. For availing start-up benefits, relevant certificates issued by Department for Promotion of Industry and Internal Trade shall be submitted along with the tender.
- 79) **Preference to Make in India:**
For this procurement, the local content to categorize a supplier as a Class I local supplier/ Class II local Supplier/ Non Local supplier and purchase preference 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 NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.
- 80) 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

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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.

81) 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 authorize only one agent/dealer. There can be only one bod 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*

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must proactively declare such sister/ common business/ management units in same/ similar line of business.”

Section 3B- CRITERIA FOR AWARD OF WORK:

1. Evaluation of the offer shall be done on “Net Cash outflow to BHEL after taking into account applicable Taxes and Duties “and overall (package) L1 basis. The L1 position based on the quoted values (subject to calculations) excluding applicable Goods & Services tax (GST), will not necessarily mean L1 for a vendor, but the net liability to BHEL, after considering the Goods & Services tax (GST) criteria for all the vendors who had participated in the tender. In case of exemption from the payment of Goods & Services tax (GST), the vendor has to submit a declaration along with the tender. For such exempted vendor, Vendor cannot claim GST from BHEL, during the execution of the contract (if awarded) even if their status under GST changes to regular tax payer. The Evaluation currency for this tender shall be INR.
2. If the contractor back outs after opening of tender, the contractor is liable for forfeiture of the EMD paid.
3. BHEL reserves the right to increase or decrease the tendered quantity.
4. BHEL does not guarantee ordering of any minimum quantity.
5. Income Tax deduction at source as applicable in the IT Act from time to time will be made on the value of the bills in the absence of Income Tax Exemption Certificate from the concerned IT officer.
6. All the Statutory Obligations such as ESI, PF, Labor Acts, Factories Act, Goods & Services tax (GST), etc. will have to be taken care of by the vendor. BHEL will have no liability on them. Notwithstanding the above, if any demand notice is served by the concerned Statutory Authorities for recovery of any of their dues on BHEL, the same would be paid to the statutory authorities without notice to the vendor and recovered as a due from any pending / future bills.
7. In case contract is not executed by vendor after award and acceptance of contract, BHEL may exercise the right to forfeit EMD, Security Deposit / BG of such contractors and also suitable action will be taken by BHEL on those Contractors as deemed fit.
8. BHEL reserves the right to reject the tender, if it contains any tampering to the tender documents submitted by the bidder, at any stage.
9. The labors engaged under this contract cannot be deployed in any other work. Violation of this rule will be viewed seriously.

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10. BHEL reserves the right to cancel the tender or reject the lowest or any tender in full or in part without assigning any reasons whatsoever.
11. In order to ensure compliance to Minimum Wage payment to all workmen entering the BHEL premises, the entry of manpower shall be regulated based on the awarded value and the prevailing minimum wages.
12. Other than the bidder, none of its group concerns or affiliates etc. are participating in the tender either directly or indirectly through any other agency under same proprietor / common director(s) / common partner(s). The bidder should declare the same in the Tender. Even during the course of evaluation /finalization of Tender/ at any stage, if it is found that some of the parties are not fulfilling the above clauses, BHEL will not consider them for further participation in the Tender/ reject such tender/contract.
13. The contractor's responsibility under this shall commence from the date of receipt of the contract order. The Contractor will have to plan his work accordingly to complete the work within the scheduled period of completion.

SECTION 4 – PROCEDURES & GUIDELINES

SECTION 4A - REVERSE AUCTION GUIDELINES

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking."

Information and general terms and conditions governing RA are given below.

GENERAL TERMS AND CONDITIONS OF RA

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. *Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider). Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite*

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action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, GST for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the "Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.
12. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
13. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.

Reverse Auction will be conducted if two or more bidders are techno commercially qualified. In case of two or three qualified bidders, there shall be no elimination of H1 bidder (whose quote is highest in sealed envelope price bid). In case of four qualified bidders, the H1 bidder shall be eliminated whereas in case of five qualified bidders, H1 & H2 bidders shall be eliminated. However, in case of six or more qualified bidders are available, RA would be conducted amongst first 50% of the bidders arranged in the order of prices from lowest to highest. Number of bidders eligible for participating in RA would

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be rounded off to next higher integer value if number of qualified bidders is odd (e.g. if 7 bids are qualified, then RA will be conducted amongst lowest four bidders). However, there will be no elimination of qualified bidders who are MSE or qualifying under PPP-MII, Order 2017, provided their bids are within their respective margin of purchase preference {presently 15% for MSEs and 20% for PPP-MII, or as amended from time to time}.

In case of multiple H1 bidders, all H1 bidders (except MSEs and bidders qualifying under PPP-MII, Order 2017, who are within the margin of purchase preference) shall be removed provided minimum two bidders remain in fray, else no H1 removal.

The lowest bidder in sealed envelope price bid shall be shown as current L1 automatically by the system. System shall have the provision to indicate this bid as current L1 for further bidding.

This price can be displaced by an even lower bid of a competing bidder. If the start price is lower than the lowest sealed envelope price bid (in line with clause 8.0), on acceptance of such start price by any bidder this bid would be indicated as current L1 for further bidding. However, if no bidder accepts the start price, RA shall be treated as cancelled for the respective line item(s) and the tender shall be processed accordingly. In case of no further bidding, RA will be deemed to have been successful with current L1 bidder. During RA, all bidders will see their rank and current L1 price on the screen.

Once the RA is done, the ranking status would be based on the last quoted price of the bidder(s) irrespective of the quote received in RA or sealed envelope price bid.

No bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.

13.0 Processing of case after RA

13.1 Wherever the evaluation is done on total cost basis, after Reverse Auction, prices of individual line items shall be reduced on pro-rata basis.

13.2 In case of splitting requirement, bidders who were removed from participation in RA may also be considered for counter offer if the pre-stated (NIT) numbers of suppliers do not accept the counter offer. However, principle of splitting to N-1 bidder shall be maintained in line with extant Purchase Policy/ Work Policy.

13.3 Reasonability of rates received through RA to be ascertained as per extant Policy provisions.

14. Procedure of Reverse Auctioning

- i. Price bids of all techno-commercially qualified bidders shall be opened.
- ii. Reverse Auction: The 'bid decrement' will be decided by BHEL.
- iii. The lowest bidder in sealed envelope price bid shall be shown as current L1 automatically by the system and no acceptance of that price is required. System shall have the provision to indicate this bid as current L1.
- iv. Bidders by offering a minimum bid decrement or the multiples thereof can displace a standing lowest bid and become "L1" and this continues as an iterative process. However, no bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.
- v. After the completion of the reverse auction, the Closing Price shall be available for further processing.
- vi. Wherever the evaluation is done on total cost basis, after Reverse Auction, prices of individual line items shall be reduced on pro-rata basis.

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15. Schedule for reverse auction: The Reverse Auction is tentatively scheduled on {date}: ;{start time}: ;{Close Time: }.
16. Auction extension time: If a bidder places a bid in the last {...} minutes of closing of the Reverse Auction and if that bid gets accepted, then the auction's duration shall get extended automatically for another {...} minutes, for the entire auction (i.e. for all the items in the auction), from the time that bid comes in. Please note that the auto-extension will take place only if a bid comes in those last {...} minutes and if that bid gets accepted as the lowest bid. If the bid does not get accepted as the lowest bid, the auto extension will not take place even if that bid might have come in the last {...} minutes. In case, there is no bid in the last {...} minutes of closing of Reverse Auction, the auction shall get closed automatically without any extension. However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the auto-extension period to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc. The above process will continue till completion of Reverse Auction. Complaints/ Grievances, if any, regarding denial of service or any related issue should be given in writing thru e-mail/ fax to M/s. {Service provider} with a copy to BHEL within 15 minutes prior to initial closing time of Reverse Auction.
17. Bid price: The Bidder has to quote the Price inclusive of Packing & Forwarding charges, all the routine & type tests as per tender scope, taxes, duties, freight and insurance as specified in tender document but excluding GST,including loading (if indicated by BHEL due to deviations in technical/ commercial terms) for the Items specified. Details are as shown in Excel Sheet for calculation of total cost to BHEL (To be specified by Unit as per NIT conditions).
18. Bidding currency and unit of measurement: Bidding will be conducted in Indian Rupees per Unit of the material as per the specifications {...} In case of foreign currency bids, exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid) shall be considered for conversion in Indian Rupees. If the relevant day happens to be a Bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.
19. Validity of bids: Price shall be valid for {90 days} from the date of reverse auction. These shall not be subjected to any change whatsoever.
20. Lowest bid of a bidder: In case the bidder submits more than one bid, the lowest bid at the end of Reverse Auction will be considered as the bidder's final offer to execute the work.
21. Unique user IDs shall be used by bidders during bidding process. All bids made from the Login ID given to the bidders will be deemed to have been made by the bidders/ bidders' company.
22. Post auction procedure: BHEL will proceed with the Lowest Bid in the Reverse Auction for further processing.
23. Any commercial/ technical loading shall be separately intimated to respective bidders prior to RA. The excel sheet provided in this regard shall cover all these

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aspects. Commercial/ technical loading if any, shall be added by the respective bidder in its price during Reverse Auction. Modalities of loading & de-loading shall be separately intimated to the bidders. The responsibility for correctness of total cost to BHEL shall lie with the bidders.

24. Reverse auction shall be conducted by BHEL (through M/s {Service Provider}), on pre-specified date, while the bidders shall be quoting from their own offices/ place of their choice. Internet connectivity shall have to be ensured by bidders themselves. During the RA process if a bidder is not able to bid and requests for extension of time by FAX/ email/ phone then time extension of additional 15 minutes will be given by the service provider provided such requests come before 5 minutes of auction closing time. However, only one such request per bidder can be entertained. In order to ward-off contingent situation of connectivity failure bidders are requested to make all the necessary arrangements/ alternatives whatever required so that they are able to circumvent such situation and still be able to participate in the reverse auction successfully. Failure of power or loss of connectivity at the premises of bidders during the Reverse auction cannot be the cause for not participating in the reverse auction. On account of this, the time for the auction cannot be extended and neither BHEL nor M/s. {Service provider} is responsible for such eventualities.
25. Proxy bids: Proxy bidding feature is a pro-bidder feature to safe guard the bidder's interest of any internet failure or to avoid last minute rush. The proxy feature allows bidders to place an automated bid in the system directly in an auction and bid without having to enter a new amount each time a competing bidder submits a new offer. The bid amount that a bidder enters is the minimum that the bidder is willing to offer. Here the software bids on behalf of the bidder. This obviates the need for the bidder participating in the bidding process until the proxy bid amount is decrementally reached by other bidders. When proxy bid amount is reached, the bidder (who has submitted the proxy bid) has an option to start participating in the bidding process. The proxy amount is the minimum amount that the bidder is willing to offer. During the course of bidding, the bidder cannot delete or change the amount of a proxy bid. Bids are submitted in decrements (decreasing bid amounts). The application automates proxy bidding by processing proxy bids automatically, according to the decrement that the auction originator originally established when creating the auction, submitting offers to the next bid decrement each time a competing bidder bids, regardless of the fact whether the competing bids are submitted as proxy or standard bids. However, it may please be noted that if a manual bid and proxy bid are submitted at the same instant manual bid will be recognized as the L1 at that instant. In case of more than one proxy bid, the system shall bid till it crosses the threshold value of 'each lowest proxy bid' and thereafter allow the competition to decide the final L1 price. Proxy bids are fed into the system directly by the respective bidders. As such this information is privy only to the respective bidder(s).
26. Bidders are advised to get fully trained and clear all their doubts such as refreshing of Screen, quantity being auctioned, tender value being auctioned etc from M/s {Service provider}.
27. M/s. {Service provider}, shall arrange to demonstrate/ train the bidder or bidder's nominated person(s), without any cost to bidders. M/s. {Service

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provider}, shall also explain the bidders, all the business rules related to the Reverse Auction. Bidders are required to submit their acceptance to the terms/ conditions/ modalities before participating in the Reverse Auction in the process compliance form as enclosed. Without this, the bidder will not be eligible to participate in the event.

28. Successful bidder shall be required to submit the final prices (L1) in prescribed format (Annexure – VI) for price breakup, quoted during the Reverse Auction, duly signed and stamped as token of acceptance without any new condition (other than those already agreed to before start of auction), after the completion of auction to M/s. {Service provider} besides BHEL within two working days of Auction without fail.
29. Any variation between the final bid value and that in the confirmatory signed price breakup document will be considered as tampering the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings (as available on www.bhel.com).
30. Bidders' bid will be taken as an offer to execute the work/ supplies the item as per enquiry no. {...} dt. {...}. Bids once made by the bidder, cannot be cancelled/ withdrawn and bidder shall be bound to execute the work as mentioned above at bidder's final bid price. Should bidder back out and not execute the contract as per the rates quoted, BHEL shall take action as per extant guidelines for suspension of business dealings (as available on www.bhel.com).
31. Bidders shall be able to view the following on their screen along with the necessary fields during Reverse Auction: a. Leading (Running Lowest) Bid in the Auction (only total price of package) b. Bid Placed by the bidder c. Start Price d. Decrement value e. Rank of their own bid during bidding as well as at the close of auction.
32. BHEL's decision on award of contract shall be final and binding on all the Bidders.
33. BHEL reserves the right to extend, reschedule or cancel the Reverse Auction process at any time, before ordering, without assigning any reason, with intimation to bidders.
34. BHEL shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause. In such cases, the decision of BHEL shall be binding on the bidders.
35. Other terms and conditions shall be as per bidder's techno-commercial offers and other correspondences, if any, till date.
36. If there is any clash between this business document and the FAQ available, if any, in the website of M/s. {Service provider}, the terms & conditions given in this business document will supersede the information contained in the FAQs. Any changes made by BHEL/ service provider (due to unforeseen contingencies) after the first posting shall be deemed to have been accepted if the bidder continues to access the portal after that time.

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37. Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines for suspension of business dealings (as available on www.bhel.com), shall be initiated by BHEL.

Section 4B - Guidelines for Suspension of Business Dealings with Suppliers/ Contractors

Penal action can be initiated on the suppliers / Contractors in line with extant 'Guidelines for Suspension of Business Dealings with Suppliers/ Contractors. The abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' has been uploaded on <http://www.bhel.com> on "supplier registration page". BHEL's Guidelines for Suspension of Business Dealings with Suppliers/ Contractors shall apply to this Notice Inviting Tender/ Enquiry. The Bidders shall peruse the same prior to submission of the bid Any action taken or proposed to be taken by BHEL under the said policy shall be without prejudice, and in addition, to other rights and remedies as may be available to BHEL under contract or law."

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

1.0 Integrity commitment, performance of the contract and punitive action thereof:

1.1. Commitment by BHEL:

BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.

1.2. Commitment by Bidder/ Supplier/ Contractor:

1.2.1. The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit 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.

1.2.2. The bidder/ supplier/ contractor 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 and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.

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1.2.3.

The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in malpractices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price 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, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on [www. bhel.com](http://www.bhel.com) and/or under applicable legal provisions”.

If Tenderer expires after the submission of his Tender or after the acceptance of his Tender the BHEL may, at their discretion, cancels such tender. If a partner of a firm expires after submission of Tender or after the acceptance of the Tender, BHEL may cancel such Tender at their discretion unless the firm retain its character. The works executed in the own name of the Tenderer only will be considered for eligibility criteria.

Section 4C ARBITRATION & CONCILIATION

Except where otherwise provided for in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions hereinbefore mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the work or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the Executive Director / General Manager of BHEL and if ED is unable or unwilling to act, to the sole arbitration of some other person appointed by the ED / General Manager, willing to act as such arbitrator. The cases referred to arbitration shall be other than those for which the decision of the Manager / Senior Engineer / Engineer-in-charge is expressed in the contract to be final and conclusive.

There will be no objection if the arbitrator so appointed is an employee of B.H.E.L and that he had to deal with the matters to which the contract relates and that in the course of his duties as such he had expressed views on all or any of the matters in dispute or difference. The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, such Executive Director / General Manager as aforesaid at the time of such transfer, vacation of office or inability to act, shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

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Subject as aforesaid the provision of the Arbitration & Reconciliation Act, 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is a term of the contract that the party involving arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute.

The arbitrator(s) may from time to time with consent of the parties enlarge the time for making and publishing the award.

The work under the Contract shall, if reasonably possible, continue, during the arbitration proceedings and no payment due or payable, to the Contractor shall be withheld on account of such proceeding.

The Arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the Parties fixing the date of first hearings.

The arbitrator shall give a separate award in respect of each dispute or difference referred to him. The venue of arbitration shall be such place as may be fixed by the Arbitrator in his sole discretion. The award of the arbitrator shall be final, conclusive and binding on all parties to this contract.

In the event of disputes or differences arising between one public sector enterprise and a Govt. Department or between two public sector enterprises the above stipulations shall not apply the provisions of BPE office memorandum No. BPE/CL 001/ 76MAN / 2 (1.10) 75-BPE (GM-1) dated 1st January 1976 or its amendments for arbitration shall be applicable.

Except as provide elsewhere in this contract, in case amicable settlement is not reached between the parties, 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, then, either party may, by a notice in writing to the other party refer such dispute or difference to the sole arbitrations of an arbitrator appointed by Head of the BHEL Unit /Region/Division issuing the contract.

The arbitrator shall pass a reasoned award and the award arbitrator shall be final and binding upon the parties. Subject as aforesaid, the provisions of arbitration and conciliation Act 1996 (India) or statutory modification or re-enactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under the clause .The seat of arbitration shall be Tiruchirapalli , Tamil Nadu
The cost of arbitration shall be borne as per the award of the Arbitrator.

Subject to the arbitration in terms of clause, the Courts at Tiruchirapalli, Tamil Nadu Shall have Exclusive jurisdiction over any matter arising out of or in connection with this Contract.

Notwithstanding the existence or any dispute or differences and / or reference for the arbitration, the Contractors shall proceed with and continue without hindrance the performance of its obligation under this Contract with due diligence and expedition in a professional manner expect where the contract has been terminated by either party in terms of this Contract.

In case of contract with public sector enterprise (PSE) or a Government department, the following shall be applicable:

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In the event of any dispute or difference relating to the interpretation and application of the provisions of the Contract, such dispute or difference shall be referred by either party for arbitration to the sole arbitrator in the Department of public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of public Enterprises. The arbitration and conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the arbitrator shall be binding upon the parties to the dispute ,provided, however, any party aggrieved by such award may make further reference for setting aside or revision of the award to the law secretary, department of legal affairs ,ministry of law and justice, Government of India. Upon such reference the dispute shall be decided by the law secretary or the special secretary or Additional secretary when so authorized by the law secretary, whose decision shall bind the parties hereto finally and conclusively. The parties to the dispute will share equally the cost of arbitration as intimated by the arbitrator.

BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS

1. 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 herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counter-claims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores.
5. Conciliation shall be carried out by 3 Conciliators nominated by BHEL.
6. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
7. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties

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have expressed willingness to settle the matter or there exists possibility of settlement in the matter, the proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.

8. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case within 15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case within 1 month from the date of conclusion of the last hearing.
9. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.
10. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.
11. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
12. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
13. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
14. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.

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15. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.
16. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
17. Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.
18. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.
19. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.
20. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
21. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.
22. Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent

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Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.

23. The proceedings of Conciliation under this Scheme may be terminated as follows:
- On the date of signing of the Settlement agreement by the Parties; or,
 - By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
 - By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
 - By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration.
 - On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.
24. The Conciliator(s) shall be entitled to following fees and facilities:

SI No	Particulars	Amount
1	Sitting fees	Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.
2	Towards drafting of settlement agreement	In cases involving claim and/or counter-claim of up to Rs 5 crores. Rs 50,000/- (Sole Conciliator)
		In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores. Rs 75,000 (per Conciliator) In cases involving claim and/or counter-claim of more than Rs 10 crores. Rs 1,00,000/- (per Conciliator) Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on Signing of the Settlement Agreement after approval of the Competent Authority or Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.

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SI No	Particulars	Amount
3	Secretarial expenses	Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC. Where Conciliation is by multi member Conciliators – Rs 30,000/- (one time)- to be paid to the IEC
4	Travel and transportation and stay at outstation Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL)	As per entitlement of the equivalent officer (pay scale wise) in BHEL.
	Others	As per the extant entitlement of whole time Functional Directors in BHEL.

SI. No	Particulars	Amount
5	Venue for meeting	Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the concerned Unit / Division / Region / Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately.

25. The parties will bear their own costs including cost of presenting their cases / evidence / witness(es) / expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings.
26. If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties.

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27. The other expenditures/costs in connection with the Conciliation proceedings as well as the IEC's fees and expenses shall be shared by the Parties equally.
28. Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove.
29. The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 3 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents. The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.
30. The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement, except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/ regulatory body, as the case may be.
31. The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:
 - a. Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
 - b. admissions made by the other party in the course of the Conciliator proceedings;
 - c. proposals made by the Conciliator;
 - d. The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.
32. The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
33. None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.

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34. The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.
35. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.

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FORMAT FOR SEEKING CONSENT FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC

To,

M/s. (Stakeholder's name)

Sub: Resolution of the Disputes through conciliation by Independent Expert Committee (IEC).

Ref: Contract No/MoU/Agreement/LOI/LOA& date _____.

Sir,

With reference to above referred Contract / MoU / Agreement / LOI / LOA, you have raised certain Disputes / claims. Vide your letter dated _____ you have requested BHEL to refer the Disputes / claims to IEC for Conciliation.

We are enclosing herewith Format (3) for giving consent and the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. You are requested to give your unconditional consent to the said terms and conditions of the Scheme by returning the same duly sealed and signed on each page. On receipt of your consent, matter will be put to the Competent Authority for consideration and decision.

Please note that BHEL has also certain claims against you (if applicable). BHEL reserves its right to agree or not to agree conciliation of the said disputes through BHEL and this letter is being issued without prejudice to BHEL's rights and contentions available under the contract and law.

Yours faithfully,

Representative of BHEL

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**FORMAT FOR GIVING CONSENT BY CONTRACTOR / VENDOR / CUSTOMER / COLLABORATOR
/ CONSORTIUM PARTNERS FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC**

To,

BHEL

.....

Sub: Resolution of Disputes through Conciliation by Independent Expert Committee (IEC).

Ref: Contract / MoU / Agreement / LOI / LOA No & date_____

With reference to above referred contract, our following bills/invoices/claims submitted to BHEL are still unpaid giving rise to Disputes:

Sl. No.	Claim Description	Bill submitted to BHEL (no. and date)	Amount of the bill / claim	Amount received from BHEL	Outstanding Amount

Accordingly, we request you to kindly refer the Disputes in respect of above claims to IEC for Conciliation.

We hereby agree and give our unconditional consent to the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. We have signed the same on each page and enclosed it for your consideration.

Yours faithfully,

(Signature with stamp)
Authorized Representative of Contractor
Name, with designation Date
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Appendix III

STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO THE IEC BY BOTH THE PARTIES

1. Chronology of the Disputes
2. Brief of the Contract/MoU/Agreement/LOI/LOA
3. Brief history of the Disputes:
4. Issues:
5. Details of Clam(s)/Counter Claim(s):

Sl. No.	Description of claim(s)/ Counter Claim	Amount (in INR) Or currency applicable in the contract	Relevant contract clause

6. Basis/Ground of claim(s)/counter claim(s) (along with relevant clause of contract)

Note– *The Statement of Claims/Counter Claims may ideally be restricted to maximum limit of 20 pages. Relevant documents may be compiled and submitted along with the statement of Claims/Counter Claims. The statement of Claims/Counter Claims is to be submitted to all IEC members and to the other party by post as well as by email.*

The contractor should engage Technical persons and Workmen for works and the contractor shall carry out the Health Performance check at his cost for the workman engaged in the work through a registered medical practitioner and produce the certificate on demand.

The contractor should engage Technical persons and Workmen for works and the contractor shall carry out the Health Performance check at his cost for the workman engaged in the work through a registered medical practitioner and produce the certificate on demand.

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SECTION – 5 SPECIAL CONDITIONS OF CONTRACT

1. Permission for erection of temporary work sheds etc., at site will have to be obtained from BHEL in writing in advance.
2. The works contract to be entered into with the successful tenderer will be governed by the BHEL revised General Conditions of Contract in force.
3. The successful tenderer / Contractor shall observe all safety regulations and take necessary safety precaution as called for under the “BHEL General Conditions of Contract and Safety Precautions” enclosed herewith.
4. In all matters of dispute, the decision of the General Manager, Bharat Heavy Electricals Ltd., Tiruchirappalli – 620 014 shall be final and binding on the tenderer / contractor.
5. Some changes are likely in the quantities furnished as well as in the layout, design and specifications of the work. The rate quoted shall be deemed to be inclusive of all such contingencies.
6. All the materials to be used in the work and nature of work shall conform to respective TNBP, IS and National Buildings Organization Standard Specifications and shall be got approved by the Engineer – in – charge before actual incorporation in the work.
7. Unless otherwise indicated in the Bill of Quantities cement, reinforcement steel (MS rods, CTD bars etc.), structural steel sections and other items (as mentioned in Schedule B) will be issued at BHEL Stores at free of cost. The Contractor’s quoted rates shall therefore be inclusive of the cost of conveyance of these items from BHEL Stores to site of work including, loading, unloading and other incidental costs etc. The quantities of each items to the extent required for actual incorporation of the work will be treated as ISSUED FREE OF COST.
8. All materials brought by the Contractor for incorporation in the work shall be got inspected and approved by the Engineer-in-charge before they are incorporated in the work
9. The Engineer-in-Charge or his duly authorized representative shall have all reasonable times access to Contractor’s premises of work and shall have the power at all the reasonable times to inspect and test any portion of the work or examine the materials and workmanship of the structures during their manufacture and test. The contractor shall give due notice in writing to the Inspecting Engineer of BHEL when the materials supplied to be incorporated in the work are ready for Inspection and test. No material shall be incorporated in the work until the inspecting Engineer certified in writing that such materials have been inspected and approved by him.

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10. The Contractor shall closely scrutinize all the drawings issued in connection with the work by this organization and bring to the notice of the Engineer-in-charge if any discrepancies, omissions in the drawings before undertaking the actual work pertaining thereto.
11. The contractor should submit in advance every fortnight a detailed programme of work to be undertaken from time to time strictly in conformities with the "Time and Progress Chart" covering the entire constructed work and reschedule them wherever necessary during the progress of the work so as to achieve the target set. Periodical progress reports of every fortnight should also be furnished by the Contractor regarding the collection of materials issued and to be issued from BHEL Stores and other relevant information as asked for by the Engineer-in-charge and other BHEL Officers-in-charge of the work.
12. The contractor should extend full co-operation to the other contractors who may be doing other works in the same areas to enable them to execute their portions of work without any delay or difficulty
13. *There exist different work areas and-8 Sectors (A, B, C, D, E&R,PH,S and K&N) in Township complex- Hence, the contractor shall ensure that himself or his authorized representative visits and meets the Engineer in-Charge of the respective areas where work is allocated to the contractor to receive work instructions / complaints on daily basis by 9:00 AM as instructed by Engineer-in-charge.*
14. *If the Contractor / his representative fails to turn up to the office of the Engineer in-charge to receive the complaints / instructions by 09:00 AM, it will be considered as "Absent" and recovery for non-deployment of supervisor will be levied at the prevailing minimum wages (including statutory requirements i.e. PF, ESI, etc.) along with additional 5 % over heads will also be effected from the date of Work order.*
15. During the original contract period or its extensions if any, BHEL reserves the rights to terminate the contract or withdraw portion of work and get it done through other agency, after due notice of a period of 14 days (this period can be reduced in case of urgency or increased otherwise) by BHEL in any of the following cases
 - a) *Contractor's poor progress of the work vis-à-vis execution timeline as stipulated in the Contract, backlog attributable to contractor including unexecuted portion of work does not appear to be executable within balance available period (#) considering contractor's performance of execution.*
 - b) *Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.*
 - c) *Non completion of work by the Contractor within scheduled completion period as per Contract or as extended from time to time, for the reasons attributable to the contractor.*

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- d) Termination of Contract on account of any other reason (s) attributable to Contractor.
- e) Assignment, transfer, subletting of Contract without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.
- f) Non-compliance to any contractual condition or any other default attributable to Contractor.
- g) Non Commencement of Work within the period as mentioned in the contract.

In-case inputs from BHEL/Customer are likely to be delayed or are actually delayed, this delay may also be taken into account while considering balance period available for execution of Contract.

16. Breach of contract (or) Cancellation /Termination of contract

*In case of breach of contract (or) cancelation/termination of contract, wherever the value of security instruments like performance bank guarantee/Security deposit 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:*

a. from dues available in the form of Bills payable to defaulted supplier against the same contract.

b. from the dues payable to defaulted supplier against other contracts in the same Region/Unit /any other region/unit

c. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier.

Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., will be applied as per provisions of the contract."

- 17. Any tools/spares/machinery (other than free issue materials) issued by BHEL on written request by contractor will be on chargeable basis and based on availability. The charges shall be decided by BHEL and deemed to be final binding the contractor.**

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SECTION 6

TECHNICAL CONDITIONS OF CONTRACT

ROAD WORK SPECIFICATION

1.0 Terminology

Asphalt: A natural or artificial mixture in which bitumen is associated with mineral matter. The word 'Asphalt' should always be qualified by indication of its origin or nature.

Asphalt Mastic: An intimate mixture of mineral fillers, well graded sand and / or stone chippings with a hard grade of bitumen, cooked and laid hot manually by means of wooden float. The mixture settles to a coherent, voidless and impermeable solid or semi-solid mass under normal temperature condition.

Bitumen: A noncrystalline solid or viscous material, having adhesive properties derived from petroleum either by natural or refinery processes and substantially soluble in carbon disulphide.

Bitumen-Cutback: Bitumen, the viscosity of which has been reduced by a volatile diluent when blended with kerosene or naphtha type diluent or fuel oil, is called, medium or rapid or slow curing cut backs respectively.

Bitumen-Emulsion: A liquid product in which a substantial amount of bitumen is suspended in a finely divided condition in an aqueous medium containing an emulsifier and stabiliser. The emulsion is termed 'Anionic' when the bitumen particles are negatively charged and the aqueous phase is alkaline. The emulsion is termed 'cationic' when the particles are positively charged and the aqueous phase is acidic.

Bitumen Mastic:

Filler: Inorganic mineral material all of which will pass through specified IS: sieve used in admixture with solid or semi-solid bituminous material.

Road Tar: A product obtained by treating at high temperature coal tar in such a manner that it conforms to a specification which defines its suitability for road construction.

Tar: A viscous material having adhesive properties and resulting from the distinctive distillation of certain type of organic material. The term Tar should be preceded by the name of the material from which it is produced e.g. coal, shale, peat, vegetable matter and its mode of production shall be indicated.

Flash Point: The lowest temperature at which the vapour of a substance can be ignited in air by a flame under specified conditions of test. The substance itself does not continue to burn.

Tack Coat: It shall consist of application of a single coat of low viscosity liquid bituminous material to an existing road surface preparatory to further bituminous construction.

1.1 Materials

1.1.1 Aggregate Coarse

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Coarse aggregate as specified in the item shall be either crushed / broken stone, hard blue granite or one of the naturally occurring aggregates such as kankar or laterite of suitable quality as stated hereinafter and approved by the Engineer-in-charge.

The stone aggregate shall conform to the physical requirements set forth in Table 1.1. The type and size range of the aggregate shall be specified in the contract.

TABLE 1.1

PHYSICAL REQUIREMENTS OF COARSE AGGREGATE

Sl.No.	Type of Constn.	Test of W.B.M.	Test method	Requirements
1.	Sub-base	Los Angeles Abrasion value or Aggregate impact value	IS: 2386 (Pt.IV) IS: 2386 (Pt.IV) IS: 5640***	60% max. *50% max.
2.	Base	(a) Los Angeles Abrasion value of aggregate impact value (b)	IS 2386 (Pt. IV) IS 2336 (Pt. IV) IS 5640*** IS 2386 F (1)	50% max. **40% max. ** 15% max.
3.	Surface Course	(a) Los Angeles Abrasion value or Aggregate impact value (b) Flakiness Index	IS 2386 (Pt. IV) IS 2386 (Pt. IV) IS 2386 F (1)	40% max. 30% max.

The coarse aggregate shall conform to one of the gradings given in Table 1.2 as specified. For crushable type of aggregates such as kankar and laterite, hard blue granite grading shall not be regarded as very important, but the materials should generally be within the specified range.

TABLE 1.2

GRADING REQUIREMENTS OF COARSE AGGREGATE FOR W.B.M.

Grading No.	Size Range	Sieve designation	% by weight passing the sieve
1.	90mm to 45mm (suitable for sub base courses of compacted layer of not less than 90mm thickness)	125mm 90mm 63mm 45mm 22.4mm	100 90 – 100 25 – 60 0 – 15 0 - 5

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2.	63mm to 45mm	90mm 63mm 53mm 45mm 22.4mm	100 90 – 100 25 – 75 0 – 15 0 – 5
3	53mm to 22.4mm	63mm 53mm 45mm 22.4mm 11.2mm	100 95 – 100 65 – 90 0 – 10 0 - 5

1.1.1.1 Crushed or Broken Stone: When crushed or broken stone is specified as the coarse aggregate, it shall be hard, durable and free from excess of flat, elongated, soft, disintegrated particles, dirt and other objectionable matter. The total quantity of such deleterious material including clay lumps, soft fragment, foreign material etc., shall not exceed 5% of the weight of the aggregate.

1.1.1.2 Kankar: Kankar shall be tough, having a blue almost opalescent fracture. It shall not contain any clay in the cavities between nodules.

1.1.1.3 Laterite: Laterite shall be hard, compact, heavy and of dark colour. The light coloured sandy laterite as well as those containing much ochreous clay shall be rejected.

The sum of the percentages of all deleterious material shall not exceed 5%. Tests for estimation of deleterious materials and organic impurities shall be done as per IS : 2386 (Pt.II).

1.1.3 Binding Material

Binding materials to prevent ravelling of water bound macadam construction shall consist of a fine grained material possessing plasticity index value of 4 to 9 when the water bound macadam is to be used as a wearing course, and 4 to 6 when W.B.M. is being adopted as a sub-base/base course with bituminous surfacing on top of it. The plasticity index shall be determined in accordance with IS:2720 (Pt.V). The quantity of binding material used in each layer shall be as per direction of the Engineer-in-charge, where screening consisting of crushable type material like morrum or gravel are used. Where earth cut for sub-grade formation is used as binder with the approval of Engineer-in-charge, no separate payment shall be made for collection of this binder material.

1.1.4 Bitumen Straight run

A range of grades, from a very soft to a very hard consistency, can be produced by varying the temperature and the rate of flow during distilling process. It shall conform to IS:73. Grades of bitumen for different uses is given in Table 1.3

TABLE 1.3
BITUMEN GRADES

	Grade	Temperature to which it shall be heated
I	FOR PAINTING (Surface Dressing)	

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	1	Paving bitumen from Assam Petroleum A 90	177 deg. C to 190 deg. C
	2	Paving bitumen from other sources 80/100 – S90	177 deg. C to 190 deg. C
	3	Bitumen Emulsion min. 50% bitumen content: RS grade IS:8837	(Cold application)
	4	Cut backs RC-3 (rapid curing) IS:217	-do-
II	FOR PREMIX CARPETING		
	1	Paving Asphalt 30/40 s-35 OR 80/100 S-90	149 deg C to 177 deg. C
	2	Bitumen Emulsion min. 60% bitumen contents RS grade IS:8837	(Cold application)
	3	Cut back MC (medium curing) IS:4545	(Cold application)
III	FOR ASPHALTIC CONCRETE STRAIGHT RUN BITUMEN 60/70 (S-65) CONFIRMING TO IS : 73		150 deg. C to 177 deg. C

Note: For premix carpeting with paving asphalt, extra shall be paid if solvent is used.

1.1.5 Filler

The filler, where specified, shall be an inert material, the whole of which passes through a 710 micron sieve, atleast 90 percent passing through a 180 micron sieve and not less than 70 percent passing through a 90 micron sieve. The filler shall be cement, stone dust, hydrated lime, lime stone dust, fly ash or any other non-plastic mineral matter approved by the Engineer-in-charge.

TABLE 1.4
AGGREGATE GRADATION INCLUDING FILLER

Sieve designation	Percent by weight passing the sieve	
	For 25mm thickness	For 20mm thickness
20.0 mm	100	--
12.5mm	75 -100	100
10.0mm	60 - 85	75 - 100
4.75mm	35 - 55	35 - 55
2.36mm	20 - 35	20 - 35
600 micron	10 - 22	10 - 22
300 micron	6 - 16	6 - 16
150 micron	4 - 12	4 - 12
75 micron	2 - 8	2 – 8

1.1.6 Flyash

Flyash shall conform to IS 3812 (Pt.III)

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1.1.7 Lime

1.1.7.1 Lime used shall conform to IS:712-1984 Building limes are classified as follows:

Class A : Eminently hydraulic lime used for structural purposes.

Class B : Semi hydraulic lime used for masonry mortars.

Class C : Fat Lime used for finishing coat in plastering, white washing etc., and addition of Pozzolanic material for Masonry Mortar.

Class D : Magnesium lime used for finishing coat in plastering, white washing etc.

Class E : Kankar lime used for masonry mortars.

1.1.7.2 Quick Lime: Quick Lime shall be supplied in the form of lumps and not in powder. Soon after delivery, lump lime shall be separate from powder and all underburnt/overburnt lumps and the powder removed. Quick lime shall not be used directly in the work and shall invariably be slaked and converted to lime putty before use.

1.1.7.3 Hydrated Lime: Hydrated lime shall be in the form of a fine dry powder. It shall be supplied in suitable containers such as jute bags lined with water proofing membrane. The bags shall bear marking indicating the class of lime, net weight, date of manufacture and the brand name. It shall be used within 4 months of its date of manufacture.

1.1.7.4 Storage: Lime shall be stored in weather proof sheds. Hydrated lime shall be stored in the same manner as cement. Lime which has been damaged by moisture or air-slaking shall not be used. All damaged and rejected lime shall be removed from the site of work forthwith.

1.1.7.5 Testing: Chemical and physical requirements of building limes are as per Physical and chemical requirements specified in CPWD Specification Vol.I. Laboratory tests shall be carried out to check the quality of lime to be used.

1.1.8 Moorum

It shall be obtained from pits of weathered disintegrated rocks. It should preferably contain silicious material and natural mixture of clay of calcarious origin. The size of moorum shall not be more than 20mm.

1.1.9 Soil

Soil having a plasticity index (PI) between 5 and 20 shall be suitable. Atleast one test for 200 cubic metre of soil for determining P.I. shall be conducted.

1.1.10 Stones

These shall be clean, hard, sound and durable stones, free from decay and weathering, They shall be in blocks and hammer dressed on all sides. The size of pitching stones shall be approximately 22.5 cm in depth and not less than 15cm in any other direction.

1.1.11 Stone Chipping for Surface Dressing/Painting

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The stone chipping shall consist of fairly cubical fragment of clean, hard, tough and durable rock of uniform quality throughout. These shall be obtained by crushing stone river gravel (shingle) or other approved materials. Rounded gravel shall be used only if specifically permitted by the Engineer-in-charge. The chipping shall be free of elongated or flaky pieces, soft or disintegrated stone, salt, alkali, vegetable matter, dust and adherent coatings. They shall conform to the quality requirements of Table 1.5.

However, the total quantity of such deleterious material including clay lumps, soft fragments, foreign material shall not exceed 5% of the weight of the aggregate.

The aggregate shall be got tested to ensure the requirements specified in Table 1.5.

TABLE 1.5
PHYSICAL REQUIREMENTS OF AGGREGATES FOR SURFACE DRESSING / ASPHALTIC CONCRETE

Sl.No.	Test	Test method	Requirements
1.	Los Angeles Abrasion Value	IS:2386 (Pt.IV)	40% max
2.	Aggregate Impact Value*	IS:2386 (Pt.IV)	30% max
3.	Flakiness Index	IS:2386 (Pt.I)	25% max
4.	Stripping Value	Vide method given in appendix	25% max
5.	Water Absorption	IS:2386 (Pt.III)	1% max

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

1.2 Supplying and Stacking of Materials

1.2.1 Aggregates / Red Bajri

1.2.1.0 The item of work shall specify stone aggregate / Red bajri, as the case may be.

1.2.1.1 Stacking : Ground where stacks are proposed to be made shall be cleared, leveled or dressed to a uniform slope and all lumps, depressions etc., shall be removed. The rate stacked metal shall be free from vegetation and other foreign matter. Coarse aggregates stack shall be made at places as directed by the Engineer-in-charge. All rejected stone metal shall be removed from the site.

The aggregates shall be stacked in convenient units of one metre top width, 2.2m bottom width, .60cm height and of length in multiples of 3m for new roads. Where berm width is limited or for repair works it shall be stacked in units of 40cm top width 1.4m bottom width, 50cm height and length in multiples of 3m. Template of steel shall be used for making the stacks and shall always be kept at site for check measurements. The Engineer-in-charge may permit stacking in different sizes and height ranging between 45 to 75cm for new roads and 40 to 60cm for repair work, in case the site conditions so demand, in a particular reach of road as decided by the Engineer-in-charge, the quantity of stacked material shall be comparable to the theoretical quantity required for W.B.M. to be laid in the reach.

The stacks shall be uniformly distributed along the roads and shall be numbered serially. The number plate shall be planted on each stack, which shall remain in position until the stack is used in the work. A register showing daily consumption of stacks shall be maintained at site of work. The collection

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of stone metal shall be for completed length of one km (for each layer of W.B. Macadam) or as directed by the Engineer-in-charge in writing,

1.2.1.2 Measurements: Length, breadth and height shall be measured correct to a cm. The total quantity so arrived shall be reduced by 7.5% to arrive at the net quantity for payment, in case of aggregates. NO such reduction shall be made in case of fine aggregate i.e. Red bajri & screening etc., as defined under Clause 1.1.2

1.2.2 Binder

1.2.2.1 Stacking: Specified binder shall be brought to the site of work in the sealed original containers. Binder brought in damaged containers shall not be allowed. The material shall be stacked in fenced enclosures, as directed by the Engineer-in-charge, on one side of the roadway. The material shall be purchased from reputed firms or their authorised dealer. All the drums brought to site shall be serially numbered and used in the same order. The materials shall be brought in at a time in adequate quantities to suffice for the whole work or for at least a fortnight's work.

For major bituminous road works, supply of bitumen in bulk may be taken for economical reasons, or if the contingencies of the work so require. Sufficient storage arrangement shall be made at site for at least ten days requirement.

Materials shall be kept in the joint custody of the contractor and the representative of the Engineer-in-charge. The empty containers shall not be removed from the site of work, till the relevant item of work has been completed and permission obtained from the Engineer-in-charge. A few drums may be removed before completion of work for heating bitumen and mixing aggregate etc., with the permission to the Engineer-in-charge.

1.2.2.2 Measurement: The materials shall be recorded as per standard weights of different type of container as intimated by manufacturers. The material shall be weighed where containers are found leaking.

1.2.3 Moorum / Stone Chipping:

1.2.3.0 The item of work shall specify moorum / stone chipping, as the case may be.

1.2.3.1 Stacking: Ground where stacks are proposed to be made, shall be dressed to a uniform slope and all lumps, depressions etc., shall be removed. Sample of moorum shall be got approved from the Engineer-in-charge, before the material in bulk is brought to site.

Moorum shall be stacked in convenient units of one cubic metre in between aggregate stacks in each length of 100m as per requirement. The stacks shall be made with wooden boxes open at both ends and of 2 x 2 x 0.25m dimensions. These shall always be kept at site for stacking and check measurement.

The stacks shall be uniformly distributed along the road. The supply of moorum shall be completed for the entire work or for a complete length of one km as directed by the Engineer-in-charge in writing.

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1.2.3.2 Measurements: Length and breadth of boxes shall be measured correct to a cm. Volume shall be calculated in cubic metres, correct to two places of decimal.

1.3 Water Bound Macadam with Stone Aggregate (of size 90mm to 45mm)

1.3.1 Quantities of Materials: Quantities of coarse aggregate, screening and binding material required to be stacked for 100mm approximate compacted thickness of W.B.M. sub-base course for 10 Sq.m. shall be Tab 1.6.

TABLE 1.6

Coarse Aggregate			Stone screening	Binding Material	
Classification	Size range	Net Quantities	Grading / Classification and size	Quantity	
Grading I	90mm to 45mm	1.21 Cum to 1.28 Cum	Type A 13.22mm	0.27 Cum to 0.30 Cum	0.08 Cum to 0.10 Cum

Note:- Net quantity = Loose quantity measured in stacks minus 7.5%.

1.3.2 Preparation of Foundation: In the case of an existing unsurfaced road, where new material is to be laid, the surface shall be scarified and reshaped to the required grade, camber and shape as necessary. Weak places shall be strengthened, corrugations removed and depressions and pot holes made good with suitable materials, before spreading the aggregate for W.B.M.

Where the existing surface over which the sub base of W.B.M. is to be laid is black topped, to ensure effective internal drainage, furrows 50mm x 50mm (depth of furrows increased to reach bottom of bituminous layer where necessary) at one metre intervals shall be cut in the existing bituminous surface at 45 degree C to the central line of the carriage way before the W.B.M. is laid.

1.3.3 Provision of lateral confinement of aggregates: Before starting with W.B.M. construction, necessary arrangements shall be made for lateral confinement of aggregates. One method is to construct side shoulders in advance to a compacted layer of the W.B.M coarse. Inside edges may be trimmed vertical and the included area cleaned off all spilled materials thereby setting the stage for spreading the coarse aggregate.

The practice of laying W.B.M. after excavating a trench section in the finished formation must be completely avoided.

1.3.4 Spreading Aggregate: The coarse aggregate shall be spread uniformly and evenly upon the prepared base in required quantities with a twisting motion to avoid segregation. In no case shall these be dumped in heaps directly on the area where these are to be laid nor shall their hauling over a partly

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completed base be permitted. The aggregates shall be spread uniformly to proper profile by using templates placed across the road six metres apart. Where specified, approved mechanical devices may be used to spread the aggregates uniformly. The levels along the longitudinal direction upto which the metal shall be laid, shall be first obtained at site to the satisfaction of Engineer-in-charge, and these shall be adhered to.

The surface of the aggregate spread shall be carefully trued up and all high or low spots remedied by removing or adding aggregates as may be required.

The W.B.M. sub-base shall be normally constructed in layer of 100mm compacted thickness. No segregation of large or fine particles shall be allowed and the coarse aggregate as spread shall be of uniform gradation with no pockets of fine material.

The coarse aggregate shall normally not be spread in lengths exceeding three days average work ahead of the rolling and blending of the proceeding section.

1.3.5 Rolling: Immediately following at spreading of the coarse aggregate, it shall be compacted to the full width by rolling with either the three-wheel-power-roller of 8 to 10 tonnes capacity or an equivalent vibratory roller. Initially, light rolling is to be done, which shall be discontinued when the aggregate is partially compacted with sufficient void space in them to permit application of screenings.

The rolling shall begin from the edges with the roller running forward and backward and adding the screenings simultaneously until the edges have been firmly compacted. The roller shall then progress gradually from the edges to the centre, parallel to the centre line of the road and overlapping uniformly each preceding rear wheel track by one half width and shall continue until the entire area of the course has been rolled by the rear wheel. Rolling shall continue until the road metal is thoroughly keyed with no creeping of metal ahead of the roller. Only slight sprinkling of water may be done during rolling, if required. On super elevated curves, the rolling shall proceed from the lower edge and progress gradually continuing towards the upper edge of the pavement.

Rolling shall not be done when the sub-grade is soft or yielding or when the rolling causes a wave like motion in the sub-base or sub-grade. When rolling develops irregularities that exceed 12mm when tested with a three metre straight edge, the irregular surface shall be loosened and then aggregate added to or removed from it as required and the area rolled until it gives a uniform surface conforming to the desired cross-section and grade. The surface shall also be checked transversely by template for camber and any irregularities corrected in the manner described above. In no case shall the use of screenings to make up depressions be permitted.

1.3.6 Application of Screenings: After the coarse aggregate has been lightly rolled to the required true surface, screenings shall be applied gradually over the surface to completely fill the interstices. Dry rolling shall be continued while the screenings are being spread so that the jarring effect of the roller causes them to settle into the voids of the coarse aggregates. The screenings shall not be dumped in piles on the coarse aggregate but shall be spread uniformly in successive thin layers either by the spreading motion of the hand, shovels or a mechanical spreader.

The screenings shall be applied at a slow rate (in three or more applications) so as to ensure filling of all voids. Rolling and brooming shall continue with the spreading of the screenings. Either mechanical brooms or hand brooms or both may be used. In no case shall the screenings be applied, so

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fast and thick as to form cakes, ridges on the surface making the filling of voids difficult, or to prevent the direct bearing of the roller on the coarse aggregates. The spreading, rolling and brooming of screenings shall be performed on sections which can be completed within one day's operation and shall continue until no more screenings can be forced into the voids of the coarse aggregate. Damp and wet screenings shall not be used under any circumstances.

1.3.7 Sprinkling and Grouting: After spreading the screening and rolling the surface shall be copiously sprinkled with water, swept and rolled. Hand brooms shall be used to sweep the wet screening into the voids and to distribute them evenly. The sprinkling, sweeping and rolling operations shall be continued and additional screenings applied where necessary until the coarse aggregate are well bonded and firmly set for the entire depth and until a grout has been formed of screenings and water that will fill all voids and form a wave of grout ahead of the wheels of the roller. The quantity of water to be used during the construction shall not be excessive so as to cause damage to the sub-base or sub-grade.

1.3.8 Application of Binding Material: After the application of screenings and rolling, a suitable binding material shall be applied at a uniform and slow rate in two or more successive thin layers. After each application of binding material, the surface shall be copiously sprinkled with water and the resulting slurry swept in with hand brooms or mechanical brooms or both so as to fill the voids properly.

The surface shall then be rolled by a 8 – 10 tonne roller, water being applied to the wheels in order to wash down the binding material that may get stuck to the wheels. The spreading of binding material, sprinkling of water, sweeping with brooms and rolling shall continue until the slurry that is formed will, after filling the voids form a wave ahead of wheels of the moving roller.

1.3.9 Setting and Drying: After final compaction of the course, the road shall be allowed to cure overnight. Next morning defective spots shall be filled with screenings or binding material. Lightly sprinkled with water, if necessary and rolled. No traffic shall be allowed till the macadam sets.

1.3.10 Surface Evenness: The surface evenness of completed W,B,M, sub-base in the longitudinal and transverse directions shall be as specified in Table 1.7.

Table 1.7

Size of coarse aggregate	Longitudinal profile measured with a 3m straight edge			Cross Profile
	Maximum permissible	Max. No. of Undulations permitted in any 300m length exceeding		Max.permissible undulation when measured with a camber template
		12mm	10mm	
90-45mm	15mm	30	--	12mm

The longitudinal profile shall be checked using 3m long straight edge and graduated wedge at the middle of each traffic lane along a line parallel to the centre line of the road. The transverse profile shall be checked with adjustable template at intervals of 10metres.

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1.3.11 Rectification of Defective Construction: Where the surface irregularity of the W.B.M. sub-base course exceeds the tolerances specified in Table 1.7 or where the course is otherwise defective due to sub grade soil mixing with the aggregates, the layer to its full thickness shall be scarified over the attached area, reshaped with added material or removal and replaced with fresh materials as applicable, and recomputed. The area treated in the aforesaid manner shall not be less than 10 Sq.m. In no case shall depressions be filled up with screenings and binding materials.

1.3.12 Measurement: The length and breadth shall be taken to the nearest centimeter. The depth of consolidated layer shall be computed to nearest half centimeter by taking average of depths at the centre and at 30cm from the left and right edges at a cross section taken at 100 metre interval or less as decided by the Engineer-in-charge by making small pits. The consolidated cubical contents calculated in cubic metres correct to two places of decimal. The cubical contents for each 100 metre length should be compared with the volume of aggregate collected less 7.5% .

1.4 Bases

1.4.0 The base course may consist of any one of the following (of size 63mm – 45mm or 53mm – 22.4 mm)

(a) Water Bound Macadam with Stone Aggregate: The stone aggregate of size 63mm to 45mm or 53mm to 22.4mm as specified shall be used. This is standard type of base course used in road work. In important roads such as national Highways and City Roads, this may form the lower part of the base course overlaid by a bitumen bound base.

(b) Water Bound Macadam Surfacing / Wearing Course with Stone Aggregate: Water Bound Macadam when laid as a surfacing / wearing course needs timely and constant maintenance. This will include patching pot holes, removal of ruts and blinding of surface with blinding material. This course is generally used only in roads of temporary nature.

1.4.1 Water Bound Macadam (Base or Surfacing coarse)

1.4.1.1 Quantities of Materials: (Quantities of coarse aggregates and screenings required to be stacked for 75mm (approximate) compacted thickness of W.B.M. base courses for 10 Sq.m. shall be as specified in Table 1.8

Table 1.8

Coarse Aggregate			Stone screening		
Classification	Size range	Net Quantity	Gradings/ classification & size	For W.B.M. base course	For W.B.M. surface course
Grading 2	63-45mm	0.91 cum to 0.96 cum	Type A 13.2mm	0.12 cum to 0.15 cum	0.10 cum to 0.12 cum
Do	63-45mm	0.91 cum to 0.96 cum	Type B 11.2mm	0.20 cum to 0.22 cum	0.16 cum to 0.18 cum

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Grading 3	53-22.4mm	0.91 cum to 0.96 cum	Type B 11.2mm	0.18 cum to 0.21 cum	0.14 cum to 0.17 cum
<p>The quantity of binding material required for 75mm (approximate) compacted thickness will be 0.09 cum / 10 sqm in the case of W.B.M. base course and 0.13 cum / 10 sqm when the W.B.M. is to function as a surface course.</p> <p>* Net quantity means: The quantity of metal measured in stacks and reduced by 7.5%</p>					

1.4.1.2 Preparation of foundation: Shall be specified in 1.3.2.

1.4.1.3 Spreading coarse aggregate shall be as specified in 1.3.4 except that the W.B.M. base course shall be normally constructed in layers of not more than 75mm compacted thickness.

1.4.1.4 Rolling: Application of Screening, Sprinkling and grouting and application of blending material shall be as specified under 1.3.5 to 1.3.8.

1.4.1.5 Setting and Drying: After final compaction of the course, the road shall be allowed to cure overnight. The next morning, defective spots shall be filled with screenings or binding material, lightly sprinkled with water, if necessary and rolled. No traffic shall be allowed till the macadam sets.

1.4.1.6 Surface Evenness: The surface evenness of completed W.B.M. courses in the longitudinal and transverse directions shall be within the tolerance specified in Table 1.9.

TABLE 1.9

Size of coarse aggregate	Longitudinal profile measured with a 3 metre straight edge.			Cross profile
	Max. permissible undulations	Max. No. of undulations permitted in any 300 metre length exceeding		Max. permissible undulation when measured with a camber template
		12mm	10mm	
63-45 mm and 53-22.4 mm	12 mm	--	30	8 mm

The longitudinal profile shall be checked with a three metre long straight edge and graduated wedge at the middle of each traffic lane along a line parallel to the centre line of the road. The transverse profile shall be checked with adjustable templates at intervals of 10 metres

1.5 Surface Course

1.5.0 The main functions of surface course are :

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- (a) To provide a dust free wearing course over base course such as water-bound macadam, or bitumen macadam.
- (b) To provide water-proof surface.
- (c) To protect water-bound macadam by preventing removal of binder between aggregate pieces.
- (d) To prevent disintegration of an old bitumen surface.
- (e) To provide a non-skid riding surface. This type of treatment is normally done for roads with medium density, rubber tyred traffic.

The surface course may consist of any one of the following:

- (a) Surface dressing using hot bitumen Two coats
- (b) Surface dressing on new surface with hot bitumen One coat
- (c) Surface dressing on old surface with hot bitumen One coat
- (d) Surface dressing on new surface with bitumen emulsion One coat
- (e) Surface dressing on old surface with bitumen emulsion One coat
- (f) Premix carpet with hot bitumen
- (g) Premix carpet with bitumen emulsion
- (h) Bituminous Macadam using hot-mix plant and paver equipment

1.5.1 Surface Dressing using Hot Bitumen – Two Coats

1.5.1.0 This consists of the application of two coats of surface dressing each coat consisting of a layer of bituminous binder sprayed on a base prepared previously, followed by a cover of stone chippings properly rolled to form a wearing course. The existing water-bound macadam, kankar or gravel surface shall be rolled to form a wearing course. The existing water-bound macadam, kankar or gravel surface shall be cleaned thoroughly before application of bituminous binder. The work shall be carried out only when the atmospheric temperature in shade is 16 deg. C or above. No bituminous material shall normally be applied when the road surface or materials is damp, when the weather is foggy or rainy, or during dust storms.

1.5.1.1 Materials: Binder shall be as specified and shall conform to Table 1.10 and stone chippings shall confirm to grading as the Table 1.10. Unless otherwise specified or directed by the Engineer-in-charge the quantities of materials shall be as specified in Table 1.10. A proper record will be kept to ensure that the daily out-turn of work is co-related with the quantity of bitumen used.

TABLE 1.10

	Stone Chipping			Bitumen Quantity
	Nominal Size	Specification	Quantity	
First coat	13.2mm	100 percent passing through IS:22.4mm square mesh and retained on IS: 11.2mm square mesh	1.5 cum/ 100 sqm	1.8 kgm per sqm
Second coat	11.2mm	100 percent passing through 13.2mm square mesh and retained on 5.6mm square mesh	1.0 cum/ 100 sqm	1.1 kgm per sqm

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1.5.1.2 First Coat:

(a) Preparation of Surface:

Repairs: 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 removal of all loose and defective material by cutting in rectangular patches and replacement with suitable materials.

For the purpose of repairs the area of pot holes shall be taken upto 0.75 sqm and depth upto 5cm. All pot holes, patches and ruts upto 2.5cm deep shall be repaired and brought to level with premix as specified in 1.5.7 and properly consolidated while those of depths greater than 2.5cm shall be repaired with similar specifications as adopted originally.

Cleaning: Prior to the application of the binder, all dust, dirt, caked mud, animal dung, loose and foreign material etc., shall be removed 30cm on either side, beyond the full width to be treated, by means of mechanical sweepers and blowers, if available or otherwise with wire brushes, small picks, brooms etc. The material so removed shall be disposed off as directed by the Engineer-in-charge.

For a water bound macadam surface, the interstices between the road metal shall be exposed upto a depth of about 10mm by means of wire brushes. The surface shall then be brushed with soft brooms to remove all loose aggregate. Finally the traces of fine dust which get accumulated while brushing shall be thoroughly removed from the surface by blowing with gunny bags.

The prepared surface shall be closed to traffic and maintained fully clean till the binder is applied.

(b) Applying Binder (hot bitumen)

The binder shall be heated in a boiler to a temperature as specified under 1.1.4 for the grade used and maintained at the temperature, the use of a thermometer being essential.

The binder shall be applied evenly to the clean dry surface by means of a pressure sprayer at the rate specified. The binder shall be applied longitudinally along the length of the road and never across it. The edges of the binder surface shall be defined by wire or a rope stretched in position.

Heating in cut out drums and pouring from perforated tins, cans and such other methods shall not be permitted. Except in the case of petty works and repairs with the specific approval of the Engineer-in-charge.

Excessive deposits of binder caused by stopping or starting of the sprayer or through leakage or any other reason shall be suitably corrected before the stone chippings are spread.

(c) Blinding or Spreading Stone Chippings

Immediately after the binder is applied and while it is still hot, stone chippings free from dust and in a dry and clean state shall be spread evenly over the surface at the rate specified above. Spreading shall be done preferably by means of a mechanical gritter, otherwise manually with a twisting motion to avoid segregation which otherwise shall have to be removed by brushing the excess stone chippings over the surface into hungry spots to obtain a uniform surface, free from waviness, depressions and other irregularities. The surface shall be checked by means of a camber board laid across the road and a three

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metre straight edge laid parallel to the centre line of the road, and undulations if any shall be corrected by addition or removal of blindage till a surface free from undulation is obtained.

If a uniform surface is assured at this stage the completed surface should be normally free from undulations and unevenness.

(d) Consolidation of Blindage

Immediately following the application of the stone chipping and light brooming, the road surface shall be compacted by a power roller of 6 to 8 tonnes, starting at edges and working towards the centre (or to the outside edge in case of super elevated curve). Each pass of the roller shall uniformly overlap not less than one third of the track made in preceding pass. The roller shall be worked or started and stopped without jerks and shall not be stopped or reversed each time at the same location to cause displacement of stone and other irregularities, Consolidation shall be considered complete when the stone chippings are firmly embedded.

Generally five to six trips shall be made thorough compaction of the surface or as may be specified by the Engineer-in-Charge.

Along kerbs, manholes and all places not accessible to the roller, compaction shall be secured by means of steel rammers or hand rollers.

1.5.1.3 Second Coat:

(a) Cleaning the road surface

The surface shall be examined and any loose material and foreign matter shall be removed by brooming or blowing off by fanning with gunny bags, care being taken not to loosen the blindage already set.

(b) Applying binder (hot Bitumen)

The second coat of binder shall be applied immediately after the blinding has been set and the surface has been cleaned. The binder shall be applied at the specified rate in the manner specified for the first coat (1.5.1.2 b)

(c) Blinding of spreading stone chippings

Immediately after the second application of binder, the stone chippings shall be spread at the specified rate in the manner described in 1.5.1.2 c.

(d) Consolidation of blindage

The specifications described in 1.5.1.2 (d) shall apply. Further the prepared finished surface shall be protected from traffic for 24 hours or such period as may be specified by the Engineer-in-charge.

1.5.1.4 Surface Finishing: The finished surface shall be uniform and conform to the lines, grades and typical cross-sections shown in the drawings.

1.5.1.5 The finished surface shall be thrown open to traffic on the following day. Controlling traffic shall be done by suitable methods like barricading, posting of watchman etc.

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1.5.1.6 Measurements: The length and width of the finished work shall be measured correct to a cm along the finished surface of the road. The area shall be calculated in square metre, correct to two places of decimal.

For record purposes, the measurement for binder and stone chippings shall be taken as specified in 1.2.2 and 1.2.3 before they are actually used on the work. Premasurements of materials taken for record purposes shall simply serve as a guide and shall not form the basis for payment.

1.5.1.7 Rate: The rate shall include the cost of materials and labour involved in all the operations described above, except for requires described under 1.5.1.2 (a)

1.5.2 Surface Dressing on New Surface with Hot Bitumen One Coat

1.5.2.0 This type of treatment shall consist of cleaning the existing water bound macadam kankar or gravel surfaces, and applying one coat of hot bitumen on the prepared base, blinding it with stone chippings of 12.5mm nominal size and consolidation with a road roller. This type of treatment is normally done for a road with light density rubber tyred traffic and roads for temporary construction. This treatment is also done on existing water bound macadam before applying the final surface treatment. In the latter case, after applying a coat of painting the roads is thrown open to traffic till the road is consolidated. The final treatment is then given after making good the undulations etc., in the road surface.

1.5.2.1 Preparation of Surface (Repairs and Cleaning) shall be specified under 1.5.1.2 (a).

1.5.2.2 Applying binder, blinding, consolidation, surface finishing, measurements and rates shall be as specified under 1.5.1 except that binder shall be applied at the rate of 2.25 kg per sqm and stone chippings of size 13.2mm at 1.65 cum per 100 Sqm unless otherwise specified.

1.5.3 Surface Dressing on Old Surface with Hot Bitumen One Coat

1.5.3.0 This treatment consists of cleaning old painted surfaces and applying a coat of hot bitumen on the prepared base, blinding with stone chippings and consolidation with road roller.

1.5.3.1 Materials: Binder shall be as specified and conform to 1.1.4 , stone chipping shall conform to grading given in Table 1.10 for 11.2mm. Unless otherwise specified or directed by the Engineer-in-charge stone chippings of 11.2mm nominal size shall be used @ 1.5 cum 100 sqm area and bitumen @ 1.95 kg per square metre area. A proper record shall be kept to ensure that the daily out turn of work is co-related with the quantity of bitumen used.

1.5.3.2 Preparation of Surface (Repairs and cleaning) shall be as purified under 1.5.1.2(a).

1.5.3.3 Applying binder, Blinding, Consolidation, Surface Finishing, Measurement and Rate shall be as specified under 1.5.1 except that the binder and chippings shall be applied at the specified rate.

1.5.4 Surface Dressing on New Surface with Bitumen Emulsion – One Coat

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1.5.4.0 This treatment consists of cleaning the existing water bound macadam, kankar gravel or stabilised base and other black top surfaces, applying a coat of bitumen emulsion at atmospheric temperature, blinding it with stone chippings including consolidation with a road roller. This type of treatment is normally applied under damp conditions and for minor repair works during rainy season for roads with medium density, rubber tyred traffic such as service roads. This treatment is also done on existing water bound macadam before applying the final surface treatment. In the latter case, the road is consolidated. The final treatment is then given after making good the undulations depressions etc., in the road surface.

1.5.4.1 Materials: Binder shall be specified and shall conform to RS grade IS:8837. Stone chipping of 13.2mm size shall conform to Table 1.10. Unless otherwise specified or directed by the Engineer-in-charge 13.2mm stone chippings shall be used @ 1.5 cum per 100 sqm area and bitumen @ 1.95 kg/sq.m. area. A proper record shall be kept to ensure that the daily out turn of work is correlated with the quantity of bitumen used.

1.5.4.2 Preparation of Surface: The specification described in 1.5.1.2 (a) shall apply except that the binder used for patch repairs etc. shall be bitumen emulsion.

1.5.4.3 Applying Binder: The specification described in 1.5.1.2(b) shall apply except that bitumen emulsion is not heated in boilers but it shall be spread at atmospheric temperature at the specified rate. In case the road surface is very dry the surface shall be very lightly sprinkled with water just before applying the binder.

1.5.4.4 Blinding including consolidation, Measurements and Rate shall be as specified under 1.5.1 except that the stone chippings shall be spread at the specified rate immediately after the bitumen emulsion on application breaks i.e. changes colour from brown to black.

1.5.5 Surface Dressing on Old Surface with Bitumen Emulsion – One Coat.

1.5.5.0 This treatment consists of cleaning old painted surfaces and applying a coat of bitumen emulsion on the prepared base, blinding with stone chippings and consolidation with a road roller. This type of treatment is normally done under damp conditions.

1.5.5.1 Materials: Binder shall be as specified and shall conform to RS grade IS:8837. unless otherwise specified or directed by the Engineer-in-charge 11.2mm stone chippings shall be used @ 1.10cum per 100 sqm area and bitumen @ 1.22kg per sqm area. A proper record shall be kept to ensure that the daily out turn of work is correlated with the quantity of bitumen used.

1.5.5.2 Preparation of surface shall be as specified in 1.5.1 except that the binder used for patch repairs etc. shall be bitumen emulsion.

1.5.5.3 Applying binder, bitumen emulsion, blinding or Spreading to it including consolidation of blindage, measurement etc. shall be as specified under 1.5.1 except for preparation of surface and that the binder and stone chippings shall be used at the rates prescribed in 1.5.5.1.

1.5.6 Tack coat of hot straight run bitumen

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1.5.6.0 The rate of application of binder which shall be as specified and which shall conform to 1.1.5 shall depend on the surface on which the premix carpet is to be laid.

- (a) 0.75 kg/sqm on W.B.M surface.
- (b) 0.50 kg/sqm on existing black topped surface.

1.5.6.1 Materials:

Bitumen: This shall be straight-run bitumen of penetration value 80/100 conforming to IS:73 Specifications.

1.5.6.2 Preparation of surface:

1.5.6.3 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 blows, 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.

1.5.6.4 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 16 deg. C or below.

1.5.6.5 Application of Tack Coat:

1.5.6.5.1 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.

1.5.6.5.2 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 be 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.

1.5.6.6 Measurements: Length and breadth shall be measured correct to a cm, along and surface of pavement. Area shall be worked out in sqm correct to two places of decimal.

1.5.6.7 Rate: Rate shall include the cost of all materials and labour involved in all the operations described above.

1.5.7.0 Premix carpet with hot bitumen: This type of treatment is normally applied on roads where the motor traffic is of medium intensity, but bullock cart traffic is fairly heavy. This treatment is suitable for district roads and for internal and service road in colonies. The consolidated thickness of this type of treatment shall be 2cm or 2.5cm as specified. This treatment consists of applying a tack coat on the prepared base followed immediately by spreading aggregates precoated with specified binder to camber and consolidated. Premix carpet shall not be laid during rainy weather or when the base course is damp or wet or when the atmospheric temperature in the shade is 16 deg. C or below:

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1.5.7.1 Preparation of Surface: This shall be done as described in 1.5.1

1.5.7.2 Materials: Quantities of Binder, stone chipping and grading of stone chipping shall be as per Table 1.11. Binder shall be as specified and shall conform to Table 1.11. Stone chippings shall conform to grading as per Table 1.11. Quantities of materials shall be as given in Table 1.11. A proper record shall be kept to ensure that the daily out turn of work is correlated with the quantity of bitumen.

TABLE 1.11

Consolidated thickness of premix carpet	Binder hot bitumen	Stone chippings (in cum/100 Sq.m).	
	Carpet	13.2mm size	11.2mm size
2.00 cm	52 kg/cum of 1.32mm size and 56 kg per cum of 11.2mm	1.8	0.90
2.50 cm	-do-	2.25	1.12

1.5.7.3 Tack coat: The rate of application of binder for tack coat shall be as specified. The rate will be depending upon the surface on which the premix carpet is to be laid i.e. water bound macadam surface or existing black topped surface. Tack coat shall be applied as described in 1.5.6.

1.5.7.4 Preparation of Premix: The aggregate shall be dry and suitably heated to temperature as directed by Engineer-in-charge before these are placed in the mixer to facilitate mixing with the binder. 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-charge, in boiler 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 Engineer-in-charge 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 chippings 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 cleaned and be covered over in transit if so directed.

1.5.7.5 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 has been laid, rolling shall commence with 6 to 9 tonne power rollers, preferably of smooth wheel tandem type, or other approved plant. Rolling shall begin at the edges and progress towards the centre longitudinally. Except on the super elevated portions rolling shall progress from the lower to upper edge. Parallel to the centre line of the pavement. The consolidated thickness shall in no place be less than the specified thickness by more than 25%. However, the average thickness shall not be less than that specified in the item).

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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. Polling shall then be continued until the entire surface has been rolled to compaction and all the roller marks 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 get deformed thereby.

The edges along the 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 appropriate binder before the new mix is placed against it.

Further, the prepared finished surface shall be protected from traffic for 24 hours or such period as may be specified by the Engineer-in-charge.

1.5.7.6 Surface Finishing: The surface regularity both in longitudinal and transverse directions shall be within the tolerances specified in Table 1.12

TABLE 1.12

Longitudinal profile	Cross profile
Max. permissible undulation when measured with 3M straight edge	Max. permissible variation from specified profile when measured with a camber template
10mm	6mm
The longitudinal profile shall be checked during rolling with a three metres long straight edge and graduated wedge at the middle of each traffic lane along the road. Similarly the transverse profile shall be checked with adjustable templates at intervals of 10 metres.	

1.5.7.7 Rectification: Where the surface irregularity fall outside the specified tolerances the contractor shall be liable to rectify it to the satisfaction of Engineer-in-charge by adding fresh material and re-compacting to specifications where the surface is low. Where the surface is high the full depth of the layer shall be removed and replaced with fresh material and compacted to specifications.

1.5.7.8 Measurements: The length and width of he finished work shall be measured correct to a cm along the finished surface of the road. The area shall be calculated in square metre, correct to two places of decimal.

For record purposes, the measurement for binder and stone chippings shall be taken as specified in 1.2.2 and 1.2.3 before they are actually used on the work. Premeasurements of the materials taken for record purposes shall simply serve as a guide and shall not form the basis for payment.

1.5.7.9 Rate : The rate shall include the cost of materials and labour involved in all the operations described above for the particular item, except for the cost of "Repairs described under para 1.5.1.2(a)".

1.5.8 Premix Carpet with Bitumen Emulsion

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1.5.8.0 This type of work is not ordinarily recommended but may be done in case of urgent repairs under damp conditions.

1.5.8.1. Materials: Binder shall be as specified and shall conform to RS grade IS: 8837 grading of 11.2mm stone chipping shall be as per Table 1.12. Quantities of bitumen emulsion and stone chippings shall be as specified in Table 1.13. A proper record shall be kept to ensure that the daily out turn of works is correlated with the quantity of bitumen used.

TABLE 1.13

Consolidated thickness of premix carpet	Bitumen Emulsion	Stone Chippings
	For Carpet in cum of chippings	Cum per 100 sqm
2 cm	96	2.4 (11.2mm nominal size)
2.5cm	96	3.0 (11.2mm nominal size)

1.5.8.2. Preparation of surface and binder application shall be as specified under 17.5.4 except that the rate of application of bitumen for tack coat shall be 0.75 kg per sqm on water bound macadam surface and 0.5 kg per sqm on black topped surface.

1.5.8.3. Preparation, spreading, consolidating mix, surface finishing, measurements and rate shall be as specified under 1.5.7 except that the bitumen emulsion shall not be heated but it shall be poured over the aggregate at atmospheric temperature at the correct rate before spreading on the road surface, the rolling shall commence 24 hours after spreading the mixture. The surface shall be protected by a suitable device such as barricading and posting of watchmen for closing the traffic.

1.5.9.0 Bituminous Macadam using hot mix Plant and Paver Equipment

1.5.9.1 General: This shall consist of construction of a single or more courses of compacted crushed aggregates premixed with bitumen laid immediately after application of the tack coat. The thickness of single compacted course shall not exceed 75 mm.

1.5.9.2 Materials :

1.5.9.2.1 Aggregates

(a) These shall be crushed or broken from hard stones obtained from approved quarry. These shall be clean, strong, durable of fairly cubical shape and free from disintegrated soft, friable, thin, elongated or laminated pieces. These shall also be free from dirt, organic, deleterious and any other foreign matter and adherent coatings. These shall conform to the physical requirements laid down in Table 1.5 under this item.

(b) Grading: Aggregates shall conform to grading specified in Table 1.14

TABLE 1.14

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Sieve Designation (IS: 460)	Percentage of wt. Passing the sieve	
	For 75 mm compacted thickness	For 50 mm compacted thickness
63mm	100	--
53mm	95 – 100	100
45mm	50 – 90	90 – 100
26.5mm	30 – 45	60 – 95
22.4mm	--	--
13.2mm	10 – 25	15 – 35
11.2mm	--	--
5.6mm	--	--
2.8MM	--	--
90 microns	0 – 5	0 – 5

1.5.9.2.2 Bitumen : it shall be straight run bitumen of penetration value 80/100 conforming to IS : 73.

1.5.9.3 Mixing :

1.5.9.3.1 Weather & Seasonal limitations : Bitumen macadam shall not be laid during rainy weather or when the surface is damp or wet or when the temperature is less than 16 deg. C under shade.

1.5.9.4 Plant : A hot mix Plant of adequate capacity not less than 30 tonne per hr. Capacity and capable of producing a proper and uniform quality mix shall be used for preparing the mix. The plant may be either a batch type or a continuous one, having a co-ordinated set of essential units such as a drier for heating the aggregates, device for batching/ feeding by weight or volume the required quantities of aggregate, a binder heating and control unit for metering out the correct quantity of heated binder together with a mechanical mixer for thorough mixing of the binder and aggregates.

1.5.9.5 Temperature: The temperature of the binder at the time of mixing shall be in the range of 150 deg. C – 177 deg. C and of aggregates in the range of 155 deg. C – 163 deg. C. At no time, however, shall the difference in temperature between the aggregates and the binder exceed 14 deg. C. At no time shall bitumen of aggregates be over heated.

1.5.9.6 The hot graded aggregates and bitumen shall be measured separately and as accurately as practicable, to the proportion in which they are to be mixed. Mixing shall be done thoroughly so that a homogeneous mixture is obtained in which all the particles are uniformly coated.

If feasible, a suitable site as approved by the Engineer-in-charge near the works site for the mixer and for the storage of materials shall be provided free of rent to the contractor. No claim whatsoever on this account shall be entertained by the Department.

1.5.9.7 Transporting Mixed Materials:

1.5.9.7.1 The mixed materials shall be transported from mixing plant to the point of use in clean vehicles. Every precaution shall be taken to avoid segregation of mixed materials and to ensure that they do not become contaminated with dust or foreign matter. In order to maintain satisfactory temperature of materials in transit, particularly in cold weather, and to prevent undue loss of heat, adequate precautions

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shall be taken by covering the materials to ensure that the materials are properly protected during transportation. The temperature of the mix in every transporting vehicle shall be checked immediately prior to discharge into the spreader. If the temperature of any batch is below the laying temperature specified in para 1.5.9.8.1 the mix shall be rejected and shall be removed from site immediately.

1.5.9.8 Laying:

1.5.9.8.1 The mix transported from the hot mix plant to the site shall be spread by means of a self propelled mechanical paver with suitable screeds capable of spreading, tamping and finishing the mixture to specified width and profile without causing segregation, dragging, burning, irregularities or other surface defects. The paver shall be capable of being operated at spread consistent with the character of the mix and the thickness of the course being laid, so as to produce a surface having a uniform density and surface texture. Where not operated on side forms, the spreader shall employ equalizing runners, eveners or other devices to adjust the profile and confine the edges of the course to true lines. The temperature of the mix at the time of laying shall be in the range of 110 deg. C to 135 deg. C

1.5.9.8.2 Hand spreading is prohibited.

1.5.9.9 Rolling:

1.5.9.9.1 After spreading of the mix consolidation shall be done by an approved power driven roller or rollers weighing not less than 8/10 tonnes each. Rolling shall start as soon as possible after the material has been spread. Rolling shall be done with care to keep from unduly roughening of the pavement surface. Rolling shall start longitudinally at the sides and proceed towards the centre of the pavement, over lapping on each successive trip by at least one half the width of a rear wheel. End stop channel boards may have to be used if the middle portion of the pavement is taken first. Alternate strips of the roller shall be slightly different lengths.

1.5.9.9.2 The speed of the roller shall not exceed 5 km per hour and shall at all points be slow enough to avoid displacement of the mixture and, any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall at once be corrected by the use of rakes and addition of fresh mixture where required.

1.5.9.9.3 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 material. Rolling shall then proceed continuously with at least 10 passes of the roller till no further compaction is possible. To prevent adhesion of the mixture to the wheels of the roller, the wheel shall be kept damp with water, but excess of water shall not be permitted. In no case shall fuel lubricating oil be used for this purpose.

1.5.9.10 Joints:

1.5.9.10.1 Longitudinal joints and edge shall be constructed true to the delineating line parallel to the centre line of runway. The longitudinal lane joints shall be truly vertical in straight lines which are continuous for the full length of the pavement, or in smooth curves around bends. The exposed vertical edges of the longitudinal lane joints shall be carefully cut back and trimmed to firm material in the compacted lane, or for minimum of one and a half times the layer thickness, whichever is the greater. Arising from this operation shall be removed from the pavement and the underlying surface cleaned. The exposed joints shall then be cleaned and painted with hot bitumen immediately before the laying of lane continues. Nothing extra shall be paid on this account.

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1.5.9.10.2 Transverse Joints: They shall be formed at right angles to the longitudinal joints, and truly vertical. The exposed vertical edges of the transverse joint shall be cut back and trimmed to firm, material or for a distance of not less than 1.5 times the thickness of layer whichever is greater. Arising from this operation shall be removed from the pavement and the underlying surface cleaned. The exposed joints shall then be cleaned and painted with hot bitumen immediately before the laying of the land continues. Nothing extra shall be paid on this account.

1.5.9.11 Pavement Edges: Pavement shall be laid to correct width and alignment. To achieve straight and vertical edges, contractor shall either use adequate side shuttering or cut back the edges to correct width and alignment by removing extra mix spread. Nothing extra shall be paid on this account.

1.5.10.0 DENSE GRADED BITUMINOUS MIXES (Dense Bituminous Macadam (DBM), Dense Bituminous Macadam (DBM), Semi-Dense Bituminous Concrete (SDBC) & Bituminous Concrete)

- 1) This specification deals with the basic outline for the design, construction and controls needed while laying dense graded bituminous mixes in base course, binder course and wearing course. .In case of discrepancy in the following specification, relevant IRC 111 latest edition shall have the precedence.
- 2) Dense graded bituminous mixes shall consist of mineral aggregate and appropriate bituminous binder, mixed in a hot mix plant and laid with a mechanized paver Dense graded bituminous mixes, such as, binder and wearing courses are usually laid on a previously prepared bituminous layer. Binder course is the intermediate layer between bituminous base course and bituminous wearing course. Three different specifications for dense graded bituminous mixes are available for use for highways Purpose, layer thickness and number of layers allowed for these specifications are given in Table I.

Table 1 Types of Dense Graded Bituminous Mixes, their Use, Number of Layers and Layer Thickness

Specification	Purpose	Number of Layers	Thickness of each Layer
Dense Bituminous Macadam (DBM)	Base/Bindercourse/overlay for Strengthening	Single or Multiple	50 mm - 100 mm
Semi-Dense Bituminous Concrete (SDBC)	Wear ino	Single	25 mm to 40 mm
Bituminous Concrete	Wearing Course	Single	25 mm/40 mm/ 50 mm

3) MATERIALS

3.1 Bitumen

3.1.1 The bitumen for dense graded bituminous mixes shall comply with Indian Standard Specification for viscosity-graded paving bitumen, IS: 73 or modified bitumen complying with the IS: 15462 Guidelines for selection of grade of viscosity-graded paving bitumen and modified bitumen are given in Tables 2 to 4

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Table 2 Viscosity Graded (VG) Bitumens and their General Applications

Viscosity Grade	General Applications
VG-40 (40-60 penetration)	Use in highly stressed areas such as those in intersections, near toll booths, and truck parking lots in lieu of old 30/40 penetration grade
VG-RO (50-70 penetration)	Use for paving in most of India in lieu of old 60/70 penetration grade
VG-20 (60-80 penetration)	Use for paving in cold climatic. high altitude regions of North India
VG-10 (80-100 penetration)	Use in spraying applications and for paving in very cold climate in lieu of old 80/100 penetration grade

3 . 1.2 The type and grade of bitumen to be used shall be specified in the Contract

3. 1 3 Both the highest daily mean air temperature and the lowest daily mean air temperatures mentioned in Tables 3 and 4 can be obtained for the weather station nearest to the project site from the Indian Meteorological Organization (IMO). The IMO has data on daily mean high temperature for all 365 days in a year for all weather stations based on historical records of the last 30-40 or more years This daily mean high temperature on a specific day is the same as daily "normal" high temperature for that day as usually reported in some newspapers The highest of the R65 daily mean high air temperatures (which usually occurs on some day in May or June) is used in Tables 3 and 4. Likewise, the lowest daily mean air temperature (which usually occurs on some day in January) can also be obtained from the IMO.

Table 3 Selection Criteria for Viscosity-Graded (VG) Paving -Bitumen Based on Climatic Conditions

Highest Daily Mean Air Temperature °c

Lowest daily mean Air Temperature, °c	Less than 20 °c	20 °c to 30 °c	More than 30 °c
More than -10 °C	VG-10	VG-20	VG-30
-10 °C or lower	VG-10	VG-10	VG-20

Table 4 Selection Criteria for Grade of Modified Bitumen

Highest Daily Mean Air Temperature °c,

Lowest Daily Mean Air Temperature, °c	Less than 20 °C	20 to 30°C	More than 30°C
	Grade of Modified Bitumen		
More than -10 °C	PMB/NRMB 120 CRMB 50	PMB/NRMB 70 CRMB 55	PMB/NRMB 40 CRMB 60
-10 °C or lower	PMB/NRMB 120 CRMB 50	PMB/NRMB 120 CRMB 50	PMB/NRMB 70 CRMB 55

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PMB - Polymer Modified Bitumen ,NRMB - Natural Rubber Modified Bitumen CRMB- Crumb Rubber Modified Bitumen

Note : When commercial vehicles exceeds 2000 per day per lane and the highest daily mean temperature exceeds 40°C. V G-40 or modified bitumen of equivalent stiffness are recommended for bituminous concrete and top layers of dense bituminous macadam.

3.2 Coarse Aggregate

3.2.1 The coarse aggregate shall consist of crushed rock, crushed gravel or other hard material retained on 2.36 mm sieve It shall be clean, hard, durable and have cubical shape, free from dust and soft organic and other deleterious substances The aggregate should preferably be of low porosity The coarse aggregate shall satisfy the physical requirements specified in Table 5.

3.2.2 Where crushed gravel is proposed as aggregate, not less than 95% and 90% by weight of the crushed material retained on 4.75 mm sieve shall have at least two fractured faces for bituminous concrete and DBM/SDBC respectively.

3.3 Fine Aggregate

3.3.1 Fine aggregate shall consist of crushed or naturally occurring mineral material, or a combination of two, passing 2.36 mm sieve and retained on 0.075 mm sieve. No natural sand will be allowed in the binder and wearing courses and no more than 50 percent natural sand will be allowed in the base courses The fine aggregate shall be clean, hard, durable, dry and free from dust and soft organic and other deleterious substances. Fine aggregate shall have a sand equivalent value not less than 50 when tested in accordance with the requirement of IS: 2720 Part 37 The plasticity index of the fraction passing the 0.425 mm sieve shall not exceed 4 when tested in accordance with IS: 2720 Part 5.

Table 5 Physical Properties of Coarse Aggregate

Property	Test	Requirement	Test method
Cleanliness	Grain size analysis	Max. 5% passing 0.075 mm	IS: 2386 Part 1
Particle Shape	Flakiness and Elongation Index combined	Max-35%	IS: 2386 Part 1
Strength *	Los Angeles Abrasion Value	BC-Max. 30% Others-Max 35%	IS: 286 Part IV
	Aggregate impact Value	BC-Max.24%	IS: 2386 Part IV
		Others -Max.27%	
Polishing **	Polished Stone Value	Min. 55	IS: 2386 Part IV
Durability	Soundness (Either Sodium or Magnesium Sulphate) – 5 cycles		
	Sodium Sulphate	Max.12%	IS: 2386 Part V
	Magnesium Sulphate	Max.18%	IS: 2386 Part V
Water Absorption	Water Absorption	Max 2%	IS: 2386 Part 111

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Stripping	Coating and Stripping of Bitumen Aggregate Mixtures	Min. Retained Coating 95%	IS:6241
Water sensitivity	Retained Tensile strength***	Min 80%	ASHTO 283

Notes:

* The aggregate may satisfy either of the two tests.

** Only for wearing courses

*** If the minimum retained tensile strength falls below 80%, use of anti-stripping agent is recommended to meet the minimum requirements.

3.4.1 Filler shall consist of finely divided mineral matter such as rock dust or hydrated lime or cement approved by the Engineer. The use of hydrated lime is encouraged because of its very good anti-stripping and antioxidant properties. The filler shall be graded within the limits indicated in Table 6.

Table 6 Grading Requirement of Mineral Filler

IS Sieve (mm)	Cumulative % passing by weight of total aggregate
0.6	100
0.3	95-100
0.075	85-100

3.4.2 The filler shall be inert material free from organic impurities and have plasticity index not greater than 4. Plasticity index requirement will not apply if filler is hydrated lime or cement. Where the complete bituminous mixture fails to satisfy requirement of Moisture Susceptibility test (AASHTO T283 with freeze & thaw option), 2% by total weight of aggregate of hydrated lime shall be used and percentage of fine aggregate reduced accordingly. Please refer Annex A of IRC 111-2009 for the outline of AASHTO T283.

3.5 Aggregate Grading and Bitumen Content

3.5.1 The combined grading of the coarse aggregate, fine aggregate and filler, when tested in accordance with IS 2386 Part I, wet sieving method, shall conform to limits given in Table 7

3.5.2 The combined aggregate grading shall not vary from the lower limit on one sieve to the higher limit on the adjacent sieve to avoid gap grading

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Table 7 Aggregate Grading and Bitumen Content

Specification	DBM		SDBC		BC	
Grading	1	2	1	2	1	2
Nominal maximum aggregate size *	37.5	26.5 mm	132mm		19 mm	13.2 mm
Layer thickness	75-100 mm	50-75	40 mm	25 mm	50 mm	25/40 mm
IS Sieve size (mm)	Cumulative Percent by weight of total aggregate passing					
45	100					
37.5	95-100	100				
26.5	63-93	90-100			100	
19		71-95	100		90-100	100
13.2	55-75	56-80	90-100	100	59-79	90-100
9.5			70-90	90-100	52-72	70-88
4.75	38-54	38-54	35-51	35-51	35-55	53-71
2.36	28-42	28-42	24—39	24—39	28—44	42-58
1.18			15-30	15-30	20-34	34—48
0.6					15-27	26-38
0.3	7-21	7-21	9—19	9—19	10-20	18-28
0.15					5-13	12-20
0.075	2-8	2-8	3-8	3-8	2-8	4—10
Bitumen content (Min)**	4%	4.5%	4.5%	5%	5.2%	5.4%

* Nominal maximum aggregate size is the largest specified sieve size upon which any of the aggregate material is retained.

** Corresponds to specific gravity of the Aggregate being 2.7. In case aggregate have specific gravity more than 2.7, bitumen content can be reduced proportionately. Further for regions where highest daily mean air temperature is 30°C or lower and lowest daily mean air temperature is (-)10°C or lower, the bitumen content may be increased by as much as 0.5 percent.

3.5.3 Bitumen content indicated in Table 7 is the minimum only. The exact bitumen content required shall be determined following the Marshall Mix Design procedure contained in the Asphalt Institute Manual MS-2 (Sixth Edition).

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3.5.4 The fines to bitumen (F/B) ratio by weight of total mix shall range from 0.6 to 1.2 for all mixes in Table 7.

4) Design Mix

4.1 Mix Requirements

4.1.1 Besides conforming to the requirement of grading and quality for individual ingredients the mix shall meet the requirement set out in Tables 8 depending upon the type of binder

Table 8 Requirement of the Dense Graded Bituminous Mix Using Viscosity-Graded (VG) Paving/ Modified Bitumen

Properties	Viscosity Grade Paving Bitumen	Modified Bitumen		Test Method
		Hot Climate	Cold Climate	
Compaction level (Number of blows)	75 blows on each face of the specimen			
Minimum stability (kN at 60°C)	9.0	12	10	AASHTO T245
Marshall flow (mm)	2 - 4	2.5 - 4	3.5 - 5	AASHTO T245
Marshall Quotient (stability/flow)	2 - 5	2.5 - 5		
% Air Voids	3-5			MS-2 and ASTM D2041
% Voids filled with bitumen (VFB)	65-75			MS-2
Tensile Strength Ratio	80% (Minimum)			AASHTO T283
Coating of Aggregate Particles with bitumen		95% (Minimum)		IS: 6241
% Voids in Mineral aggregate VMA				
Nominal Maximum Particle size (mm)	Min % VMA related to designed % air Voids ***			
	3	4	5	
9.5	14	15	16	
13.2	13	14	15	
19.0	12	13	14	
26.5	11	12	13	
37.5	10	11	12	

*** For intermediate value of designed percentage air voids interpolate the VMA

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4.2 Binder Content

- 4.2.1 The binder content shall be selected to obtain 4 percent air voids in the mix design and shall meet all requirements given in Table The Marshall Method for designing the mix shall be adopted as described in the sixth edition of the Asphalt Institute Manual MS-2.
- 4.2.2 Where maximum size of the aggregate is more than 26.5 mm, modified Marshall method using 150 mm (6 inches) diameter specimen described in the Asphalt Institute Manual MS-2 (Sixth Edition) and ASTM D5581 shall be used. This test method requires modified equipment and procedure. When the modified Marshall test is used, the specified minimum stability values and the specified flow values given in Table 8 shall be multiplied by 2.25 and 1.5, respectively.

4.3 Job Mix Formula

4.3.1 The laboratory mix design gives the proportion of the mineral aggregate combination in terms of individual sieve sizes, for actual operational purpose in the field, blending of the two or more sizes of aggregates (each size having within its range of individual sieve size) would be necessary. This blending ratio is obtained on a weight basis giving percent weight of the coarse aggregate, fine aggregate and filler needed to give the ultimate gradation. This mineral aggregate combination together with the corresponding optimum bitumen content as determined in the laboratory, constitute the job mix formula for implementation during construction. The job mix formula proposed for the use in the work shall give the following details:

- 1 Source and location of all materials
- 2 Proportions of all materials
- 3 Binder type and percentage by weight of total mixture
- 4 Coarse aggregate/fine aggregates/mineral filler as percentage by weight of total aggregate including mineral filler
- 5 A single definite percentage passing each sieve for the mix aggregate
- 6 The individual grading of the individual aggregate fraction and the proportion of each in the combined grading
- 7 The test results of mix design such as maximum specific gravity of loose mix (G_{mm}), compacted specimen densities, Marshall stability, flow, air voids, VMA, VFB and related graphs, and test results of AASHTO T 283 Moisture Susceptibility test
- 8 In case of batch mixer, the individual weight of each type of aggregate and binder per batch
- 9 Test results of aggregates
- 10 Mixing and compacting temperatures

4.3.2 Annual of the job mix formula shall be based on independent testing by the Engineer on the samples furnished by the contractor. It should be ensured that it is based on the truly representative samples of the material that will be used for the work. New job mix formula shall be got approved whenever there is change in the material used for the work.

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4.4 Plant Trial

4.4.1 Plant trial shall be carried out to establish that the plant can produce uniform mix conforming to the job mix formula. The permissible variation of the various ingredients in the actual mix from the job mix formula shall be within the limits as given in Table 9. These variations are intended to apply to individual specimen taken for quality control test in accordance with Clause 6.

Table 9 Permissible Variation from the Job Mix Formula

Description	Permissible Variation	
	DBM	SDBC/BC
Aggregate passing		
19 mm or larger	± 8 %	± 7 %
13.2 mm/9.5 mm	± 7 %	± 6 %
4.75 mm	± 6 %	± 5 %
2.36 mm, 1.18 mm, 0.6 mm	± 5 %	± 4 %
0.3 mm, 0.15 mm	± 4 %	± 3 %
0.075 mm	± 2 %	± 1.5 %
Binder Content	± 0.3 %	± 0.3 %
Mixing Temperature	± 10 °c	± 10 °c

4.5 Laying Trials

4.5.1 Laying trials are carried out to establish that the proposed mix can be successfully laid and compacted. The laying trial shall be carried out in an area, which does not form a part of the work. The minimum area for laying trials shall be 100 sqm. This shall be similar to the project area on which the bituminous layer is to be laid. Methodology, equipment and mix shall also be similar to those proposed for the project.

4.5.2 The trials establish that the proposed laying plan, compaction plan, and methodology are capable of producing satisfactory results. The density of finished paving layer should not be less than the 92% of the average density (Sample size N=2) based on theoretical maximum specific gravity of the loose mix (Gmm) obtained on the day of trial following ASTM D2041. See Annex B for the outline of ASTM D2041.

5) CONSTRUCTION OPERATION

5.1 Preparation of Base

5.1.1 Cleaning of the surface: The surface shall be cleaned of all loose extraneous matter by means of mechanical broom and high-pressure air jet from compressor or any other approved equipment/method.

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5.1.2 Filling-up of potholes and sealing of cracks: Any potholes and/or cracks shall be repaired and sealed.

5.1.3 Geosynthetics or stress absorbing layers: Where required, layer of geosynthetics/ stress absorbing material shall be laid.

5.1.4 Profile correcting course: Depending upon requirement, profile-correcting course for correcting the existing pavement profile shall be laid either as a separate layer or as a composite layer with varying thickness Where the maximum thickness of the profile corrective course is less than 40 mm, the profile corrective course shall be laid as an integral part of the overlaying layer. In other cases the profile corrective course shall be constructed as a separate layer When it is laid as a separate layer, type of material for the use as the profile corrective course may differ.

5.2 Tack Coat

5.2.1 Tack coat: Tack Coat shall be as per IRC: 16 "Standard Specification and Code of Practice for Prime and Tack Coat

5.3 Mixing

5.3.1 Dense graded bituminous mixes shall be prepared in a hot mix plant of adequate capacity and capable of yielding a mix of propel and uniform quality with thoroughly coated aggregate The essential features of the hot mix plant are given in Annex A of IRC: 27 "Specifications for Bitumen Macadam" Table 10 gives the mixing, laying, and rolling temperatures for dense graded mixtures. In case of modified bitumen, the temperature of mixing and compaction shall be higher than the mix with conventional bitumen as binder The exact temperature depends upon the type and amount of modifier used and shall be adopted as per the recommendations of the manufacturer In order to ensure uniform quality of mix the plant shall be calibrated from time to time.

Table 10 Mixing, Laying and Rolling Temperatures for.
Dense Mixtures (Degree Celcius)

Bitumen Viscosity Grade	Bitumen Temperature	Aggregate Temperature	Mixed Material Temperature	Laying Temperature	*Rolling Temperature
VG-40	160-170	160-175	160-170	150 Min.	100 Min.
VG-30	150-165	150-170	150-165	140 Min.	90 Min.
VG-20	145-165	145-170	145-165	135 Min.	85 Min.
VG-10	140-160	140-165	140-160	130 Min	80 Min

*Rolling must be completed before the mat cools to these minimum temperatures

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5.4 Transportation

5.4.1 Bituminous material shall be transported in clean, insulated covered vehicles. An asphalt release agent, which does not adversely affect the bituminous mix, may be applied to the interior of the vehicle to prevent sticking and to facilitate discharge of the material.

5.5 Laying

5.5.1 Weather and seasonal limitations: Dense graded bituminous mixes shall not be laid:

- a) in presence of standing water on the surface
- b) when rain is imminent and during rains, fog or dust storm
- c) when the base/binder course is damp,
- d) when the air temperature on the surface on which it is to be laid is less than 10°C for mix with conventional bitumen as binder and is less than 15 °C for mix with modified bitumen as binder
- e) When the wind speed at any temperature exceeds the 40 km/h at 2 m height.

5.5.2 Preparation of the base: Base shall be prepared by carrying out all or some of the operations as per Clause 5.1, depending upon the site conditions.

5.5.3 Spreading: Except in areas where paver cannot access, bituminous material shall be spread, leveled and tamped by self-propelled hydrostatic paver finisher preferably with sensor. As soon as possible after arrival at site the material shall be supplied continuously to the paver and laid without delay. The rate of delivery of material to the paver shall be regulated to enable the paver to operate continuously. The travel rate of paver and the method of operation shall be adjusted to ensure even and uniform flow of bituminous material across the screed, free from dragging, tearing and segregation.

Restricted areas (such as confined space, footways, irregular shape and varying thickness, approaches to expansion joints etc.) where paver cannot be used, the material shall be spread, raked and leveled with suitable hand tool by trained staff.

When laying dense graded bituminous mixes near expansion joint, the machine laying shall be stopped about 300 mm short of joint. The remainder of the pavement up to the joint and the corresponding area beyond it shall be laid manually. Table 10 gives the minimum laying temperatures. Bituminous material, with temperature greater than 145°C shall not be laid or deposited on bridge deck waterproofing system unless precautions against the heat damage have been taken.

5.6 Compaction

5.6.1 Compaction shall commence as soon as possible after laying and shall be completed before the temperature falls below the minimum rolling temperatures given in Table 10. Rolling of the longitudinal joints shall be done immediately behind the paving operation. After this the rolling shall commence at the edge and progress towards the center longitudinally except at sections with unidirectional camber, where it shall progress from lower edge to upper edge parallel to centerline of the pavement.

5.6.2 All deficiencies in the surface after laying shall be made good by the attendant behind the paver, before initial rolling is commenced. The initial or breakdown rolling shall be done with the 8 to 10 tonnes dead weight 01 vibratory steel wheel roller. The intermediate rolling shall be done with 8 to 10 tonnes dead weight 01 vibratory roller or with a pneumatic roller of 12 to 15 tonnes, with a tire pressure of at least 0.56 MPa. The finished rolling shall be done with 6 to 8 tonnes smooth wheel roller. Rolling shall continue till all the roller marks are removed from the surface and the minimum specified field density is achieved.

5.6.3 The dense graded bituminous mixes shall be rolled in the longitudinal direction, with the roller as close as possible to the paver. The overlap on successive passes should be at least one-third of the width of the rear 1011 or in the case of pneumatic wheeled rollers, at least the nominal width of 300 mm. The roller should move at a speed of no more than 5 km/hour. The roller shall not be permitted to stand on pavement, which has not been fully compacted. All precautions shall be taken to prevent dropping of oil, grease, petrol 01 other foreign material on the pavement. The wheel of the rollers shall be kept moist with the water 01 spray system provided with the machine to prevent the mixture from adhering to the wheels. Minimum moisture to prevent adhesion between wheels and mixture shall be used and surplus water shall not be allowed to stand on the partially completed pavement.

5.6.4 The density of the finished paving layer shall be determined by taking 150 mm diameter cores. The density of finished paving layer shall not be less than the 92% of the average (sample size N=2) theoretical maximum specific gravity of the loose mix (G_{mm}) obtained on that day in accordance with ASTM D2041. Please refer Annex B of IRC 111 -2009 for the outline of ASTM D2041.

5.7 Joints

5.7.1 Where joints are made, the material shall be fully compacted and the joint made flush in one of the following ways.

a) All joints shall be cut vertical to the full thickness of the previously laid mix. All loosened material shall be discarded and the vertical face be coated with any viscosity grade bitumen, or cold applied emulsified bitumen. While spreading the material along the joint, the material spread shall overlap 25 mm to 50 mm on the previously laid mix beyond the vertical face of the joint. The thickness of the loose overlap material should be approximately a quarter more than the final compacted thickness. The overlapped mix should be dragged back to the hot lane so that the roller can press the small excess into the hot side of the joint to obtain a high joint density.

b) By using two or more pavers in echelon, where this is practicable and in sufficient proximity for adjacent width to be fully compacted by continuous rolling.

5.7.2 In multi-layer construction the longitudinal joint in one layer shall offset the joint in the underneath layer by about 150 mm.

5.7.3 For transverse joints method a) above can apply. Transverse joints in the successive and adjoining layers should have a minimum offset of 2 m.

5.8 Arrangement for Traffic

5.8.1 It shall be ensured that traffic is not allowed on the surface until the paved mat has cooled below a temperature of 60°C in its entire depth.

6) CONTROLS

6.1 Surface Finish

6.1.1 The levels of the dense graded bituminous mixes shall not vary from those calculated with reference to longitudinal and cross profile of the roads as per the Contract beyond ± 6 mm provided that the negative tolerance shall not be permitted in conjunction with the positive tolerance for the base course if the thickness of the former is thereby reduced by more than 6 mm.

6.1.2 For checking the compliance with the above requirement measurements of the surface level shall be taken on a grid of points spaced 6.25 m along the length and 0.5 m from the edges and at the centre of the pavement. The compliance shall be deemed to be met for the final road surface only if the tolerance given above is satisfied for any point on the surface.

6.1.3 In case where surface levels fall outside the specified tolerance, the Contractor shall be liable to rectify these by replacing the full depth of layer. In all cases of replacement the area treated shall not be less than 5 m in length and not less than 3.5 m in width.

6.2 Surface Evenness

6.2.1 The measurement and checking of surface unevenness shall be done by a 3 m straight edge in accordance with the procedures in IRC:SP: 16.

6.2.2 The maximum permissible surface unevenness in longitudinal profile shall be 6 mm for SDBC and 5 mm for The maximum permissible unevenness in transverse profile shall be 4 mm for both SDBC and BC.

6.2.3 The maximum permissible frequency of surface unevenness in 300m length in longitudinal profile shall be as per Table 11

Table 11 Maximum Permissible Frequency of Unevenness

Maximum Number of Surface Unvenness

Type of Surface	Unevenness,	NH/SH	MDR and Lower Category
Semi-Dense Bituminous Concrete	4—6	20	40
Bituminous Concrete	3-5	15	30

6.2.4 Where the surface unevenness falls outside the tolerance, in either case i e. the surface is low or high, the full depth of the layer shall be and replaced with fresh material and compacted to the specification

6.2.5 In all cases of removal and replacement the area treated shall not be less than 5 m in length and 3 5 min width

6.2 Surface Roughness

6.3.1 Surface roughness shall be checked in accordance with procedures in IRC:SP: 16.

6 3.2 The maximum permissible values of surface roughness measured with a bump integrator are given in Table 12 Newly constructed surface are expected to give roughness values corresponding to Good category While the Average and Poor categories indicate level of service and the intervention criteria.

Table 12 Maximum Permissible Values of Roughness (mm/km) for Surface with Dense Graded Bituminous Mixes

Type of surface	Condition of Road Surface (mm / km)		
	Good	Average	Poor
SDBC	< 2500	2500-3500	> 3500
BC	< 2000	2000-3000	> 3000

6.4 Quality Control during execution

6.4.1 The material supplied and the work shall conform to the specifications prescribed in the preceding Clauses to ensure the quality of the material and the work, control tests shall be conducted during the execution of the paving project The tests and minimum frequency for each test is indicated in Table 13.

Table 13 Control Tests for Dense Graded Bituminous Mixes and their Minimum Frequency

S.no	Test	Frequency
1	Quality of binder	Number of samples per lot and tests as per IS: 73 01 IRC:SP: 53
2	Aggregate impact value/Los Angeles Abrasion value	One test per 350 m ³ of aggregate for each source and whenever there is change in the quality of aggregate
3	Flakiness index	One test per 350 m ³ of aggregate for each source and whenever there is change in the quality of aggregate
4	Soundness test (Sodium and Magnesium Sulphate test)	1 test for each source and whenever there is change in the quality of aggregate
5	Water absorption of aggregate	1 test for each source and whenever there is change in the quality of aggregate
6	Sand equivalent test	1 test for each source and whenever there is change in the quality of aggregate
7	Plasticity Index	1 test for each source and whenever there is change in the quality of aggregate
8	Polished stone value	1 test for each source and whenever there is change in the quality of aggregate
9	Percent of fractured faces	One test per 350 m ³ of aggregate when crushed gravel is used.
10	Mix grading	One set for individual constituent and mixed aggregate from dryer for each 400 tonnes of mix subject to minimum of two tests per day per plant

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11	Stability and voids analysis of mix including theoretical maximum specific gravity of loose mix	3 tests for stability, flow value, density and void contents for each 400 tonnes of mix subject to minimum of two tests per day per plant
12	Moisture Susceptibility of mix (AASHTO T 283)	1 test for each mix type whenever there is change in the quality or source of coarse or fine aggregate
13	Temperature of binder in boiler, aggregate in dryer and mix at the time of laying and compaction	At regular intervals
14	Binder Content	One set for each 400 tonnes of mix subject to minimum of two tests per day per plant
15.	Rate of spread of mix material	After every 5 th truck load
16	Density of compacted layer	One test per 700 m ² area

6.5 Acceptance Criteria

6.5.1 The acceptance criteria for test on density (N = 3 minimum) and Marshall stability (N = 2 minimum) shall be subjected to the condition that the mean value of N samples is not less than the specified value plus $[1.65 - 1.65/(\text{No of samples})^{0.5}] \times \text{standard deviation}$

6. 5.2 Table 9 will govern the permissible variation in the mix and temperature.

BITUMEN
(Surface course and Base course)

Do

- ❖ Specific Gravity test to confirm the bitumen is adulterated or not
- ❖ Penetration test to know the grade of bitumen
- ❖ Softening point test to know whether the bitumen is CRMB or not
- ❖ Unit weight test to fix the binder content for PCSC
- ❖ Sieve test for ascertaining the gradation of aggregates
- ❖ Binder content test for the mix conveyed to the site before laying, to know the correct binder content.
- ❖ Proper overlaps while rolling
- ❖ Density check for ascertaining the compaction
- ❖ Maintain Q.C, registers and list of tests frequency quoted
- ❖ Proper compaction for pipe laid portion of culverts to avoid sinking

Do not

- ❖ Put dust over the compacted surface since it will bleed and reduce the binder content
- ❖ Over heat the bitumen since it will lose all its properties
- ❖ Allow many loads to stand unloaded at the site, if so engage more rollers or monitor through mobile phone or return the mix.
- ❖ Add water to the bitumen emulsion during prime coat or tack coat application
- ❖ Allow the roller to run fast
- ❖ Allow wheel tracks while rolling
- ❖ Tack coat excess at the center of the two lane, since it will bleed and possible skidding will occur.
- ❖ Forget to maintain camber and super elevation
- ❖ Forget to edge pack the B.T. edges immediately after laying

BHEL APPROVED BRANDS FOR THE FOLLOWING MATERIALS / ITEMS

Sl. No.	Material	Manufacturing Co.	Brand
1.	Synthetic Enamel Paint	Asian Berger ICI	Apcolite Luxol Dulux gloss
2.	Aluminium Paint	Berger	Berger Aluminium
3.	Interior Emulsion	Asian Berger ICI	Royale Luxol Silk Supercote
4.	Exterior Emulsion	Asian ICI	ACE Supercote
5.	Distemper	Asian Berger ICI	Tractor Bison Maxilite
6.	Cement Paint	Snowcem Agsarcem	Snowcem Agsarcem
7.	A.C. Sheets	Everest India Ltd. Hyderabad India Ltd. Visaka Industries Ltd. Ramco	Everest I Charminar Visaka Ramco
8.	G.I. Pipes	TATA Zenith	TATA Zenith
9.	PVC Pipes	Avonplast Finolex Truebore Vignesh	Avonplast Finolex Truebore Vignesh

In addition, CPWD approved brands shall also be considered based on written requests from contractor including for the materials which are not listed above. However, the decision of engineer in charge is final.

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SECTION 7

GENERAL CONDITIONS OF CONTRACT FOR LUMP SUM, ITEM RATES AND PERCENTAGE CONTRACT

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CHAPTER- I

1. DEFINITIONS

In these General Conditions of Contract, the following terms shall have the meaning hereby assigned to them except where the context otherwise requires:-

- a) The “CONTRACT” means the documents forming the tender and acceptance thereof, together with all documents referred to therein including General and Special Conditions of Contract, Schedules ‘A’, ‘B’, ‘C’, ‘D’, ‘E’, and / or General Summary attached to the form of tender, the Bharat Heavy Electricals Limited, Schedule of Rates as amended and in force the Specifications and the Drawings. All these documents as applicable taken together shall be deemed to form one Contract and shall be complementary to one another.
- b) The “TENDER DOCUMENTS” means the form of Tender the applicable Schedules ‘A’, ‘B’, ‘C’, ‘D’, ‘E’, and / or General Summary, General and Special Conditions of Contract and the Specification and / or Drawings as given to Contractors on payment for the purpose of preparing their tenders.
- c) The “WORK” means the work described in the tender documents in individual work orders and/or accompanying Drawings and Specifications as may be issued from time to time to the Contractor by the Engineer-in-charge within the powers conferred upon them, including all modified or additional works and obligations to be carried out either at the site or at any Factory Workshop or other place as required for the performance of the Contract.
- d) The “SITE” means the lands and/or other places on, in into or through which the work is to be executed under the Contract or any adjacent land, path or street which may be allotted to or used for the purpose of carrying out the contract.
- e) The “CONTRACTOR” means the individual, firm or Company, whether incorporated or not undertaking the work and shall include the legal personal representatives of such individuals or the persons composing the firm or Company, or the successors of the firm or Company and the permitted assigns of such individual or firm or Company.
- f) The “Engineer-in-charge” means the Engineer who is in-charge for the works referred.

CHAPTER II

SCOPE OF CONTRACT

2. Heading to the Contract:

The heading to these conditions shall not affect the interpretation thereof.

3. Contract Documents:

The Accepting Officer shall furnish to the Contractor on demand “FREE OF COST” three copies of signed drawings and one copy of the signed agreement comprising of preamble to agreement, General and Special Specifications, Schedule ‘A’, ‘B’, ‘C’, & ‘E’, etc., (but excluding General Conditions

of Contract and Drawings) and **three** copies of all further drawings issued during the progress of work.

However, for any additional copies of the agreement or drawings required by the Contractor the same will be supplied on payment at the specified cost.

The Contractor shall keep one copy of all the Drawings and the Specifications at the site and the Engineer-in-charge or his representative shall have access to them at all reasonable times.

None of these documents shall be used by the contractor for any purpose other than that of this contract.

The Contractor shall take necessary steps to ensure that all persons employed on any work in connection with this contract have noticed that the Indian official Secrets Act 1923 (XIX of 1923) applies to them and shall continue so to apply even after the execution of such works under the contract.

4. Works to be Carried Out:

The Contract shall, except as provided under Schedules 'B' and 'C' include all labour, materials, tools, plants equipment and transport which may be required in preparation for, and in the entire execution and full completion of the work. Schedule 'A' shall be deemed to have been prepared in accordance with good practice and recognized principles and unless otherwise stated, the descriptions given therein shall be held to include waste on materials carriage and cartage, lead, return of empties, hoisting, setting, fitting in position and all other labour necessary in and for the entire execution and full completion aforesaid. Any error in description or quantity in schedule 'A' or any omission there from shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the work comprised therein according to the Drawings and Specifications, or from any of his obligations under the Contract. The insertion of the name of any firm of suppliers in the Tender Documents is for the purpose of obtaining a particular class or quality of materials or workmanship but the articles or materials specified may be obtained from any other firm subject to prior written approval of the Engineer – in – charge.

In the case of a discrepancy between Schedule 'A' the specification and / or the Drawing, the Accepting Officer shall be the sole deciding authority as to which shall prevail and his decision shall be final and conclusive. If neither Drawings nor Specifications contain any mention of minor details of construction, which in the opinion of the Accepting Officer whose decision shall be final and conclusive, are reasonable and obviously and fairly intended for the satisfactory completion of the work, such details shall be provided by the Contractor without any extra cost as if they were specially mentioned and shall be deemed to be included in the contract.

The contractor will be deemed to have satisfied himself as to the nature of the site, local facilities of access and all matters affecting the execution and completion of the work. No extra charges consequent on any mis-understanding in these respects or otherwise will be allowed.

5. Provisional Items:

The full amount of provisional lumpsums and the value annexed to each provisional item inserted in the tender documents shall be deducted from the contract sum and the value of work ordered and executed thereunder shall be ascertained by measurement or valuation as for deviations. No work under these items is to be begun without instructions in writing from the Engineer-in-charge.

The extent of quantities or items described as "Provisional" shall not be held to guarantee or limit the amount and description of the work to be executed by the contractor either in respect of the items concerned or the work as a whole.

No addition or deduction shall be made by the Contractor to the amount of the provisional lumpsums as included in the tender documents.

6. Deviations:

The contractor shall not make any alteration in addition to or omission from the work as described in the tender documents except in pursuance of the written instructions of the Engineer-in-charge. No such deviation from the work described in the tender documents shall be valid unless the same has been specifically confirmed and accepted by the Accepting Officer in writing and incorporated in the contract.

The Accepting Officer may deviate either by way of addition or deduction, from the work so described, provided that the contract sum be not thereby varied on the whole by more than the percentage set out in the tender documents. The value of all addition and deductions will be added to, or deducted from the contract sum. Whenever the Accepting Officer intends to exercise such a right, his intention shall specify the deviations which are to be made, the lumpsum assessment or the proposed basis of payment, the extra time allowed, if any, and the date for completion of the entire contract.

Any objection by the Contractor to any matter concerning the order shall be notified by him in writing to the Engineer-in-charge within **Seven days** from the date of such order, but under no circumstances shall the work be stopped (unless so ordered by the Engineer-in-charge) owing to differences or controversy that may arise from such an objection. In the absence of such a notification of objection by the contractor, he will be deemed to have accepted the order and the conditions stated therein. In the event of the contractor failing to agree with the Engineer-in charge regarding the terms of the proposed deviation, the objection shall be referred to the Project Manager whose decision shall be final conclusive and binding on the Contractor.

7. Time:

Time is the essence of the contract and is specified in the tender document or in each individual Work Order. As soon as possible after the contract is let or any substantial Work Order is placed and before work under is to begin, the Engineer-in-charge and the Contractor shall agree to a Time and Progress Chart. The Chart shall be prepared in direct relation to the time stated in the Tender Documents or the Work Order for the completion of the individual items thereof and/the contract or order as a whole. It shall indicate the forecast of the dates for the commencement of the various trade processes or sequences of the work, and shall be amended as may be required by agreement between the Engineer-in-charge and the Contractor within the limitation of the time imposed in the Tender Documents or Order

In the absence of any specific Time and Progress chart to be agreed to between the Contractor and the Engineer-in-charge, the contractor shall ensure and maintain uninterrupted progress of the work such that the entire work shall be completed within the time imposed in the Tender Documents or Order and that the proportion of work completed upto any time in relation to the entire work to be under the Contractor Order shall not be less than the proportion that the time elapsed bears to the total time of completion provided in the Tender Documents or Order.

The contractor shall suspend the execution of the work, or any part or parts thereof whenever called upon in writing by the Engineer-in-charge to do so, and shall not resume work thereon until so directed in writing by the Engineer –in-charge. The Contractor will be allowed an extension of time for completion not less than the period of suspension. However, no other claim in this respect for compensation or otherwise however will be admitted. Provided the cause for suspension is not attributable to any default on the contractor's part to proceed with or fulfill the contractual obligations. This may also be extended to allow for alteration of work made by the deviation order.

8. Stores and Materials:

The Contractor shall, at his own cost and expense, provide all materials required for the works, other than those listed in Schedule 'B', which are to be supplied by Bharat Heavy Electricals Limited. All materials to be supplied by the Contractor shall be of the best kind as described in the specifications and the Contractor shall, if requested by the Engineer-in-charge, furnish proof to the satisfaction of the Engineer-in-charge, that the materials so comply with the specifications.

The contractor shall, at his own expense and without delay, supply samples of materials proposed to be used in the execution of the work for approval of the Engineer-in-charge, who may reject the materials not corresponding either in quality or character to the approved samples.

In the case of stores provided under Schedule 'B' the Contractor shall bear the cost of loading, transporting to site, unloading, storing under cover as required assembling and jointing the several parts together as necessary and incorporating or fixing these stores materials in the work, including all preparatory work of whatever description as may be required, and of closing, preparing, loading and returning empty cases or containers to the place of issue without any extra charges.

9. Delay and Extension of Time:

if, in the opinion of Engineer-in-charge the work is delayed:

- i) by reason of abnormally bad weather, OR
- ii) by reason of serious loss or damage by fire, OR
- iii) by reason of Civil commotion, local combination of workmen strike or lockout, affecting any of the trades employed on the work OR.

- iv) by delay on the part of the agency or tradesman engaged by BHEL in executing work not forming part of this contract, OR
- v) by reason of any other cause which in the absolute discretion of the Engineer-in-charge is (when he is the Accepting Officer of the Contract) beyond the Contractor's reasonable control, than in such case the Accepting Officer on the recommendation of the Engineer-in-charge (or higher authority) may make fair and reasonable extension in the completion dates of the individual items of work or the contract as a whole. Such extension which will be communicated to the Contractor by the Engineer-in-charge in writing shall be final and binding on the Contractor. No other claim in this respect for compensation or other-wise howsoever is admissible. Upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-charge but shall nevertheless use constantly his best endeavour to prevent or make good the delay and shall do all that may reasonably be required to the satisfaction of the Engineer-in-charge to proceed with the work.

10. Patent Rights:

The Contractor shall fully indemnify B.H.E.L or the agent, servant, or employee of B.H.E.L against any action, claim or proceeding relating to infringement or the use of any patent or design or any alleged patent or design rights, and shall pay any royalties which may be payable in respect of any article / or part thereof included in the contract.

In the event of any claims being made or action brought against B.H.E.L or any agent, or servant or employee of BHEL in respect of matters aforesaid the Contractor shall immediately be notified thereof for taking necessary action provided that payment of indemnity shall not apply when such infringement has taken place in complying with the specific directions issued by the BHEL but the Contractor shall pay any royalties payable in respect of any such use.

11. GST:

All charges on account of **GST** and/or other duties on material obtained for the work (excluding materials provided by B.H.E.L on payment) shall be borne by the contractor.

12. Royalties:

Royalties fixed from time to time as per prevalent local rules will be recovered for materials, which the Contractor may be allowed to remove from quarries situated on land which is in charge of the B.H.E.L authorities.

13. Plant and Equipment:

The Contractor, shall at his own expense, supply all tools, plant and equipment (here-in-after referred to as T & P) required for the execution of the contract other than those listed in Schedule 'C' which subject to their availability may be hired by B.H.E.L., to the Contractor or issued free for use in the execution of the work as specified in Tender Documents.

14. Assignment or Transfer of Contract:

The Contractor shall not, without the prior written approval of the Accepting Officer, assign or transfer the Contract or any part thereof, or any share, or interest therein to any other person. No sum of money which may become payable under the Contract shall be payable to any person other

than the Contractor unless the prior written approval of the Accepting Officer to the assignment or transfer of such money is given.

(a) Sub Contract:

The Contractor shall not sub-let any portion of the Contract without the prior written approval of the Accepting Officer.

15. Compliance to Regulations and Bye Laws:

The Contractor shall conform to the provision of any statute relating to the work and regulations and bye-laws of any local authority and of any water and lighting Companies or Undertakings with whose system the work is proposed to be connected. He shall, before making any variation from the drawings or the specifications that may be necessitated for such connections give the Engineer-in-charge notice, specifying the variation proposed to be made and the reasons therefor and shall not carry out any such variation until he has received instructions from the Engineer-in-charge in respect thereof. The contractor shall be bound to give all notice required by Statute Regulations or Bye-laws as aforesaid and to pay all fees, and taxes payable to any authority in respect thereof.

CHAPTER III

PERFORMANCE OF THE CONTRACT

16. Security Deposit:

16.1 The Security Deposit shall be collected from the successful tenderer. The total amount of security deposit will be 10 % of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.

At least 50% of the required Security Deposit, including the EMD has to be furnished by the contractor before commencement of the work.

"Bidder agrees to submit performance security required for execution of the contract within the time period mentioned. In case of delay in submission of performance security, enhanced performance security which would include interest (Repo rate + 4%) for the delayed period, shall be submitted by the bidder. Further, if performance security is not submitted till such time the first bill becomes due, the amount of performance security due shall be recovered as per terms defined in NIT / contract, from the bills along with due interest"

16.2 Security Deposit may be furnished in any one of the following forms:

- i. Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL**
- ii. Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL**
- iii. 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)**

iv. *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)
(Note: 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)*

vi. *Insurance Surety Bonds*

16.3 Security Deposit can also be recovered at the rate of 10% of the gross amount progressively from each of the running bills till the total amount of the required Security Deposit is collected. However in such cases at least 50% of the Security deposit should be collected before start of the work and the balance 50% may be recovered from the running bills.

16.4 Time period for payment of 50% of Security Deposit shall be intimated vide email after completion of RA.

16.5 Any delay Beyond the given time period shall attract penalty as in clause 16.1

(Note: In case of (a) small value contracts not exceeding Rs 20 lakhs or (b) SAS jobs, work can be started before the required Security Deposit is collected. However, payment can be released only after collection/ recovery of initial 50% Security Deposit).

16.6 The Security Deposit shall not carry any interest

All compensation or other sums of money payable by the Contractor to BHEL, under the terms of this Contract or under any other contract with BHEL, may be deducted from the Security Deposit or realized by the sale of the Securities or from the interest arising there from or from any sums which may be due or may become due to the Contractor payable by BHEL, on any account whatsoever against this Contract or any other Contract with BHEL, and in the event of his Security Deposit being reduced by reason of such deductions or sale as aforesaid, the Contractor shall, within seven days thereafter, make good in cash or in securities endorsed as aforesaid, any sum or sums by which the Security Deposit has been so reduced.

50% of the Security Deposit / may be refunded on completion of the work after payment of the final bill and the balance 50% of the Security Deposit is refundable only after the expiry of the maintenance period of six (6) months from the date of completion of work as stipulated in the Contract concerned provided the contractor shall have rendered a "No-Demand" Certificate.

17. Order under the contract:

All orders, notices etc., to be given under the contract shall be in writing typescript or printed and if sent by e-mail id provided by the contractor or by registered post to the address given in the tender of the contractor, shall be deemed to have been served on the date when in the ordinary course they would have been delivered to him.

The contractor shall carry out without delay all orders given to him.

18. Admission to site:

The Contractor shall not enter on (other than for inspection purposes) or take possession of the site unless permitted to do so by the Engineer-in-charge. The portions of the Site to be occupied by the Contractor will be clearly defined and marked on the site plan, and the Contractor will on no account be allowed to extend his operations beyond these areas.

The Contractor shall provide, if necessary or required at the Site, temporary access there to and shall alter, modify and maintain the same as required from time to time. He shall take out and clear away the access route when no longer required and restoring the area to its original condition.

The Engineer-in-charge shall have power to execute other works (whether or not connected with the work in the contract agreement) on the site contemporaneously with the execution of the original work and Contractor shall give reasonable facilities for this purpose.

B.H.E.L reserves the right of taking over, at any time, any portion of the site which they may require and the Contractor shall at his own expense clear such portion forthwith. No photographs of the Site or of the work or any part thereof shall be taken, published or otherwise circulated without the prior approval of the Engineer-in-charge.

No such approval shall however exempt the contractor from complying with any statutory provisions in regard to the taking and publication of such photographs.

B.H.E.L Officials connected with the Contract shall have the right of entry to the Site at all times.

Engineer-in charge shall have the power to exclude from the site any person whose admission there to may, in his opinion be undesirable for any reason whatsoever.

19. Contractor's Supervision:

The Contractor shall either himself supervise the execution of the Contract or shall appoint a competent Agent approved by the Engineer-in-charge to act in his stead. The contractor shall employ an Engineer/Agent having at least a 'Degree of Bachelor of Civil Engineering' from a recognized University/on any work with a Contract value exceeding rupees two lakhs, and having at least a Diploma in civil Engineering from a recognized college, on work with a contract value exceeding Rs. 50,000/- but not exceeding rupees two lakhs.

The Employment of an Engineer/Agent as aforesaid shall not be necessary if the Contractor himself is in possession of a recognized technical qualification and is in opinion of the Engineer-in-charge capable of receiving instructions of the Engineer-in-charge and of executing the work to the satisfaction of the Engineer-in-charge. If the Contractor fails to appoint a suitable Engineer/Agent as aforesaid, the Engineer-in-charge shall have full powers to suspend the execution of work and stop payment of any advances that may have become due until such date as a suitable Engineer/Agent is appointed and the contractor shall be held responsible for the delay caused to the work and no extension of time on this account shall be given to him as stipulated in condition (9) above.

Orders given to the Contractor's Agent/Engineer shall be considered to have the same force as if they had been given to the Contractor himself.

The contractor or his Agent shall be in attendance at the site during all working hours and shall superintend the execution of work with such additional assistance in each trade as the Engineer-in-charge may consider necessary.

The contractor or his accredited agent shall attend when required and without making any claim for doing so, either the Office of the Engineer-in-charge or the work site to receive instructions.

The Engineer-in-charge shall have full powers, and without assigning any reason to require the Contractor immediately to cease to employ in connection with the Contract any Agent, servant or employee whose continued employment is, in his opinion undesirable.

The Contractor shall not be allowed any compensation on this account.

LABOUR

- 20.** The Contractor shall employ labourer in sufficient numbers either directly or through sub-contractors to maintain the required rate of progress and of quality to ensure workmanship of the degree specified in the Contract and to the satisfaction of the Engineer-in-charge. The Contractor shall not employ in connection with the works any person who has not completed his fifteen years of age.

The Contractor shall furnish to the Engineer-in-charge at the intervals specified by him, a distribution return of the number and description by trades of the work people employed on the works. The Contractor shall also submit on the 4th and 19th of every month to the Engineer-in-charge a true statement showing in respect of the second half of the preceding month and the 1st half of the current month (i) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them and (ii) The number of female workers who have been allowed maternity benefit as provided in the Maternity Benefit Act, 1961 or Rules made thereunder and the amount paid to them.

The Contractor shall pay to labour employed by him either directly or through sub-contractors wages not less than fair wages as defined in the Contractor's Labour Regulations.

The contractor shall in respect of labour employed by him either directly or through sub-contractors comply with or cause to be complied with Contractor's Labour Regulations in regard to all matters provided therein.

The Contractor shall comply with the provisions of the Payment of Wages Act 1936, Minimum Wages Act 1948, Employers liability Act 1938, Workmen's Compensation Act 1923, Industrial Disputes Act 1947, Maternity Benefit Act 1961 and Mines Act 1952, Contract Labour Regulation

and Abolition Act 1970 or any modifications there of or any other law relating thereto and rules made thereunder from time to time.

The contractor shall be liable to pay his contribution and the employees' contribution to the State Insurance Scheme in respect of all labour employed by him for the execution of the contract, in accordance with the provision of "The Employees' State Insurance Act, 1948" as amended from time to time. In case the contractor fails to submit full details of his account of labour employed and the contribution payable, the Engineer-in-charge shall recover from the running bills of contractor an amount of contribution as assessed by him. The amount so recovered shall be adjusted against the actual contribution payable for Employees' State Insurance.

The Engineer-in-charge shall on a report having been made by an Inspecting Officer as defined in the Contractor's Labour Regulations have the power to deduct from the **amount** due to the Contractor any sum required or estimated to be required for making good the loss suffered by the worker or worker by reason of non-fulfillment of the Conditions of the Contract for the benefit of workers, non-payment of wages or of deductions made from his or their wages which are not justified by the terms of the Contract or non-observance of the said Contractor's Labour Regulations.

The Contractor shall indemnify the B.H.E.L against any payments to be made under and for observance of the Regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractors.

In the event of the Contractor committing a default or breach of any of the provisions of the aforesaid Contractor's Labour Regulations, as amended from time to time or furnishing any information or submitting or filling any form / Register/Slip under the provisions of these Regulations which is materially incorrect then on the report of the Inspecting Officers as defined in the Contractor's Labour Regulation, the Contractor shall without prejudice to any other liability pay to the B.H.E.L a sum not exceeding Rs. 50/- as liquidated damages for every default breach or furnishing, making submitting, filling materially incorrect statement as may be fixed by the Engineer-in-charge and in the event of the Contractor's default continuing in this respect, the liquidated damages may be enhanced to Rs. 50/- per day for each day of default subject to a maximum percent of the estimated cost of works put to tender.

The Engineer in charge shall deduct such amount from bills or security deposit of the Contractor and credit the same to the Welfare Fund constituted under Regulations. The decision of the Engineer-in-charge in this respect shall be final and binding.

Model Rules for Labour Welfare

The Contractor shall at his own expense comply with or cause to be complied with Model Rules for Labour welfare as appended to these Conditions or rules framed by Government from time to time for the protection of health and for making sanitary arrangements for workers employed directly/or indirectly on the works. In case the Contractor fails to make arrangements as aforesaid, the Engineer-in-charge shall be entitled to do so and recover the cost thereof from the Contractor.

Safety Code

The Contractor shall at his own expense arrange for the safety provisions as appended to these conditions or as required by the Engineer – in – charge, in respect of all labour directly or indirectly employed for performance of the works and shall provide all facilities in connection therewith. In case the Contractor fails to make arrangements and provide necessary facilities as aforesaid, the Engineer– in–charge shall be entitled to do so and recover the cost thereof from the Contractor.

Failure to comply with model Rules for Labour Welfare, Safety Code, or the provisions relating to report on accidents and to grant of maternity benefits to female workers shall make the Contractor liable to pay to the B.H.E.L as liquidated damages an amount not exceeding Rs. 50/- for each default or materially incorrect statement. The decision of the Engineer–in–charge in such matters based on reports from the Inspecting Officers as defined in the Contractor’s Labour Regulation as appended to these conditions shall be final and binding and deductions for recovery of such liquidated damages may be made from any amount payable to the Contractor.

WATER

- 21.** The Contractor shall allow in his Tender and provide at his cost all water required for the work or his employees on the work, together with all pipes and fittings or other means that may be necessary or required to ensure a proper and ample supply of water for all purposes connected with the work.

Water will be supplied from the BHEL supply system, or other sources at one point fixed by the Engineer-in-charge on the site of work at free of cost. The Contractor shall make necessary arrangement for lifting pumping, carrying or conveying the water as required at his own cost.

22. Temporary Workshops, Stores Etc.:

The Contractor shall, during the progress of the work provide, erect and maintain at his own expense all necessary temporary workshops, stores, offices, etc., required for the proper and efficient execution of the work. The planning, siting and erection of these buildings shall have the approval of the Engineer-in-charge and the Contractor shall at all times keep them tidy and in a clean and sanitary condition to the entire satisfaction of the Engineer-in-charge.

On completion of the work all such temporary buildings shall be cleared away and the site restored and left in a clean and tidy condition to the entire satisfaction of the Engineer-in-charge.

23. Stores and Materials on Site:

All stores and materials required for the work are to be deposited by the Contractor only in places to be indicated by the Engineer-in-charge.

Where in accordance with the contract stipulations certain Stores & Materials (for incorporation in the work) are to be issued to the Contractor by the BHEL as detailed under Schedule 'B' **such items will be so issued only to the extent required for the actual completion of the work** as stipulated in the contract. The decision of the Engineer-in-charge regarding the quantities to be

issued as above shall be final and binding on the contractor. For any excess quantities consumed on the work upto 5% over the theoretical consumption will be charged at issue rates and excess consumption beyond this limit, their cost will be recovered from the Contractor at punitive rates which will be 100% (Hundred Percent) more than the issue rates of the BHEL as specified in the Instructions to the Tenderers.

In regard to the materials and stores which may be issued to the Contractor by BHEL the Contractor shall give the Engineer-in-charge reasonable notice in writing of his requirements of such stores and materials and on the approval of his demand being notified to him, he shall make immediate arrangements for drawing the same. Such stores and materials shall be transported by the Contractor at his own expense direct from the place of issue to the site of the work, unless prior written approval is obtained from the Engineer-in-charge to take them to a Store or Workshop elsewhere.

The Contractor shall have to build a weather proof shed for the storage of cement required for 15 days consumption of the work.

BHEL Officers connected with the Contract shall have the power at any time to inspect and examine any stores or materials intended to be used in or on the work, whether on the site or at any factory or workshop or other place where such stores or materials are being fabricated or manufactured or at any place where the same are lying and the contractor shall give necessary facilities for such inspection and examination.

The Engineer-in-charge shall be entitled to have tests made of any stores or materials supplied by the Contractor who shall provide at his own expense all facilities which the Engineer-in-charge may require for this purpose. If at the discretion of the Engineer-in-charge an independent expert is employed to make any such tests his charges shall be borne by the Contractor only if the test discloses that the said stores or materials are not in accordance with the provisions of the Contract.

Should the Engineer-in-charge consider at any time during the construction or re-construction, on prior to the expiry of the "MAINTENANCE PERIOD" that the stores or materials provided by the Contractor are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract (in respect whereof the decision of the Engineer-in-charge shall be final and conclusive) the Contractor, shall on demand, in writing from the Engineer-in-charge specifying the Stores or materials complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith remove the stores or materials so specified and provide other proper and suitable stores or materials at his own expense; to the entire satisfaction of the Engineer-in-charge and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in his demand aforesaid the Engineer-in-charge may replace within others the stores or materials complained of at the risk and expense in all respects of the Contractor. The liability of the contractor under this condition shall not extend beyond the maintenance period aforesaid except as regards stores or materials which the Engineer-in-charge shall have previously given notice to the contractor to replace. (*MAINTENANCE PERIOD for any work under this Organisation will be SIX MONTHS FROM THE DATE OF ACTUAL COMPLETION of the particular work and handing over to B.H.E.L).

All stores and materials brought to the Site shall become and remain the property of B.H.E.L and shall not be removed from the site without prior written approval of the Engineer-in-charge. However, when the work is finally completed, the Contractor shall at his own expense forthwith remove from the site all surplus stores or materials originally supplied by him and upon such removal, the same shall revert in and become the property of Contractor. All B.H.E.L Stores and materials issued to Contractor for in-incorporation or fixing in the work and which, making due allowance for reasonable wear and tear/or waste, have not on completion of the work been so incorporated or fixed, shall be returned by the Contractor at his own expense to the place of issue.

Credit for surplus stores and/ or materials returned by the contractor to B.H.E.L will be given to him at a price based on the prevailing market rate but not exceeding that at which the said stores and materials were originally issued to him but due consideration shall be given to the allowance claimed by B.H.E.L in respect or any depreciation or damage suffered by the stores and/or materials whilst in the custody of the Contractor regarding which the decision of Engineer-in-charge shall be final and conclusive.

If, in the opinion of the Engineer-in-charge (which shall be final and conclusive) any stores, supplied by B.H.E.L have either during currency of the work or after completion of the work whilst under the custody of the Contractor, become damaged to such an extent that they cannot be usefully utilized, either in the same work or in other works, the Engineer-in-charge shall not accept the stores and in the event of his rejection the contractor shall be charged for the said Stores at a rate as fixed by the Accepting Officer. The Contractor shall not be entitled to any claim whatsoever on this account.

24. Tools and Plants on site:

All tools, plants and equipment brought to the site shall become the property of B.H.E.L and shall not be removed from the site without the prior written approval of the Engineer-in-charge when the work is finally completed or the Contract is determined for reasons other than the default of the Contractor he shall forthwith remove from the site all tools, plants, equipments etc., (other than those as may have been provided by B.H.E.L) and upon such removal, the same shall in, and become the property of the Contractor.

25. Statement of Hire Charges:

A monthly detailed statement of the hire charge incurred in respect of B.H.E.L tools, plants, equipments etc., shall be given to the Contractor by the Engineer-in-charge.

26. Precaution Against risks:

The Contractor shall be responsible for providing at his own expense, for all precautions to prevent loss or damage from any and all risks and to minimize the amount of any such loss or damage and for the necessary steps to be taken for the said purpose until the works have been handed over complete in all respect of the Engineer-in-charge.

The Contractor shall provide all watchmen necessary for the protection of the site, the work, the materials, tools, plants, equipments and anything else lying on the Site during the progress of the work. He shall be solely responsible for and shall take all reasonable and proper steps for

protecting, securing, lighting and watching, all places on or about the work and the Site which may be dangerous to any person whomsoever.

27. Notices and Fees:

The Contractor shall give all notices required by any Statutory provision or by the regulations and/or bylaws of any local Authority and/or of any Public Service, Company or Authority affected by the work or with whose system the same are or will be connected. The Contractor shall pay and indemnify B.H.E.L against any fees and charges payable under such Acts. Regulation and/or bylaws in respect of the work and shall make and supply all drawings and plans required in connection with any such notice.

28. Setting out of the Works and Protective and Maintaining Signals and Works:

The Engineer-in-charge shall supply dimensioned drawings, levels and other information necessary to enable the contractor to set out the work. The Contractor shall at his own expense set accurately according to the drawings and figured dimension thereon, all the work comprised in the contract and any extras or additions there-to and shall be solely responsible for their being so set out and executed. All bench marks, pegs, signals on the surface, alignment stones, milestones and all similar marks whether put in by B.H.E.L Authorities for the purpose of checking the Contractor's work or in the nature of permanent survey marks will during the tenure of the contract, be under the care of the Contractor who shall, at his own expense, take all proper and reasonable precautions and care to preserve and maintain them in their true position. In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may, if deemed necessary, be replaced by the Engineer-in-charge at the Contractor's expense and the cost thereof deducted from any money then or thereafter becoming due to the Contractor.

Where requested by the Contractor, the level marks, center line and chainage pegs corresponding to those shown on the Drawing will be pointed out to the Contractor on the ground but all bench marks or chainage pegs additional to those shown on the Drawing will be set out by BHEL authorities.

29. Site Drainage:

All water that may accumulate on the site during the progress of the work or in trenches and excavations shall be removed to the entire satisfaction of the Engineer-in-charge and at Contractor's expense.

30. Excavations, Relics Etc.:

Material of any kind obtained from excavation on the site shall remain the property of BHEL and shall be disposed off as Engineer-in-Charge directs.

All gold, silver, oil and other minerals of any description and all precious stones, coins, treasures, relics, antiques and other similar items which may be found in or upon the site shall be the property of Bharat Heavy Electricals Limited and the Contractor shall duly preserve the same to

the satisfaction of the BHEL and shall from time to time deliver the same to such person or persons as the B.H.E.L may appoint to receive the same.

31. Foundations:

The Contractor shall not lay any foundations until the excavations for the same have been examined and approved in writing by the Engineer-in-charge.

32. Covering-in Work:

The Contractor shall give reasonable notice in writing to the Engineer-in-charge whenever any work is to be permanently covered up or concealed, whether by earth or other means so that it can finally be inspected or measured if necessary. In default of so doing, the Contractor shall, if required by the Engineer-in-charge uncover such work at his own expense.

33. Approval of works by Stages:

All work embracing more than one process shall be subject to examination and approval at each stage thereof and the Contractor shall give due notice in writing to the Engineer-in-charge when each stage is ready. In default of such notice being received, the Engineer-in-charge shall be entitled to approve the quality and extent thereof at any time he may choose and in the event of any dispute, the decision of the Engineer-in-charge thereon shall be final and conclusive.

34. Execution of the Work:

The work shall be executed in a workman-like manner and to the satisfaction in all respects of the Engineer-in-charge.

The Engineer-in-charge will communicate or confirm his instructions to the Contractor in respect of the execution of the Work in a "Work Site Order Book" maintained at his office and the Contractor shall visit this office daily and shall confirm receipt of such instructions by signing the relevant entries in this book. Such entries will rank as order or notices in writing within the intent and meaning of these conditions.

35. Day Work:

No day-work shall be performed without the prior written instructions of the Accepting Officer.

The Contractor shall give to the Engineer-in-charge reasonable notice of the start of any work ordered to be executed by day-work and shall deliver to the Engineer-in-charge within two days of the end of each pay week a return in duplicate giving full detailed accounts of labour and materials for that pay-week. One copy of each of these returns, if found correct, will be certified by the Engineer-in-charge and returned to the contractor and must be produced at the time of adjustment of accounts.

An invoice in duplicate signed by the Contractor or his agent shall be sent with each delivery of materials for day-work and the Contractor will be furnished with a receipt signed by the Engineer-in-charge specifying the description, quantities weight or measurement (as the case may be) of the articles approved, reference will be made in this receipt in the return aforesaid and the Contractor's Bill.

In the case of Lumpsum Contracts, the rates to be charged and the percentage addition for profit and establishment charges, etc., will be agreed upon between the Accepting Officer and the Contractor prior to the execution of the work.

36. Inspection of the Work:

B.H.E.L Officers concerned with the Contract shall have power at any time to inspect and examine any part of the work and the Contractor shall give such facilities as may be required to be given for such inspection and examination. Should Engineer-in-charge consider, at any time during the expiry of the maintenance period, that any work has been executed with unsound, imperfect or unskilled workmanship or of a quality inferior to that contracted for or not otherwise in accordance with the contract (in respect) whereof the decision of the Engineer-in-charge shall be final and conclusive the Contractor shall on demand in writing from the Engineer-in-charge specifying the fault notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct the work so specified in whole or in part as the case may be required at his own expense to the entire satisfaction of the Engineer-in-charge and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in his demand as aforesaid, the Engineer-in-charge may carry out the work by other means at the risk and expense in all respects of the Contractor. However, the liability of the Contractor under this condition shall not extend beyond the maintenance period except as regards workmanship which the Engineer-in-charge shall have previously given notice to the Contractor to rectify.

37. Responsibility for Building:

In the event of any building or part of any building being handed over to the Contractor for the execution of work thereto under the provisions of the Contract, he shall give a written receipt for all fixtures, glass etc. and he shall be required to make good at his own expense all damages resulting from any cause whatsoever while in his charge and on completion of the work to deliver the said building or part thereof in a clean state complete in every particular to the entire satisfaction of the Engineer-in-charge.

38. Insurance:

The contractor shall within one month after the date of the acceptance of the contract, insure the work against loss or damage to the contract works, temporary work and materials erected in performance of the contract on "all risks" basis from the time of arrival on site until taken over by BHEL on completion of the contract.

The cover shall also include wherever necessary the risks of testing including breakdown or explosion of plant and machinery undergoing testing, trial and commissioning operations. The insurance shall also specifically cover removal of debris cost. The sum insured shall represent the estimated full value of the contract works inclusive of value of free supply materials by BHEL, transport charges, customs dues, express freight, overtime charges, cost of erection, value of constructional plants and machinery, removal of debris and escalation of costs where the contract includes a maintenance period, the insurance cover shall specifically include the contractors' liabilities during the maintenance period. The insurance shall also be extended to cover third party personal injury and property damage for a sum to be specified by BHEL. The insurance shall be effected in the name of BHEL and the contractor shall submit to BHEL a draft of the insurance policy for approval. The policy when issued will be lodged with BHEL together

with receipts of premium for such insurance and the contractor shall maintain such policies in force until the obligations of the contractor are fully discharged.

If the contractor fails to comply with the terms of this condition the Accepting officer may insure the work and may deduct the amount of premiums from any money that may become payable to the contractor or may at his discretion refuse payment of any advances to the contractor until the contractor shall have complied with the terms of this condition. This provision does not, however, absolve the contractor of his responsibility for taking up the insurance. The contractor is, therefore, primarily responsible for taking up the insurance in time.

39. Damage and loss to private property and injury to workmen:

The contractor shall at his own expense reinstate and make good to the satisfaction of the Engineer-in-charge and pay compensation for any injury, loss or damage occasioned to any property or rights whatever including property and rights of **B.H.E.L.**, (or agents, servants or employees of **B.H.E.L.**) the injury loss or damage arising out of or in anyway in connection with the execution or purported execution of the contract and further the contractor shall indemnify **B.H.E.L.**, against all claims enforceable against **B.H.E.L.**, or any agent, servant, or employee of **B.H.E.L.** a private person, in respect of any such injury (including injury resulting in death loss or damage to any person) whosoever or property, including all claims which may arise under the workmen's Compensation Act or otherwise, or which would be enforceable against **B.H.E.L.**

40. Completion:

The works shall be completed to the entire satisfaction of the Engineer-in-charge and in accordance with the Contractor's forecast of Time and Progress where operative, and all unused stores and materials, tools, plants, equipments, temporary buildings and things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer-in-charge at the Contractor's expense and/or before the Scheduled date of completion.

The **B.H.E.L.** shall have power to take over from the Contractor from time to time each sections of the work as have been completed to the satisfaction of the Engineer-in-charge.

In case the Contractor fails to remove any of his properties, assets or fails to clear the rubbish and waste materials within 30 days of the completion of the contract, it is lawful for the contractee, that is **BHEL** to take such action as it deems fit to clear dispose of such properties, assets or such waste materials and charge the contractor any expenses incurred thereon.

The Engineer-in-charge shall certify to the Contractor the date on which the work is completed and the state thereof.

The Engineer-in-charge shall also certify to the Contractor the state of the work at the end of maintenance period, where applicable.

41. Compensation for Delay:

If the contractor fails to maintain the required progress in terms of condition 7 or to complete the work and clear the site on or before the contracted or extended period of completion, he shall, without prejudice to any other right or remedy of the **B.H.E.L.** on account of such breach,

pay as agreed compensation an amount calculated as stipulated below or such smaller amount as may be fixed by the BHEL on the contract value of the work for every week that the progress remains below that specified in condition 7 or that the work remains incomplete.

This will also apply to items or group of items for which separate period of completion has been specified.

For this purpose the term 'Contract Value' shall be the value at contract rates of the work as ordered.

- | | | |
|---|----|------------------------|
| a. Completion period (as originally-stipulated) | -- | at 1 percent per week. |
| Not exceeding 6 months. | | |
| b. Completion period (as originally-stipulated) | -- | at ½ percent per week |
| Exceeding 6 months and not exceeding 2 years. | | |
| c. Completion period (as originally-stipulated) | -- | at¼ percent per week |
| Exceeding 2 years. | | |

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed the under noted percentage of the contract value or of the contract value of the item or group of items of work for which a separate period of completion is given:

- | | | |
|---|----|-------------|
| a. Completion period (as originally-stipulated) | -- | 10 percent. |
| Not exceeding 6 months. | | |
| b. Completion period (as originally-stipulated) | -- | 7½ percent. |
| Exceeding 6 months and not exceeding 2 years. | | |
| c. Completion period (as original-stipulated) | -- | 5 percent. |
| Exceeding 2 years | | |

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the B.H.E.L.

42. Laws Governing the Contract:

This contract shall be governed by the Indian Laws for the time being inforce.

43. Breach of contract (or) Cancellation /Termination of contract:

*In case of breach of contract (or) cancelaltion/termination of contract, wherever the value of security instruments like performance bank guarantee/Security deposit 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:*

- a. from dues available in the form of Bills payable to defaulted supplier against the same contract.*

b. from the dues payable to defaulted supplier against other contracts in the same Region/Unit /any other region/unit

c. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier.

Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., will be applied as per provisions of the contract.”

44. Cancellation of Contract for Corrupt Acts:

The Accepting Officer, whose decision shall be final and conclusive, shall, without prejudice to any other right or remedy which shall have accrued or shall accrue thereafter to Bharat Heavy Electricals Limited, cancel the contract in any of the following cases and the Contractor shall be liable to make payment to B.H.E.L for any loss or damage resulting from any such cancellation for default.

If the Contractor shall:

- a. Offer or give or agree to give to any person in BHEL service any gift or consideration of any kind as an inducement or reward for doing or for bearing to do or for having done or forborne to do a day act in relation to the obtaining or execution of this or any other contract for BHEL service **OR**
- b. Enter into a contract with B.H.E.L in connection with which commission has been paid or agreed to be paid by him or with his knowledge, unless the particulars of any such commission and the terms of payment thereof have previously been disclosed in writing to the Accepting Officer, **OR**
- c. Obtain a contract with B.H.E.L as a result of ring tendering or by non-bonafide methods of competitive tendering without first disclosing the fact in writing to the Accepting Officer.

45. Cancellation of Contract for Insolvency, Assignment or Transfer or Sub-Letting of Contract:

The Accepting Officer, without prejudice to any other right or remedy which shall accrue thereafter to B.H.E.L shall cancel the contract in any of the following cases:

If the Contractor,

- a. Being an individual, or if a firm any partner thereof shall at any time be adjudged bankrupt or have a receiving order or orders for administration of his Estate made against him or shall take any proceedings, for liquidation or composition under any Bankruptcy Act for the time being in force or make any conveyance or assignment of his effects of composition or arrangement for the benefit of his creditor or purport to do so, or if any application be made under any Bankruptcy Act for the time being in force for the sequestration of his Estate or if a trust deed be granted by him on behalf of his creditors, **OR**

- b. Being a Company, shall pass a resolution or the Court shall make an order for the liquidation of its affairs, or a Receiver or Manager on behalf of the debentures holders shall be appointed or circumstances shall arise which entitle the court or debentures holders to appoint a Receiver or Manager **OR**.
- c. Assigns, transfers, sub-lets or attempts to assign, transfer or sub-let any portion of the work without the prior written approval of the Accepting Officer. **OR**
- d. Shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days.

46. Cancellation of contract in part or in full for contractor's default:

If the Contractor:

- a) makes default in commencing the work within a reasonable time from the date of handing over of the site and continue in that state after a reasonable notice from Engineer-in-charge, **OR**
- b) in the opinion of the Engineer-in-charge at any time, whether before or after the date or extended date for completion, makes default in proceeding with the work, with due diligence and continue in that state after a notice of seven days from Engineer-in-charge, **OR**
- c) fails to comply with any of the terms and conditions of the contract or after 7 days notice in writing with orders properly issued there under, (**OR**)
- d) fails to complete the work order and items of work individual dates for completion and clear the site on or before the date of completion or fails to achieve the progress as set out under clauses 7 of these General Conditions of Contract.

The Accepting Officer may, without prejudice to any other right or remedy which shall have accrued or shall accrue thereafter to B.H.E.L cancel the contract as a whole or in part thereof or only such work order or items of work in default from the contract.

47. Termination of Contract for Death:

Without prejudice to any of the rights or remedies under this contract if the contractor dies, the accepting Officer shall have the opinion of terminating the contract without compensation to the contractor.

48. Special Powers of Determination:

If at any time after the acceptance of the tender B.H.E.L shall for any reason whatsoever not require the whole or any part of the work, to be carried out the project Manager/Engineer shall give notice in writing of the fact to the Contractor who shall have no claim to any payment of compensation or otherwise howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of the foreclosing of the work.

He shall be paid at Contract rates, for the full amount of the work executed including such additional works, e.g. clearing of site, etc., as may be rendered necessary by the said fore closing. He shall also be allowed a reasonable payment (as decided by the Accepting Officer) for any

expenses sustained on account of labour and materials collected but which could not be utilised on the work, as verified by the Engineer-in-charge. Neither shall the Contractor have any claim for compensation on account of any alterations having been made in the original specifications, drawings, designs and instructions, involving any curtailment of the work as originally contemplated.

49. Fair Wage

- a) The contractor shall pay not less than the “Fair Wage” to labourers engaged by him on the work. “Fair Wage” means wage whether for time or piece work notified at the time of inviting tenders for the work and where such wages have not been notified the wages prescribed by the Project Manager/Engineer for the stations at which the work is done.
- b) The Contractor shall not withstanding the provision of any contract to the contrary, cause to be paid a “Fair Wage” to labourers indirectly engaged on the work, including any labour engaged by the Sub-Contractors in connection with the said work, as if the labourers had been directly employed by him.
- c) In respect of labourers directly or indirectly employed on the work for the performance of the Contractors part of this Agreement, the Contractor shall comply with or cause to be complied with B.H.E.L Contractor’s Labour Regulations (appended here to as Annexure ‘A’ to these conditions) in regard to payment of wages, wage period deduction from wages, recovery of wages not paid and deductions unauthorisedly made, maintenance of wage book, wage-slips publication of scale of wage and other terms of employment inspection and submission of periodical returns and all other matters of alike nature.
- d) The Engineer-in-charge concerned shall have the right to deduct from the money due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers non-payment of wages or of deductions made from his or their wages which are not justified by the terms of the contract or non-observance of the regulations.
- e) The Contractor shall be liable primarily for all payments to be made under the contract and for the observance of the Regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractors.
- f) The regulations aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this Contract.

CHAPTER IV

VALUATION AND PAYMENT

50. Records and Measurements:

1. All items having a financial value shall be entered in the BHEL Measurement Book so that a complete record is obtained of all works performed under the Contract. Buildings, etc., priced in Schedule ‘A’ (Bill of quantities) of the contract as a unit lumpsum will be entered by number

at the unit lumpsum. Work carried out for agreed lumpsum will be described and similarly recorded. Lumpsum omissions will be entered for deduction.

2. Work which fails to be measured in detail shall be measured physically, without reference to any local custom that may obtain excepting where it may otherwise be directed in the tender documents i.e In cases where detailed measurement is not possible, the work should be quantified through physical measurements, without considering any prevailing local customs, except when the tender documents specify otherwise. The measurements shall be taken jointly by any person duly authorized on the part of the BHEL and by the Contractor as per interval or program fixed in consultation with Engineer-in-Charge or his/her authorized representative. The Contractor shall, without extra charge, provide assistance with appliance and other things necessary for recording measurements/verification of measurements/re-checking of measurements if any. The Contractor shall bear all the costs of recording /verification/re-checking of measurements of his work.
3. Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.
4. The contractor shall give not less than seven days' notice to the Engineer-in-Charge or his/her authorized representative in charge of the work before covering up or otherwise placing beyond the reach of checking and/or test checking the measurement of any work in order that the same may be checked and/or test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking and/or test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his/her authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of checking and/or test checking measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.
5. All measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the Engineer-in-Charge or his/her authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his/her authorized representative.
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.
7. It is also a term of this contract that checking and/or test checking the measurements/ levels of any item of work in the measurement book and/or its payment in the interim, on account of final bill

shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

8. All such measurements and levels of work done during previous month shall be recorded by the contractor and printed in pages of A-4 size as per the format of the department so that a complete record is obtained of all the items of works executed under the contract during the said period.
9. Based on the above measurement sheets, contractor shall work out the financial value of the same as per the agreed price schedule in a prescribed format and submit the same as an abstract.
10. The Measurement sheets and abstracts, of work done during previous month (along with soft copy in MS-Excel in prescribed format) shall be computerized and submitted in triplicate through letter of transmittal to the Engineer-in-charge by seventh day of succeeding month. One copy shall be acknowledged & returned.
11. On submission of documents mentioned above, upon verification by the Engineer-in-charge and/or his/her authorized representative, if any change is required, then the same shall be done by the Engineer-in-charge and/or his/her authorized representative in the same under the dated initials signature, name and designation of the person seeking the change in two copies of such documents. All changes are to be finally authorized by the Engineer-in-Charge.
12. Thereafter one copy of the corrected Measurement sheets & Abstract shall be sent by the Engineer-in-charge to the contractor and the other copy shall be retained by the Engineer-in-charge in his office. If there is no correction, the same shall be recorded by the Engineer-in-charge and sent to the contractor.
13. The contractor shall then have to submit final Measurement sheets & abstract without any corrections, in triplicate through letter of transmittal signed by the authorized signatory of the contractor to the Engineer-in-Charge who shall get it cross checked from the already corrected Measurement sheets & Abstract.
14. During submission of final Measurement sheets & abstract, the contractor shall have to submit **GST Complaint Invoice copies (5 Originals)** in a prescribed format along with supporting documents such as
 - a) **Two copies of** Statutory compliance details such as
 - I. Attendance register,
 - II. Wage register,
 - III. Bank statement as a proof for remitting wages to Labors/persons engaged,
 - IV. ESI, PF & Bonus (both Employer and Employee contributions) amounts which are to be remitted for total wages to be paid and respective challansare to be produced along with invoices for all the respective Labors/persons engaged in the contract for the particular service period.
 - b) Details of bought out items by contractor

c) Quality documents as per Quality Assurance Plan

15. Once the Engineer-in-charge is satisfied that all measurements and abstract are free from any corrections, modifications, over-writings, and insertions etc., Final corrected measurements shall be entered in the E-Measurement Book, the same shall be printed & pasted in BHEL Measurement Book, signed and dated by both parties in such a manner that part of the signature appear on the computer generated statement and part on the Measurement Book sheet.
16. If the contractor fails to submit the measurements along with abstract of measurements for the work done continuously for two months, then the Engineer-In- charge shall get the executed work measured ex-parte after giving a notice of seven working days to the contractor in writing either through site order book or any other mode of correspondence. The ex-parte measurements so undertaken by the Engineer-in-Charge shall be final and binding on the Contractor outside the purview of Arbitration & reconciliation clause mentioned in the tender documents.
17. Resources deployed by the Engineer-in-charge for ex-parte measurements, subject to minimum of Rs 7500.00 per such two-monthly cycle of ex-parte measurement, shall be at the risk and cost of the contractor and shall be recovered from his bill. A copy of such ex-parte measurements shall be sent to the contractor for his record.
18. Upon the submission of the documents mentioned above and on completion of signing of BHEL Measurement Book by the authorized signatory of the contractor, the contractor's invoice will become eligible for payment processing.
19. Payment shall be made by BHEL after effecting the recoveries due from the contractor. 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.
20. The contractor shall, once every month, submit to the Engineer-in-charge with a copy to the Section-In charge/Department head details of his claims for the work done by him up to and including the previous month which are not covered by his Contract Agreement in any of the following respects;
 - a) Deviation from the items and Specifications provided in the contract documents.
 - b) Extra Items/New Items of work
 - c) Quantities in excess of those provided in the contract schedule.
 - d) Items in respect of which rates have not been settled. contractor should, in addition furnish a clear certificate to the effect that the claims submitted by him as aforesaid cover all his claim and that no further claims shall be raised by him in respect of the work done up to and including the period under report.

51. Valuation of Deviations:

Rates for deviated items of work will be fixed as follows:-

CONTRACTOR

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ACCEPTING OFFICER

1. For any item of work required to be carried out after the contract has been awarded and which is not covered by Contractor's Schedule but is covered by B.H.E.L Schedule of rates the rate payable for such a fresh item will be derived from B.H.E.L Schedule by the method of proportion as follows:
 - a. In the same proportion to rate in B.H.E.L Schedule of Rates as the tendered rate for the nearest analogous item of work in Contractor's schedule bears to rate for the particular analogous item of work in B.H.E.L Schedule of rates.
 - b. If a single appropriate analogous item of work is not available in both Schedule (Contractor's and B.H.E.L Schedule) then the method of proportion will be applied to the nearest analogous group of items available in both the Schedules referred to i.e. in the same proportion as the total tendered cost of that particular group of items (the sum of the products of the tendered rates and the quantities for which orders are placed bears to the total cost of the same items and quantities at the B.H.E.L Schedule of Rates.
 - c. If even an appropriate analogous group of items is not available in Contractor's Schedule and B.H.E.L Schedule, then the methods of proportion will be applied to all those items of the whole work, which are available in both the Schedules and for which orders have been placed on the contractor, i.e., in the same proportion as the total cost of all these items of work (the sum of the products of the tendered rates and the quantities for which orders are placed) bears to the total cost of the same items and quantities at the B.H.E.L Schedule of Rates.
2. If any work not covered by any of the foregoing is ordered on the Contractor, the basis of payment shall be decided by the Accepting Officer whose decision shall be final and conclusive and binding on the parties.

The selection of analogous items or analogous group of items referred to above shall be done by the Engineer-in-charge. Where the rates for deviated items or new items of work can be derived by the selection of different analogous items or analogous group of items, the lowest of all such derived rates shall be taken as the correct rate.

In the case of the contracts for which the Engineer-in-charge is the Accepting Officer, all disputes regarding the settlement of rates of deviated or new items or work shall be referred to the Deputy Manager/Manager whose decision shall be final and conclusive as the case may be.

52. Reimbursement / Refund on Variation in Price, Materials:

If after submission of the tender and/or during the progress of the works, the price of any material (not being a material supplied from the B.H.E.L store in accordance with the Conditions of the Contract) is increased or decreased by an Act of Legislature (Central or State) and/or any notification there under or on account of new duties or levies such as octroi or on account of increase or decrease in such duties affecting the price of materials required for incorporation in the works and made from materials of which the price has increased or decreased as aforesaid and the Contractor has thereupon to pay in respect of such material or item a price which is higher or lower than the price of that material or item as prevailing immediately before the passing of such Act or levying, increasing/ decreasing of such duty, the B.H.E.L shall in case of

increase in price or the duty reimbursed to the contractor and incase of decrease in price, the B.H.E.L shall be entitled to a refund of the reduction price or the reduction in duty. Provided, however no reimbursement or refund shall be made if the increase/decrease is not more than 10% of the said price, and if so, the reimbursement or refund shall be made only on the excess over 10% provided always that any such increase shall not be payable if, in the opinion of the Deputy Manager/Manager (whose decision shall be final and conclusive) the increase is attributable to the delay in the execution of the contract within the control of the contractor or that any such increase has become operative after the contracted/or extended date of completion of the work or items of work in question.

The Contractor shall, for the purpose of this condition, keep such books of account and other documents as are necessary to show the amount of any increase claimed or any reduction available and shall allow inspection of the same by any duly authorized representative of the B.H.E.L and further shall at the request of the Engineer-in-charge furnish for verification such other information of the Engineer-in-charge may require.

The Contractor shall within a reasonable time of his becoming, aware of any alteration in the prices of any such materials, give notice thereof in writing to the Engineer-in-charge stating that the rate is submitted in pursuance to this condition together with all information relating thereto which he may be in a position to supply.

53. Advances on Account:

No payment shall be made for work estimated to cost less than Rupees **FIVE THOUSAND** till the whole of the work shall have been completed and a certificate of completion given by the Competent Authority.

In the case of work estimated to cost more than Rupees **FIVE THOUSAND** the contractor may at intervals of not less than one month or as otherwise provided for in the Contract Documents, counting from the date on which order to commence work is given by Engineer-in-charge submit claims on B.H.E.L forms for payment of advances on account of work done and of materials delivered in connection with the Contract.

The contractor shall be paid in respect of such claims to the extent approved and passed by the Engineer-in-charge subject a maximum of 90% of the value of the work actually executed to the satisfaction of the Engineer-in-charge. The certificate of the Engineer-in-charge regarding such approval and passing of the sums so payable shall be final and conclusive against the Contractor.

“After the full amount of Security Deposit is made up through the 10% deduction from On account” bills, 100% payment of all subsequent bills may be made to the Contractor.

The Contractor may also be paid during the progress of the work 75% of the value of any materials which are in the opinion of the Engineer-in-charge in accordance with the Contract, and are actually required for incorporation in the work and which have reasonably been brought to the site in connection therewith and are adequately stored and / or protected against damage by weather or other causes, but which have not at the time of payment of the advance been incorporated in the work on furnishing a formal hypothecation deed. Payment of such advances, however, shall be purely at the discretion of the Deputy Manager/Senior Engineer provided

always that payments shall not be made under these periodical certificates in respect of perishable materials like lime, cement, timber, sand, kankar, etc., Any sums/due from the Contractor on account of Tools and Plant, Stores or any other items provided by B.H.E.L shall be deducted from the respective advances, the Engineer-in-charge shall from time to time certify the sums payable to the contractor after retaining the reserves.

Any certificate relating to work done or materials delivered may be modified or corrected by any subsequent interim certificate or by the final certificate and no certificate of the Engineer-in-charge supporting an advance payment shall itself be conclusive evidence that any work or materials to which it relates are in accordance with the contract. All such intermediate payments shall be regarded as advances against the final payment only and shall not be considered as an admission of the due performance of the contract or any part thereof in any respect or the accruing of any claim whatsoever.

Such intermediate payment shall not conclude, determine or affect in any way the powers of the Engineer-in-charge as to the final settlement and adjustment of the accounts or otherwise, or in any way vary or affect the contract.

54. Final Bill:

As soon as possible after the completion of the work to the satisfaction of the Engineer-in-charge, the contractor shall forward a certified final account on BHEL form, in duplicate.

It shall be accompanied by all abstracts, vouchers etc., in support thereof and shall be prepared in the manner prescribed by the Engineer-in-charge.

No claims will be entertained after the receipt of the final bill.

The Contractor shall be entitled to be paid the final sum less the value of payments already made on account subject to certification of the final bill by the Engineer-in-charge. Any sums due from the contractor on account of Tools & Plant, Stores or any other items provided by BHEL not yet recovered from the contractor shall be deducted from the final sum aforesaid.

No charge shall be allowed to the Contractor on account of the preparation of the final bill.

55. Payment of Bills:

All payment to be made to the Contractor under this contract shall be by the National Electronic Funds Transfer and/or RTGS Transfer mode by credit to mentioned Bank Account in the EFT form attached with this qualification bid

56. Recovery from Contractor:

Whenever under the contract any sum of money shall be 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 under any other Contract with BHEL or from his Security Deposit or he shall pay the claim on demand.

57. Post Technical Audit of Work and Bills:

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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 in the manner provided in the preceding sub-paragraphs provided however that no such recovery shall be enforced after three years of passing the final bill.

58. Refund of Security Deposit:

50% of the Security Deposit mentioned in condition 16 above, may be refunded to the contractor in respect of all contracts on completion of work and after payment of final bill and the balance 50% on expiry of the maintenance period, (described under clause 23) provided the contractor shall have rendered a "No-Demand" Certificate. In case of works where maintenance period is not involved 100% of the Security Deposit may be refunded after payment of final bill provided that the contractor shall have rendered a "No-Demand Certificate".

59. Arbitration:

Except where otherwise provided for in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions hereinbefore mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the work or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the Executive Director / General Manager of BHEL and if ED is unable or unwilling to act, to the sole arbitration of some other person appointed by the ED / General Manager, willing to act as such arbitrator. The cases referred to arbitration shall be other than those for which the decision of the Manager / Senior Engineer / Engineer-in-charge is expressed in the contract to be final and conclusive. There will be no objection if the arbitrator so appointed is an employee of B.H.E.L and that he had to deal with the matters to which the contract relates and that in the course of his duties as such he had expressed views on all or any of the matters in dispute or difference.

The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, such Executive Director / General Manager as aforesaid at the time of such transfer, vacation of office or inability to act, shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

Subject as aforesaid the provision of the Arbitration & Reconciliation Act, 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is a term of the contract that the party involving arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute.

The arbitrator(s) may from time to time with consent of the parties enlarge the time for making and publishing the award.

The work under the Contract shall, if reasonably possible, continue, during the arbitration proceedings and no payment due or payable, to the Contractor shall be withheld on account of such proceeding.

The Arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the Parties fixing the date of first hearings.

The arbitrator shall give a separate award in respect of each dispute or difference referred to him.

The venue of arbitration shall be such place as may be fixed by the Arbitrator in his sole discretion.

The award of the arbitrator shall be final, conclusive and binding on all parties to this contract.

In the event of disputes or differences arising between one public sector enterprise and a Govt. Department or between two public sector enterprises the above stipulations shall not apply the provisions of BPE office memorandum No. BPE/CL 001/ 76MAN / 2 (1.10) 75-BPE (GM-1) dated 1st January 1976 or its amendments for arbitration shall be applicable.

CHAPTER V

60. BHEL CONTRACTOR'S LABOUR REGULATIONS

1. Definition:

In these regulations, unless otherwise expressed or indicated, the following words and expressions shall have the meaning hereby assigned to them.

- a. "Labour" means workers employed by a contractor directly, or indirectly through a sub-contractor, or by an agent on his behalf on a payment not exceeding Rs.500 per month.
- b. "Fair Wage" means wages, which shall include wages for weekly day of rest and other allowances, whether for time or piece work, after taking into consideration prevailing market rates for similar employments in the neighborhood but shall not be less than the minimum rates of wages fixed under the minimum Wages Act.
- c. "Contractor" for the purpose of these Regulations shall include an agent or Sub-Contractor employing labour on the work taken on contract.
- d. "Inspecting Officer" means any Labour Enforcement Officer, or Assistant Labour Commissioners of the Chief Labour Commissioner's Organization.
- e. "Form" means a form appended to these Regulations.

2. Notice of Commencement:

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The Contractor shall, within **SEVEN DAYS** of commencement of the work, furnish in writing to the Inspecting Officer of the area concerned the following information with copy to the Engineer-in-charge.

- a) Name and situation of the work.
- b) Contractor's name and address.
- c) Particulars of the Department for which the work is undertaken.
- d) Name and address of sub-contractors as and when they are appointed
- e) Commencement and probable duration of the work
- f) Number of workers employed and likely to be employed,
- g) 'Fair wages' for different categories of workers.

3.

- (i) Number of hours which shall constitute a normal working day:
The number of hours which shall constitute a normal working day for an adult shall be **NINE** hours. The working day of an adult worker shall be so arranged that of intervals, if any, for rest it shall not spread over more than twelve hours on any day. When an adult worker is made to work for more than **NINE** hours on any day or for more than FORTY-EIGHT hours in any week he shall in respect of overtime work, be paid wages at double the ordinary rate of wages.
- (ii) Weekly day of rest: Every worker shall be given a weekly day of rest which shall be fixed and notified atleast TEN days in advance. A worker shall not be required or allowed to work on the weekly rest day unless he has or will have a substituted rest day, on one of five days immediately before or after the rest day. Provided that no substitution shall be made which will result in the worker working for more than ten days consecutively without a rest day for a whole day.

Where in accordance with the foregoing provisions a worker works on the rest day and has been given a substituted rest day he shall be paid wages for the work done on the weekly rest day at the overtime rate of wages.

NOTE: The expression 'Ordinary rate of wages' means the fair wage the worker is entitled to.

4. Display of Notice Regarding Wages, Weekly Day of Rest, Etc.:

The Contractor shall before he commences his work on contract display and correctly maintain and continue to display and correctly maintain in clean and legible condition in conspicuous places on the works, notice in English and in the local Indian languages, spoken by majority of workers, given the rate of fair wages, the hours of work for which such wages are payable, the weekly rest days workers are entitled to and name and address of the Inspecting Officer. The Contractor shall send a copy each of such notices to the Inspecting Officers and the Engineer-in-charge.

5. Fixation of Wage Periods:

The Contractor shall fix wage periods in respect of which wages shall be payable. No wage period shall normally exceed one week.

6. Payment of Wages:

Wages due to every worker shall be paid to him direct through bank account. All wages shall be paid in current coins or currency or in both.

Wages of every worker employed on the contract shall be paid where the wage period is one week, within, **THREE DAYS** from the end of the wage period, and in any other case before the expiry of the 7th day or 10th day from the end of the wage period according as number of workers does not exceed 1,000.

- (i) When employment of any worker is terminated by or on behalf of the contractor, the wages earned by him shall be paid before expiry of the day succeeding the one on which his employment is terminated.
- (ii) Payment of wages shall be made at the work site on a working day except when the work is completed before expiry of the wage period, in which case final payment shall be made at the work site within 48 hours of the last working day and during normal working time.

NOTE: The term "Working Day" means a day on which the work on which labour is employed is in progress.

7. Register of Workmen:

A register of workmen shall be maintained in the form appended to these regulations and kept at the work site or as near to it as possible, and the relevant particulars of every workmen shall be entered therein within **THREE** days of his employment.

8. Employment Card:

The Contractor shall issue an employment card in the Form appended to these regulations to each worker on the day of work or entry into his employment. If a worker has already any such card with him issued by the previous employer the contractor shall merely endorse that Employment Card with relevant entries. On termination of employment the Employment Card shall again be endorsed by the Contractor and returned to the worker.

9. Register of Wages etc.:

- (i) A register of Wages-cum-Muster Roll in the Form appended to these regulations shall be maintained and kept at the work site or as near to it as possible.
- (ii) A wage slip in the form appended to these regulations shall be issued to every worker employed by the Contractor atleast a day prior to disbursement of wages.

10. Fines and Deductions which may be made from wages:

- (i) Wages of worker shall be paid to him without any deductions of any kind except the following:
 - a. Fines;

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- b. Deductions for absence from duty, i.e., from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.
- c. Deduction for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money which he is required to account for, where such damage or loss is directly attributable to his neglect or default;
- d. Deductions for recovery of advances or for adjustment of overpayment of a wages. Advance granted shall be entered in a register;

and

- e. Any other deduction, which the B.H.E.L may from time to allow.
- (ii) No fines shall be imposed on a worker save in respect of such acts and omissions on his part as have been approved by the Chief Labour Commissioner.
- (iii) No fines shall be imposed on a worker and no deductions for damage or loss shall be made from wages until the worker has been given an opportunity of showing cause against such fines or deductions.
- (iv) The total amount of fines which may be imposed in any one wage period on a worker shall not exceed an amount equal to three paise in rupee of the wages payable to him in respect of that wage period.
- (v) No fine imposed on a worker shall be recovered from him in instalments, or after expiry of sixty days from the date on which it was imposed. Every fine shall deemed to have been imposed on the day of the act or omission in respect of which it was imposed.
- (vi) The Contractor shall maintain both in English and the local Indian language a list, approved by the Chief Labour Commissioner, clearly stating the acts and omissions for which penalty or fine may be imposed on a workman and display it in good condition in a conspicuous place on the work site.
- (vii) The Contractor shall maintain a register of fines and the register of deductions for damage or loss in the Forms appended to these regulations which should be kept at the place of work.

11. Register of Accidents:

The Contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:

- a. Full particulars of the labourers who met with the accident.
- b. Rates of Wages.
- c. Sex

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- d. Age
- e. Nature of accident and cause of accident.
- f. Time and date of accident.
- g. Date and time when admitted in hospital.
- h. Date of discharge from the hospital.
- i. Period of treatment and result of treatment.
- j. Percentage of loss of earning capacity and disability as assessed by Medical Officer.
- k. Claim required to be paid under Workmen's Compensation Act.
- l. Date of payment of compensation.
- m. Amount paid with details of the person to whom the same was paid.
- n. Authority by whom the compensation was assessed.
- o. Remarks.

12. Preservation of Registers:

The Register of Wages-cum-Muster Roll required to be maintained under these Regulations shall be preserved for 3 years after the date on which last entry is made therein.

13. Enforcement:

The Inspecting Officer shall either on his own motion or on a complaint received by him carry out investigations, and send a report to the Engineer-in-charge specifying the amounts representing workers, dues and amount of penalty to be imposed on the contractor for breach of these Regulations, that have to be recovered from the contractor, indicating full details of the recoveries proposed and the reasons therefore. It shall be obligatory on the part of the Engineer-in-Charge on receipt of such a report to deduct such amounts from payments due to the contractor.

14. Disposal of amounts recovered from the Contractor:

The Engineer-in-charge shall arrange payment to workers concerned within **FORTY FIVE** days from receipt of a report from the Inspecting Officer except in cases where the contractor had made an appeal under Regulation, 16 of these Regulations. In cases where there is an appeal, payments of workers, due would be arranged by the Engineer-in-charge, wherever such payments arise, within **THIRTY** days from the date of receipt of the decision of the Regional Labour Commissioner (R.L.C.).

15. Welfare Fund:

All money that are recovered by the Engineer-in-charge by way of workers, due which could not be disbursed to workers within the time-limit prescribed above, due to reasons such as where-about of workers not being known, death of a worker, etc., and also amounts recovered as penalty, shall be credited to a fund to be kept under the custody of B.H.E.L for such benefit and welfare of workmen employed by contractors.

16. Appeal against decision of Inspecting Officer:

Any person aggrieved by a decision of the Inspecting Officer may appeal against such decision to the Regional Labour Commissioner concerned within THIRTY days from the date of the decision, forwarding simultaneously a copy of his appeal to the Engineer-in-charge. The decision of the Regional Labour Commissioner shall be final and binding upon the Contractor and the workmen.

17. Representation of Parties:

- i. A workman shall be entitled to be represented in any investigation or enquiry under these Regulations by an Officer of a registered trade union of which the said trade union is affiliated or where the workman is not a member of any registered trade union, by an Officer of a registered trade union connected with, or any other workmen employed in the industry in which the worker is employed.
- ii. A Contractor shall be entitled to be represented in any investigation or enquiry under these Regulations by an officer of an association of contractors of which he is a member or by an officer of a Federation of Associations of Contractors to which the said association is affiliated or where the contractor is not a member of any association of employers, connected with, or by any other employer engaged in the industry in which the contractor is engaged.
- iii. No party shall be entitled to be represented by a legal practitioner in any investigation or enquiry under these Regulations.

18. Inspection of Books and other Documents:

The Contractor shall allow inspection of the Register and other documents prescribed under these Regulations by Inspecting Officer and the Engineer-in-charge or his authorized representative at any time and by the worker or his agent on receipt of due notice at a convenient time.

19. Interpretation etc.:

On any question as to the application, interpretation or effect of the Regulations the decision of the Chief Labour Commissioner or Deputy Chief Labour Commissioner (Central) shall be final and binding.

20. Amendments:

Central Government may, from time to time, add to or amend the Contractor's Labour Regulations and issue such directions as it may consider necessary for the proper implementation of the Contractor's Labour Regulations or for the purpose of removing any difficulty which may arise in the administration thereof, based on which the B.H.E.L., Contractor's Labour Regulations herein contained shall be subject to revision.

61. MODEL RULES FOR LABOUR WELFARE

1. Definition:

- a) 'Workplace' means a place at which, on an average, twenty or more workers are employed.
- b) 'Large Workplace' means a place at which on an average, 500 or more workers are employed.

- 2. First Aid:** At every workplace, there shall be maintained in a readily accessible place first-aid appliances including an adequate supply of sterilized dressings and sterilized cotton wool as prescribed in the Factory Rules of the State in which the work is carried on. The appliances shall

be kept in good order and, in large work places, they shall be placed under the charge of a responsible person who shall be readily available during working hours.

At large workplaces, where hospital facilities are not available within easy distance of the works First Aid posts shall be established and be run by a trained compounder.

Where large workplaces are remotely situated and far away from regular hospitals an indoor ward shall be provided with one bed for every 250 employees.

Where large workplaces are situated in cities, towns or in their suburbs and no beds are considered necessary owing to proximity of city or town hospitals, suitable transport shall be provided to facilitate removal of urgent cases to these hospitals. At other workplaces, some conveyance facilities shall be kept readily available to take injured person or persons suddenly taken seriously ill, to the nearest hospital.

At large workplaces there shall be provided and maintained an ambulance room of the prescribed sizes, containing the prescribed equipment and in the in-charge of such medical and nursing staff as may be prescribed. For this purpose the relevant provisions of the Factory Rules of the State Government of the area where the work is carried on may be taken as the prescribed standard.

3. **Accommodation for Labour:** The Contractor shall during the progress of the works provide, erect and maintain necessary temporary living accommodation and ancillary facilities for labour at his own expense and to standards and scales as approved by the Engineer-in-charge.
4. **Drinking Water:** In every workplace, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking. Where drinking water is obtained from an intermittent public water supply each workplace shall be provided with storage where drinking water shall be stored. Every water supply storage shall be at a distance of not less than 15 meters from any latrine drain or other source of pollution. Where water has to be drawn from an existing well, which is within such proximity of latrine drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and water-proof.

A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5. **Washing and Bathing places:** Adequate washing and bathing places shall be provided separately for men and women. Such places shall be kept in clean and drained condition.
6. **Scale of Accommodation in Latrines and Urinals:** These shall be provided within the precincts of every workplace latrines and urinals in an accessible place, and the accommodation, separately for each of these, shall not be less than at the following scales:

No.of Seats

- | | |
|---|---|
| a) Where number of persons does not exceed 50 | 2 |
| b) Where number of persons exceed 50 but does | |

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not exceed 100
c) For additional persons

3
3 Per 100 or part thereof.

In particular cases, the Engineer-in-charge shall have the power to increase the requirement, where necessary.

- 7. Latrines and Urinals:** Except in workplaces provided with water flushed latrines connected with a waterborne sewage system, all latrines shall be provided with receptacles on dry-earth system which shall be cleaned at least four times daily and at least twice during working hours and kept in a strictly sanitary condition. Receptacles shall be tarred inside and outside at least once a year.

If women are employed, separate latrine and urinals, screened from those for men and marked in the vernacular in conspicuous letters "For Women only" shall be provided on the scale laid down in rule 6. Those for men shall be similarly marked "For Men only" A poster showing the figure of a man and of a woman shall also be exhibited at the entrance to latrines for each sex. There shall be adequate supply of water close to latrines and urinals.

- 8. Construction of Latrines:** Inside walls shall be constructed of masonry or other non-absorbent material and shall be cement-washed inside and outside at least once a year. The dates of cement washing shall be noted in a register maintained for the purpose and kept available for inspection. Latrines shall have at least thatched roof.

- 9. Disposal of Excreta:** Unless otherwise arranged for by the local sanitary authority, arrangement for proper disposal of excreta by incineration at the workplace shall be made by means of a suitable incinerator approved by the local medical health and municipal or cantonment authorities. Alternatively local excreta may be disposed off by putting a layer of night soil at the Bottom of pucca tank prepared for the purpose and covering it with a 15 cm. layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn into manure).

The contractor shall, at his own expenses, carry out all instruction issued to him by the Engineer-in-charge to effect proper disposal of soil and other conservancy work in respect of Contractor's work-people or employees on the Site. The Contractor shall be responsible for payment of any charges which may be levied by municipal or cantonment authority for execution of such work on his behalf.

- 10. Provision of shelters during rest:** At every workplace there shall be provided, free of cost, four suitable sheds, two for meals and two others for rest, separately for use of men and women labour. Height of each shelter shall not be less than 3 meters from floor level to lowest part of roof. Sheds shall be kept clean and space provided shall be on the basis of at least 0.5 sq.m. per head.
- 11. Crèches:** At a place at which 20 or more women workers are ordinarily employed, there shall be provided at least one hut for use of children under the age of 6 years of such women. Huts shall not be constructed to a standard lower than that of thatched roof, mud floor and walls with wooden planks spread over mud floor and covered with matting.

Huts shall be provided with suitable and sufficient openings, for light and ventilation. There shall be adequate provision of sweepers to keep the places clean. There shall be two 'dais' in

attendance. Sanitary utensils shall be provided to the satisfaction of local medical, health and municipal or cantonment authorities. Use of huts shall be restricted to children, their attendants and mothers of children.

When the number of women workers is more than 25 but less than 50, the Contractor shall provide at least one hut and one Dais to look after children of women workers.

Size of crèche (s) shall vary according to the number of women workers employed. Creche(s) shall be properly maintained and necessary equipment like toys, etc. provided.

12. **Canteen:** A cooked food canteen on a moderate scale shall be provided for the benefit of workers wherever it is considered necessary.
13. Planning, setting and erection of the above mentioned structures shall be approved by the Engineer-in-charge, and the whole of such temporary accommodation shall at all times during the progress of the works be kept tidy and in a clean and sanitary condition to the satisfaction of the Engineer-in-Charge and at the Contractor's expense. The Contractor shall conform generally to sanitary requirements of local medical, health and municipal or cantonment authorities and at all times adopt such precautions as may be necessary to prevent soil pollution of the site.

On completion of the works the whole of such temporary structures shall be cleared away, all rubbish burnt, excreta or other disposal pits or trenches filled in and effectively sealed off and the whole of site left clean and tidy to the entire satisfaction of the Engineer-in-Charge, and at the Contractor's expenses.

14. **Anti-malarial precautions:** The Contractor shall, at his own expense, conform to all anti-malarial instructions given to him by the Engineer-in-charge, including filling up of any borrow pits which may have been dug by him.
15. **Enforcement:** The Inspecting Officer mentioned in the Contractors Labour Regulations or any other officer nominated in his behalf by the Engineer-in-Charge shall report to the Engineer-in-Charge all cases of failure on the part of the Contractor and or his sub-contractors to comply with the provisions of these Rules either wholly or in part and the Engineer-in-Charge shall impose such fines and other penalties as are prescribed in the conditions.

62. TERMS AND CONDITIONS REGARDING COMPLIANCE WITH VARIOUS LABOUR LAWS BY THE CONTRACTORS FOR BHEL

1. The Contractor shall not employ in connection with the work any person who has not completed 18 years of age.
2. The Contractor shall in respect of labour employed by him either directly or through subcontractors, comply with or cause to be complied with the following statutory provisions and rules and in regard to all matters provided therein.

- a) The Contract Labour (Regulation & Abolition) Act 1970 and the related Tamil Nadu Rules.
- b) The Minimum Wages Act 1948 and the related Tamil Nadu Rules.
- c) The Payment of Wages Act 1936 and the related Tamil Nadu Rules.
- d) The Factories Act 1948 and the related Tamil Nadu Rules.
- e) The Employee's Provident Fund & Miscellaneous Provisions Act 1952.
- f) The Employees State Insurance Act 1948.
- g) The Workmen Compensation Act 1923.
- h) The Industrial Disputes Act 1947.
- i) **The Payment of Bonus Act 1965.**
- j) **BOCW Act.** 1996 and rules of 1998, etc

and any other law or modifications to the above or to the Rules made thereunder from time to time.

REGISTRATION AND LICENSING

3. Every Contractor shall register his name with the Welfare Section of BHEL before taking up the work awarded to him by giving the following information and getting a Code Number:
 - a) The Name of the Contractor
 - b) Nature of Contract Work
 - c) Period of work
 - d) Number of maximum labour employed by him on any one day
 - e) License No. & Date (Applicable in case of contractor employing 20 or more workers)
 - f) Whether enrolled for PF, ESI, etc., and enrolment No.

This information is called for, for the purpose of informing the Inspectorate of Factories whenever they call for information regarding contracts.

4. The Contractor employing 20 or more workmen is required to obtain license from the authorities (The Deputy Chief Inspector of Factories / Assistant Commissioner of Labour as the case may be). The license shall be amended and / or renewed wherever, there is an increase in the workmen employed by him or in the event of contract being extended or renewed. The Contractor shall inform the licence number to the BHEL Management before taking up the work.
5. The Contractor (Licensed or unlicensed) shall promptly furnish every information and document required by BHEL authorities for the purpose of fulfilling their obligations as Principal Employer and / or Occupier of the Factory and shall render all necessary assistance for the same.

WAGES

6. **The tenderer has to ensure payment of Minimum Wages as per Tamil Nadu State Minimum Wages as applicable under law from time to time.**

Also the labourers shall be paid a minimum bonus which shall be 8.33% as per the payment of Bonus Act 1965 for the total wages paid (i.e.) Payment of minimum wages .

The Contractor shall have to remit EPF & ESI contributions at the rates applicable under law to the authorities concerned for the total wages paid (i.e.) Payment of minimum wages.

At present the Tamil Nadu State Government Minimum wages declared is enclosed for your reference. Normally the revision will be with effect from 1st April of every year. Tenderers are requested to quote their offer after taking into account of the above factor also.

Sl. No.	Category	Minimum Basic Wages per day (in Rs.)	Minimum DA per day (in Rs.)	Total Minimum Wages per day (in Rs.)
1	Unskilled Worker	258.50	288.31	546.81
2	Semi-Skilled Worker	271.00	288.31	559.31
3	Skilled Worker	278.50	288.31	566.81
4	Supervisor	295.00	288.31	583.31

7. The Contractor shall fix wage periods in respect of which wages shall be payable. No wage period shall exceed one month.
8. The Contractor shall ensure payment of wages to the contract labour employed by him within three days from the end of wage period in case the wage period is one week or a fortnight and in all other cases before 10th day of the following month.
9. All Payment of wages shall be made on working days at the work site and during the working time and on date notified in advance. In case the work is completed before the expiry of the wage period final payment shall be made within 48 hours of the last working day.
10. Where the employment of any worker is terminated by or on behalf of the Contractor, the wages earned by him shall be paid before the expiry of the second working day from the day on which his employment is terminated.
11. Wages due to every worker shall be paid to him direct or to the person authorized by him in this behalf. All wages shall be paid in current coin or currency in both.
12. The Contractor shall ensure the disbursement of wages in the presence of such authorized representative of BHEL Management.
13. The above payment shall be verified by the authorized officer / representative of BHEL with the following certificate of the payment sheet "Certified that the amount shown in Column No..... has been paid to the workmen concerned in my presence onat....."

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14. A certificate of payment shall be furnished in duplicate by the Contractor to the Engineer in charge each month in Form 'A'.
15. A notice showing the wage period and the place and time of disbursement of wages shall be displayed at the place of work and a copy to be sent to the Welfare Department by the Contractor under acknowledgement.
16. Notices showing the rate of wages, weekly rest days, hours of work, wage period, date of payment of wages, names and addresses of the Inspector having jurisdiction, the date of unpaid wages shall be displayed in Tamil and English in conspicuous places at the establishment and at work site by the Contractor. The Contractor shall inform the BHEL Management every month the details of contract labour engaged for contract in this following form :
 - a) Serial Number
 - b) Location
 - c) Period of work
 - d) No. of contract labour engaged during the month
 - e) No. of days worked
 - f) No. of men worked
 - g) Wages paid to workers

The above statement shall be furnished to BHEL Management at the end of every month.

REGISTERS AND RECORDS AND COLLECTION OF STATISTICS

17. The following documents / formats under Contract Labour (Regulation & Abolition) Act 1970 and Tamil Nadu Rules thereunder shall be maintained by each contractor.
 - a) Register of persons employed by the Contractor
 - b) Employment Card
 - c) Service Certificate
 - d) Muster Roll, Wage Register, Deduction Register, Wage slip, Overtime Register, Register of Fines, Register of Advances etc.,
18. The Contractor shall display the abstract of the Contract Labour (Regulation & Abolition) Act and the Rules thereunder both in English and Tamil.
19. Half yearly Return shall be sent by the Contractor in duplicate to the Licensing Officer.
20. The Contractor shall submit the returns required under the Contract Labour (Regulation & Abolition) Act 1970 periodically to BHEL Management.
21. The Contractor shall without fail give up to date information in writing of the attendance of the workers employed by him.

22. The Contractor shall ensure that his workers keep and produce their Employment Card when coming to duty and take them back when leaving duty.
23. All the above registers and records shall be preserved in original for a period of three years. All the registers, records and notice maintained under the Act and rules shall be produced on demand by Inspector or any authority under the Act.

WORKING HOURS AND WORKING CONDITIONS

24. No worker shall be required or allowed to work on Sunday unless he has or will have a holiday on anyone of the three days before or after the said day.
25. The Contractor shall inform BHEL Management in the prescribed form details of the contract workers scheduled to work on Sunday, the day of rest and also indicate the substituted holiday in lieu thereof. This shall be intimated two days in advance before his workmen are booked for work on Sunday.
26. The contract labour working for more than nine hours in any day or for more than 48 hours in any week shall be paid wages at the rate of twice the ordinary rate of wages in accordance with the provisions of Sections 59 of the Factories Act 1948.
27. The Contractor shall provide all safety devices and personal protective equipment to his workmen at his own cost and shall ensure that his workmen wear / use such devices or equipment provided to them while doing the work and there should not be any relaxation on this.
28. The Contractor shall give four paid National Holidays to his workers, viz., 26th January, 1st May, 15th August and 2nd October.
29. The Contractor shall ensure that his workmen vacate the premises after the shift is over.
30. The Contractor shall give leave with wages to his workmen who have worked for a period of 240 days or more in the Factory premises during a calendar year. This leave shall be allowed during the subsequent calendar year at the rate of one day for every 20 days of work performed by the worker during the previous calendar year. The worker whose services commences on a day other than the first of January shall be entitled to leave with wages at the above rate (One day for every 20 days of work) only if he had worked for a minimum of 2 / 3 of the total number of days in the reminder of the calendar year. This leave will be admissible only during the subsequent calendar year.
31. No woman worker shall be required or allowed to work in the Factory except between the hours of 6.00 A.M. and 7.00 P.M.
32. The Contractor shall comply with the provisions relating to Welfare and Health facilities as provided in the Contract Labour (Regulation and Abolition) Act 1970 read with the Tamil Nadu Contract Labour Rules 1975.

NOTICE OF ACCIDENTS

33. Notwithstanding anything contrary to this, in the event of accident the contractor shall be required to fill injury report and submit the Engineer in charge immediately and ensure the compliances of ESI / Workmen's compensation Act, Factories Act and Rules made thereunder. He shall also maintain a register of accident as per the Act.
34. The Contractor shall get the contract labour engaged by him insured under Workmen's Compensation policy from General Insurance Corporation of India before actually starting the work of contract. The insurance coverage should be for the entire period of Contract. The Contract shall comply with the provisions of the Workmen's Compensation Act 1923. (This should be read in conjunction with the provisions of ESI Act)

COVERAGE UNDER THE ESI ACT / PF AND MISCELLANEOUS PROVISIONS ACT

35. The contractor shall ensure that all his workmen are covered under the Employee's State Insurance Act and produce to BHEL such Registration Number / Enrolment Number before executing the contract work.
36. The Contractor shall regularly pay the amount of contribution. i.e., employer's contributions as well as employees' contribution pursuant of the above scheme as fixed from time to time. The Contribution payable presently is 1.75% wages to be recovered from his workmen and 4.75% of wages to be contributed by the Contractor. Contributions recovered from employee and contribution made by the contractor may be rounded to the next higher multiples of five paise.
37. The Contractor shall take note of any amendment that may be brought forth in the above contribution rate and act accordingly.
38. The contractor shall ensure that his workmen are covered under the EPF & Miscellaneous Provisions Act 1952 and accordingly produce to the BHEL Management the registration / enrolment number before awarding of contract work. As per the existing provisions every worker shall be entitled and required to become a member of the fund. The employee's contribution payable at present is 12% of wages which will be recovered by the contractor from the wages of his workmen and the contractor should pay equal contribution. The contractor is also liable to pay any administrative charges in this behalf that may be decided from time to time. It will be the responsibility of the contractor to ensure such contribution payable in respect of workmen employed through sub-contractors also.
39. The Contractor shall take note of any amendment in the rate of contribution payable under the scheme from time to time.
40. The Contractor shall within seven days of the close of every month submit to BHEL a statement showing the amount of contribution payable / paid for employees engaged by him or through him and shall also furnish to BHEL such information as Principal Employer is required to furnish under the provisions of the ESI Act and PF as well as the schemes made thereunder to the authorities concerned.

41. Whenever any sum of money is found to be recoverable from or payable by the contractor under the above Act, the sum shall be deducted from any sum that may be due or which at any time thereafter may become due to the Contractor under this contract or under any other contract or from his security deposit. In case the recoveries are not sufficient to satisfy the claim, the contractor shall pay the balance thereof on demand. In case any recoveries are made under this clause from security deposit, the contractor shall immediately thereafter pay such further sums as may be required to replenish the shortage caused by such recoveries in amount of security deposit.
42. The Contractor shall abide by all the labour and other laws applicable to contract labour / worker under this contract and shall at all times keep BHEL indemnified against all losses, claims, prosecutions under any law.
43. In case of non-compliance of any of the provisions of the Acts and in case BHEL having complied with the same, BHEL will be entitled to recover the same from the contractor / sub-contractor.
44. Non-exercise of any of the powers or rights available to BHEL hereunder or under any law, shall not in any way operate as waiver thereof.

Note: The Specimen forms for the following are available in BHEL.

- | | | | |
|----|-----------|---|--|
| 1) | Form 'A' | - | Payment Certificate |
| 2) | Form IV | - | Application for License |
| 3) | Form XIII | - | Register of Workmen employed by contractor |
| 4) | Form XIV | - | Employment Card |
| 5) | Form XV | - | Service Certificate |
| 6) | Form XVI | - | Muster Roll |
| 7) | Form XVII | - | Register of wages |
| 8) | Form XIX | - | Wage slip |

45. Payment to employees engaged by the contractor:

1. The Contractor shall remain liable for the payment of all wages and other payments in connection with the employees engaged by him and with regard to the work.
2. The Contractor shall comply with the applicable provisions of Payment of Wages Act- 1936, Minimum Wages Act- 1948, Employees Liability Act-1938, Employees Compensation Act-1923, Payment of Bonus, EPF and Miscellaneous Provisions Act- 1952, Employees State Insurance Act-1948 and other relevant Acts and rules framed, thereunder from time to time.
3. Contractor shall be responsible for making payment of wages within 7days from the last day of wage period and shall obtain the signature at the end of entries in the wage register from area in-charge of contract operating department. If the 7th days falls on Sunday or holiday the payment should be made on the previous working day

4. Contract labours has to sign the filled in wage register in front of the area in-charge of contract operating department and area in-charge should certify the wage register for payment to the Contract labours only after signed by all the contract labours in filled wage register.
5. Contractor shall have/ obtain license under the Contract Labour (Regulation and Abolition) Act-1970.
6. Contractor should ensure that at least the prevailing minimum wages, as per the rules of Government of Tamil Nadu, which are applicable to General Engineering and Fabrication Industry and BHELs additional wages, inclusive of bonus after remitting PF & ESI contributions, are paid to his employees only in their respective nationalized bank accounts by means of NEFT/ RTGS/ IMPS.

Any changes should be informed to the executive in-charge of Contract execution department before engaging them along with the details.

While submitting the bills, the contractor should submit a proof of payment made to employees only through nationalized bank, along with PF and ESI contribution challans to Welfare Section every month for effecting payment by BHEL. Otherwise, payment to the bills will not be processed.

In addition, the contractor has to submit wage register as a proof for payment of Minimum wages as per prevailing acts, for getting payment from BHEL.

7. The contractor shall remit the salary/wages of their workmen ONLY through nationalized Bank, directly to the salary/savings account of the employee concerned. Monthly clearance will be given in respect of those contractors, only if the salary/wages to the workmen concerned has been remitted. The relevant Bank statement/proof of payment should be produced along with PF and ESI challans every month.

If the Contractor employs more than twenty employees, he has to obtain License to this effect from the Factory Inspectorate and renew the same periodically.

8. The Contractor should follow and comply with Minimum Wages, ESI, PF, Bonus, Group Insurance and other statutory regulations as stipulated in Factories Act and other applicable State / Central Governments' rules & regulations.
9. Each contract employees must have his own PF and ESI Codes and comply with the relevant Acts.
10. The Contract workers should be fully aware of safety measures and observe all safety precautions during work. The Contractor should also make his own arrangements to provide requisite safety devices to the workers, based on the nature of work. Any accident

/ incident occurring to his workers in Company's premises should be reported in writing by the Contractor to Safety, Welfare and Line Executive concerned.

11. Contractor shall maintain proper records of PF, EDLI, Pension, ESI contribution, administrative charges etc., wherever applicable and shall produce proof of deductions as well as remittances. Contractor shall issue wage slips to his employees. Indicative lists as follows, which shall be maintained neatly, completely and legibly for inspection by various statutory authorities and the company officials even at short notice:

(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 (Rule 78(1) (a) (i)
(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) (b)
(g) Form XX	Register of deduction for damages of loss (Rule (78) (1) (a) (ii)
(h) Form XXI	Register of files (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) any other records/registers required to be maintained by the contractors under statutory provisions applicable to him.	

46. Documents Required to obtain new ID Cards for contract workmen:

The contractor shall follow norms of BHEL security system for movement of men & material including bio-metric system & materials within the complex. **Contractor has to submit the following documents to obtain new ID Cards for contract workmen.**

S.No	Document	Description
1	Bio-data form for Contract Workman	Bio-data form for Contract Workman should be submitted duly signed by contractor and contract labour in prescribed format attached in the following page.
2	E-pehchan Card	The existing wage limit for coverage under the ESI Act effective from 01.01.2017 is Rs.21,000/- per month (Rs.25,000/- per month in the case of Persons with Disability). Contract workmen covered under the Act needs to produce the E-pehchan Card. the contractors establishment must be indicated as current employer in e-pehchan.If the workman draws the wage / salary above the ceiling limit, undertaking letter should be produced by the contractor and workman. copy of payslip / appointment order required
3	PF / Universal Account Number	Universal Account Number of the individual to remit the EPF amount in EPF portal
4	Passport size Photo – 1 No	The passport size photograph of the individual should be in colour & legible pixels in the size of 3.5cm X 4.5 cm
5	Copy of Bank Pass Book	Copy of Bank Pass Book of the contract workman which will be used for making payment of wages
6	Copy of Aadhar Card	Copy of Aadhar of the contract workman should be submitted with self attestation
7	Police Verification Report	Police Verification Report of the individual needs to be submit who is newly joining in tiruchirappalli complex as a contract workman. The PVR must be recent one (i.e. not older than 3 months at the time of application submitted).

After submission of above documents, Fingerprint needs to be captured.

BIO DATA OF CONTRACT WORKMEN (Please fill the form in block letters only)

CTR NO										
CONTRACTOR NAME										
VENDOR CODE										
GATE ENTRY										
WORKER ID NO										
WORKER NAME										
FATHER / HUSBAND NAME										
CATOGORY	SKILLED		SEMI SKILLED			UN SKILLED			SUP	
DATE OF BIRTH (DDMMYYYY)	D	D	M	M	Y	Y	Y	Y	Y	
QUALIFICATION	BELOW SSLC			SSLC			ITI			
	DIPLOMA			DEGREE			PG			
COMMUNITY	OC		OBC		SC		ST			
GENDER	M	F								
NATIONALITY										
RELEGION						MOBILE NO				
BLOOD GROUP										
MARITAL STATUS	MARRIED		UN MARRIED			WIDOW(ER)			DIVORCED	
ESIC NO										
PF NO										
UAN NO										
AADHAR CARD NO										
BANK ACC NO										

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BANK NAME										
BANK BRANCH										
IFSC CODE										
IDENTIFICATION MARK - I										
IDENTIFICATION MARK - II										
NOMINEE DETAILS	NAME			RELATIONSHIP			DOB			
WORK ORDER NO										
CONTRACT PERIOD	TO									
CONTRACT VALUE										
CONTRACT TYPE	WORKS CONTRACT					MANPOWER CONTRACT				
TOTAL NO OF WORKERS AS PER WO	SUP		SKILLED		SEMI SKILLED		UN SKILLED		TOTAL	
TOTAL NO OF CARDS RECEIVED	SUP		SKILLED		SEMI SKILLED		UN SKILLED		TOTAL	
LABOUR LICENCE OBTAINED	YES		NO		NOT APPLICABLE					
EXPIRY DATE OF LABOUR LICENCE	D	D	M	M	Y	Y	Y	Y		
IF NOT OBTAINED, WHEHER UNDERTAKING GIVEN BY CONTRACTOR FOR OBTAINING LABOUR LICENCE	YES(Undertaking letter in original is enclosed)				NO		NOT APPLICABLE			
PRESENT ADDRESS					PERMENANT ADDRESS					
I Declare that the information given above is true to the best of my knowledge										
CONTRACTOR'S SIGN WITH SEAL					SIGNATURE OF CONT. WORKMAN					
REMARKS	APPROVED					NOT APPROVED				

SIGNATURE / CONTRACT CELL

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47. Biometric Entry/Exit System for Contract Workmen:

1. The Entry/Exit of the employees engaged by contractor is to be regulated only through Biometric system.
2. The contractor should arrange photo coverage for all his/her employees within the above stipulated time.
3. The contractor has to submit FORM-I for all his/her contract employees. All the particulars required in FORM-I are to be provided by the contractor without fail.
4. Every employee of the Contractor shall be provided with Employment Card as per Form XIV (as per Rule 76 of the Contract Labour (Central) Rules, 1971 and the contractor shall instruct its employees to carry the Employment Card as well as Entry Card without fail, while entering/exiting factory.
5. The contractor should educate his employees in registering the attendance through the system.
6. Whenever a contract employee migrates or leaves service of the contractor, the contractor has to surrender the biometric card of the particular employee to Contract Cell with immediate effect, without fail.
7. On completion of the work, the contractor has to surrender all the biometric entry cards issued to its employees immediately to the contract cell. Otherwise, an amount of Rs.200/- per card will be deducted from the final bill/Performance Security of the contractor.
8. If any contract employee lose his/her entry card, the contractor shall arrange a duplicate entry card for the employee by paying an amount of Rs.200/-.
9. The Contractor is totally responsible for the biometric cards issued to his/her employee.
10. The Contractor has to indemnify BHEL for all the damages and losses caused by his/her employees.

63. B.H.E.L SAFETY CODE

See Condition-20

1. Suitable scaffolds shall be provided for workmen for all work that cannot safely be done from the ground, or from solid construction except such short period of work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and hand-holds shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to 1 ($\frac{1}{4}$ horizontal and 1 vertical).

2. Scaffolding or staging more than 3.25 meters above the ground or floor, swung or suspended from an overhead support or erected with stationary support, shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 meter high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
3. Working platform, gangways, and stairways shall be so constructed that they do not sag unduly or unequally, and if height of a platform or gangway or stairway is more than 3.25 meters above ground level or floor level, it shall be closely bordered have adequate width and be suitably fenced, as described in 2 above
4. Every opening in floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of 1 meter.
5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 meters in length. Width between side rails in a rung, ladder shall in no case be less than 30 cm, for ladders up to and including 3 metres in length. For longer ladders this width shall be increased by at least 6 mm for each additional 30 cm. of length. Uniform step spacing shall not exceed 30 cm.

Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Contractor shall provide all necessary fencing and lights to protect public from accidents and shall be bound to bear expenses of defence of every suit action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions, and pay any damages and costs which may be awarded in any such suit, action or proceeding to any such person or which may with the consent of the Contractor be paid to compromise any claim by any such person.

6. **Excavation and Trenching:**

All trenches, 1.5 metres or more in depth, shall at all times be supplied with at least one ladder for each 30 m length or fraction thereof. Ladder shall be extended from bottom of trench to at least 1 metre above surface of the ground. Sides of a trench 1.5 metres or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. Excavated materials shall not be placed within 1.5 metres of the edge of trench or half the depth of trench, whichever is more. Cutting shall be from top to bottom. Under no circumstances shall undermining or undercutting be done.

7. **Demolition:** Before any demolition work is commenced and also during the process of the work:

- a) All roads and open areas adjacent to the work site shall either be closed or suitably protected:

- b) No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
- c) All practical steps shall be taken to prevent danger to persons employed, from risk of fire or explosion, or flooding. No floor, roof, or other part of a building shall be so overloaded with debris or materials as to render it unsafe.

8. All necessary personal safety equipment as considered adequate by the Engineer-in-Charge shall be available for use of persons employed on the site and maintained in a condition suitable for immediate use and the Contractor shall take adequate steps to ensure proper use of equipment by those concerned.

- a. Workers employed on mixing asphaltic materials cement and lime mortars/ concrete shall be provided with protective footwear and protective gloves.
- b. Those engaged in handling any material which is injurious to the eye shall be provided with protective goggles.
- c. Those engaged in welding works shall be provided with welder's protective eye-shields.
- d. Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- e. When workers are employed in sewers and manholes which are in use, the Contractor shall ensure that manhole covers are opened and manholes are ventilated atleast for an hour before workers are allowed to get into them. Manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to public.

The Contractor shall not employ men below the age of 18 and women on the work of painting with products containing lead in any form. Whenever men above the age of 18 are employed on the work of lead painting, the following precautions shall be taken:

- i. No paint containing lead or lead products shall be used except in the form of paste or ready-made paint.
- ii. Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scraped.
- iii. Overalls shall be supplied by the Contractor to workmen and adequate facilities shall be provided to enable working-painters to wash during on cessation of work.

9. When work is done near any place where there is risk of drowning, all necessary equipment shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in

danger and adequate provision made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

10. Use of hoisting machine and tackles including their attachments, anchorage and supports shall conform to the following:
 - a.
 - i. These shall be of good mechanical construction, sound material and adequate strength and free from defects and shall be kept in good working order.
 - ii. Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from defects.
 - b. Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be in charge of any hoisting machine including any scaffolding winch or give signals to operator.
 - c. In case of every hoisting machine and of every chain, ring, hook, shackle, swivel and pulley block used in hoisting or lowering or as means of suspension, safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall have the safe working load plainly marked there on, In case of a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - d. In case of departmental machine, safe working load shall be notified by the Engineer-in-Charge. As regards contractor's machine the Contractor shall notify safe working load of each machine to the Engineer-in-Charge whenever he brings it to site of work and get it verified by the Engineer-in-Charge.
11. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards; hoisting appliances shall be provided with such means as will reduce to the minimum risk of accidental descent of load. Adequate precautions shall be taken to reduce to the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, working apparel such as gloves, sleeves and boots, as may be necessary shall be provided. Workers shall not wear any rings, watches carry keys or other materials which are good conductors of electricity.
12. All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near the places of work.
13. These safety provision shall be brought to the notice of all concerned by display on a notice board at a prominent place at the work spot. Persons responsible for ensuring compliance with the Safety Code shall be named thereon by the Contractor.

14. To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the Contractor shall be open to inspection by the Engineer-in-Charge or his representatives and the Inspecting Officers as defined in the Contractor's Labour Regulations.
15. Notwithstanding the above conditions 1 to 14, the Contractor is not exempted from the operation of any other Act or Rule in force.

16. NON COMPLIANCE OF SAFETY RULES

NONCONFORMITY OF SAFETY RULES AND SAFETY APPLIANCES WILL BE VIEWED SERIOUSLY AND BHEL HAS RIGHT TO IMPOSE FINES ON THE SUBCONTRACTOR AS UNDER FOR EVERY INSTANCE OF VIOLATION NOTICED

SN	Violation of Safety Norms	Fine (in Rs)
01	Not Wearing Safety Helmet	200/- *
02.	Not wearing Safety Belt or not anchoring life line	500/-*
03	Not wearing safety shoe	200/-*
04	Not keeping gas cylinders vertically	200/-
05	Not using flash back arrestors	100/-
06	Not wearing gloves	50/- *
07.	Grinding Without Goggles	50/- *
08.	Not using 24 V Supply For Internal Work	500/-
09.	Electrical Plugs Not used for hand Machine	100/-
10.	Not Sliding properly	200/-
11.	Using Damaged Sling	200/-
12.	Lifting Cylinders Without Cage	500/-
13.	Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property.	200/-
14.	Not Removing Small Scrap From Platforms	500/-
15.	Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting	500/-
16.	Not Maintaining Electric Winches Which are Operated Dangerously	500/-
17.	Improper Earthing Of Electrical T&P	500/-
18	No or improper barricading	500/-
19.	Activity carried out without Safety work permit (Height work, Lifting activity, Hot work-each person/case)	1000/-

Legend:-

*: per head. For repeated violation by the same person, the penalty would be double of the previous penalty. Date of "Repeated violation" will be counted from subsequent days.

#: For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

Any other non-conformity noticed not listed above will also be fined as deemed fit by BHEL. The decision of BHEL engineer is final on the above. The amount will be deducted from running bills of the subcontractor. The amount collected above will be utilized for giving award to the employees who could avoid incident by following safety rules. Also the amount will be spent for purchasing the safety appliances and supporting the safety activity at site.

17 . Compensation Clause:

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.
- 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/Officers/townships and premises/Project sites
- c) Compensation in respect of each of the victims:
 - (i) In the event of death or permanent disability resulting from Loss of both limbs: Rs 10,00,000/- (Rs Ten lakh)
 - (ii) In the event of others 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"

**FORM OF REGISTER OF WORKMEN
(Regulation-7)**

- i. Name and address of the Contractor-----
- i. Number and date of the **WORK ORDER & CONTRACT AGREEMENT** -----
- iii. Name and address of the department awarding the contract-----
- iv. Nature of the Contract and location of the work-----
- v. Duration of the Contract-----

Sl. Remarks	Name and surname of the workers	Age & Sex Name	Father's / Husband's employment Designation.	Nature of emp- of Employee (Village, Distt. Thana).	Permanent / Present Home address of emp-	Date of address leaving employment	Date of commen- tion or of the of emp-	Signature or thumb impression employee.		
1	2	3	4	5	6	7	8	9	10	11

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**FORM OF EMPLOYMENT CARD
(Regulation-8)**

- i Name and Sex of the Worker-----
 ii Father's / Husband's Name -----
 iii Address -----
 iv Age or Date of birth-----
 v Identification mark -----

Particulars of next of kin (wife/husband and children, if any, or of dependent next of kin in case the worker has no wife/ husband or child):-

Name-----

Full address of Dependents

(Specify Village, Dist., and State-----

Sl. No	Name & Address of employer (specify Whether a contractor or a sub contractor).	Particulars of location of worksite and description of work done	Total period for which the worker is employed from..... to.....)	Actual number of days worked	Leave should be specified).	Nature of taken (No. of days of worker.	Wage Work done by the	Total rate With	REMARKS by the Worker during the period shown Under Col.5.	Signature of the Employee
1	2	3	4	5	6	7	8	9	10	11

N.B:- For a worker employed at one time on piece-work basis and at another on daily wages, relevant entries in respect of each type of employment should be made separately.

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ACCEPTING OFFICER

**FORM OF WAGE SLIP
(Regulation-9)**

i. Name of the Contractor -----

ii. Place -----

1. Name of the worker with
father's / husband's name.

2. Nature of employment.

3. Wage period.

4. Rate of Wages payable

5. Total attendance / Unit of work done.

6. Dates on which overtime worked

7. Overtime Wages.

8. Gross Wages payable.

9. Total deductions (indicating nature of deductions)

10. Net wages payable.

Contractor's Signature /
Thumb impression.

Employees' Signature/
Thumb impression.

FORM OF REGISTER OF FINES (Regulations No.10 vii)

Sl. No.	Name	Father's / Husband's name	Sex	Departm ent	Nature and date of the offence for which fine imposed	Whether workmen showed cause against fine or not, if so, enter date	Rate of wages	Date and amount of fine imposed	Date on which fine realised	Remarks
1	2	3	4	5	6	7	8	9	10	11

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ACCEPTING OFFICER

FORM OF REGISTER OF WAGES-CUM-MUSTER ROLL

(Regulation – 9)

- i. Name and address of the Contractor-----
- ii. No. & Date of the Contract Agreement /Work Order-----
- a. Name and address of the department awarding the Contract-----
- b. Nature of the Contract and location of the work-----
- c. Duration of the Contract-----
- d. Wage period-----

Fair Wage Wages payable paid																							
Overtime Worked																							
Deduction from wages																							
Serial Number	Name and Surname of the worker	Father's/Husband's name	Sex	Designation and Nature of work	Daily attendance (No. of units worked 1,2,3,4,5,6,7,.,31)	Total attendance Units	Basic	D.A. & other allowance	Basic	D.A. & other allowance	Date	No.of hours.	Overtime wages earned.	Total wages paid	*Fine	Deduction for damage or loss	House rent	Recovery of advances	Other deductions	Net wages payable	Date of payment	Signature of thumb impression of the worker	Remarks
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Reasons to be recorded in Column 24.																							

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ACCEPTING OFFICER

FORM OF REGISTER OF DEDUCTIONS FOR DAMAGES OR LOSS CAUSED TO THE B.H.E.L.

BY THE NEGLECT OR DEFAULT OF THE EMPLOYED PERSONS

Regulation No 10 (vii)

Sl. No	Name	Father's / Husband 's Name	Sex	Departm ent	Damage or loss caused with date	Whether worked showed cause against deductio n if so, enter date	Date & amount of deductio n imposed	Number of Instal- ment, if any	Date on which total amount realised	Remarks
1	2	3	4	5	6	7	8	9	10	11

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ACCEPTING OFFICER

GENERAL SAFETY PRECAUTIONS TO BE FOLLOWED AT WORK SITE DURING EXECUTION

The following safety measures should be strictly adhered to during execution of works at sites.

- i. Providing the working platform with toe board and handrail for continuous working at heights.
- ii. Providing safety belt and life line at all times for men working at heights.
- iii. Providing dust or fume respirator in places where dust and fume concentration exists.
- iv. Providing goggles and welding screens.
- v. Providing acid and alkali proof rubber gloves for handling acid and alkali and chemical which are corrosive.
- vi. Providing rubber gloves for working on electrical works.
- vii. Ensuring proper lashing of the components while being transported in vehicles.
- viii. The vehicles must have side supports or have body to support the materials conveyed.
- ix. The materials should not be allowed to extend or overflow the sides of the vehicles.
- x. Materials should not be allowed to overhang from the rear edge of the body of the vehicle.
- xi. Driver of the vehicle must possess license.
- xii. Vehicle must not be overloaded prescribed limits.
- xiii. Red flags and lights for parts projecting from the body of vehicle must be provided.
- xiv. The speed restrictions within the factory premises must be strictly adhered to.
- xv. The gas cylinders must be always handled on trolleys or kept tied down not in use. They should never be rolled as Roller for conveying.
- xvi. Cylinders should not be used without regulators.
- xvii. All excavations must be barricaded and red lamps must be provided.
- xviii. All electrical connections must be properly earthed.
- xix. No work should be taken up for execution inside shop floor, without obtaining necessary work permit.
- xx. Providing helmet, safety belt, etc., for high level work and sufficient number of Industrial Safety nets at appropriate level to safeguard the persons working at high level particularly in trusses, girders, roofing etc., of industrial and high roof buildings.
- xxi. The contractor should maintain a register regarding the driver license particulars.
- xxii. All personal protective equipment conform with standard specification as per the details given in the code of conduct.

Contractor including their sub-contractors, agents and labour engaged on the work are required to scrupulously adhere to the safety regulations, safety precautions and measures. Any violation thereof will invite punitive action being taken against them. Also contractors with frequent violations of safety regulations will not be entrusted with further work in this organization.

SAFETY PRECAUTIONS TO BE OBSERVED WHILE TRANSPORTING MATERIALS

I. VEHICLE

1. Vehicles carrying material should have proper registration documents and must be produced on demand by our Security Staff.
2. The light on right side, i.e., over the drivers cabin shall be in working condition.
3. Both the head lights as well as park lamps must be in working conditions.

II. MOVEMENT OF VEHICLE

1. The vehicle should not travel at more than 20 km.ph in our premises.
2. The Driver of the vehicle must possess heavy duty license and produce on demand by the Security Staff.
3. Vehicles carrying inflammable liquids in the tank containers should have grounding chain or the tank should be coated with insulating material also to avoid Static Electricity.
4. In road junctions, speed breakers and railway crossing, the speed should be lowered and vehicle should proceed cautiously.
5. The driving should 'KEEP TO THE LEFT' at all places.
6. The vehicle should not be parked in road which could obstruct the vehicular traffic.
7. No person other than driver should be allowed to sit or stand on the prime mover or trailer.
8. The vehicle should pass only through the approved routes. Short cuts should be forbidden.
9. There must be a safe distance behind another moving truck.
10. The driver should avoid making quick starts, jerky stops or quick turns at excessive speed.

III. SHIPPING

1. Strong side supports should be provided on both sides of the trailer. The side supports should be fixed in such a way that it cannot be removed even temporarily.
2. Adequate packing must be given for easy slinging operation. The packing materials should be good enough to withstand the load.
3. The stacking of loads in the truck should be evenly placed. The load should not be heaped together or dumped over the chassis.
4. The loaded materials should be fastened tightly with 'WIRE ROPE'. Manila rope or coir rope should not at all be used. There must be side packing such as gunny or rubber tyre between the sharp edge of the job and wire rope in order to avoid cut in the wire rope.
5. There must be minimum two fastenings and it should be more in case of lengthier loads.
6. The wire rope should be in sound conditions i.e, there should not be links, knots or bristles etc.
7. The wire rope ends should be clamped with 'U' clamps.
8. The load on the truck should not be beyond its standard capacity. The carrying capacity must be clearly marked on the trailer also.
9. The loose pieces should be bundled before loading on the truck.
10. There must be red flags or red lamps for the lengthy loads which extend beyond chassis.
11. The load should not be over hanging more than 3 ft. from the end of the body.
12. The materials should not be stacked too high to avoid hitting against live electric lines.
13. While transporting the scraps, there must be wire knitting cover to prevent falling of scrap.

IV. GENERAL:

The vehicles should not be moved directly inside the production building in case the materials are to be unloaded there. But the vehicle should be parked outside the building and the driver should ascertain the passage as well as the unloading points with the help of shop officials. This will avoid the congestion of blocking of traffic in the gangway.

BHEL-Trichy : Contractor Safety Guidelines

Following are the points to be ensured for the safety of contract employees.

I. Identity and Entry:

1. The contractors to give identity card to their employees with full details like employee name, company name, age, blood group, contact person with phone no. etc.
2. The contractors not to employ people whose age is below 18 years.
3. HR/Welfare will issue passes to the trained employees only.
4. Welfare has to arrange for necessary infrastructure (biometric entry) for enrolment of new contract workers. Biometric entry system will be made available in North Gate and Unit 2 initially.
5. The data of daily entry of contract workers through biometric will be made available online to the contract awarding departments HR/Welfare.

II. Training:

1. Safety, first aid and fire fighting training to be given to two responsible persons in each contract and they should take care of their groups on day to day working.
2. This shall be done within a period of 2 weeks after awarding of fresh contract.
3. For ongoing contracts the contractors has to identify the persons to be trained within a period of 2 weeks.
4. Driving/operation of Crane/jumbo/Fork lift etc are to be done only by authorized persons.

III. Dress Code:

1. Male employees should enter gates only with Safety shoes, Pants-Shirts, (Dothi, Lungi not permitted).
2. Female employees should enter gates only with Safety shoes. Loose dress must be avoided. (A shirt over saree / chudithar is a must).
3. Normal shoes are acceptable for office area work only.
4. Employees working in canteens can wear sandex.
5. Welfare will finalize and indicate a color coding to be provided in the dresses used by contract employees for uniformity and easy identification of the contract workers.

IV. Procedures:

1. Smoking, audio-playing (mobile phone, iPod, inbuilt music systems etc in the vehicles.) are banned within the factory premises.
2. Moving to unrelated areas must be strictly avoided by the contract employees entering to the other areas only with knowledge of concerned department.
3. Procedure (SOP) given from user departments are to be adopted for all operations and maintenance – e.g. tank cleaning, ET plant maintenance, Sewage maintenance, Oxidation pond maintenance, operation of substation, transformer maintenance etc. User departments agreed to generate procedures incase if not available already (Snake catching, Monkey catching, Honey comb removal etc.).
4. Adequate precautions to be taken while waste removal like paint sludge removal, chromic sludge removal, phenol and tar removal by contract employees.
5. The contractor should clearly inform the hazards involved to the employees MSDS to be displayed.
6. The contract employees involved in tank cleaning, ET plant maintenance, Oxidation pond maintenance should know swimming and strict monitoring should be ensured.
7. Line clearance(LOTO)procedure to be followed during bulb changing, electrical substation maintenance, DSL maintenance, furnace instrumentation etc.
8. Work permits to be obtained for jobs like work at height, excavation, blasting, hot work, pipe line work, roof light maintenance, work at confined space like cellar.
9. Users agreed to initiate the permits for all the works mentioned in the table given below to safety mgt for clearance.

BHEL-Trichy : Contractor Safety Guidelines

Work Permit Instructions

Sl No	Works	Instruction
1	Construction, erection & Commission of new and modification of existing civil structure	The contract workers employed shall have sufficient job knowledge shall follow the procedures and dress code
2	Periodical Civil maintenance work at height	Only experienced people shall be allowed to carry out the work at height. Physically fit without any vertigo problem. Wear safety belt and use life line, Net etc.
3	Work at height - including roof light maintenance and furnace work	Only experienced and qualified electrician shall be allowed to carry out the work at height. Physically fit without any vertigo problem. Wear safety belt and use life line, Net etc.
4	Welding work at process plant including pipe lines, PG and acetylene plant	Only experienced people shall be allowed to carry out the work at height. Shall take care of nearby pipeline, remove all flammable materials. Get help from fire service.
5	Crane erection and modification work	Only experienced people shall be allowed to carry out the work. Wear safety belt and use life line. Net etc. Remove all loose material
6	Excavation and Blasting.	Some lapse is noticed obtaining Excavation permit, shall be strictly followed. Only licensed holder shall carry out blasting, accountability shall be properly maintained for the explosives, unauthorised/unapproved explosives shall not allowed. Only authorised equipment shall be used for blasting
7	Fragile roof work	Only experienced people shall be allowed to carry out the work at the fragile roof. Physically fit without any vertigo problem. Wear safety belt and use life line. Net etc. They shall be properly instructed before going to the roof.
8	Confined space work, cellars, furnace ducts	Oxygen level to be checked before work, proper breathing apparatus to be used. Only experienced people shall be allowed to carry out the work at cellars/confined space

10. Specified Speed limit 20 kmph to be followed by all the vehicles entered in factory premises.

11. Procedure given by user departments for spray painting, brush painting and dip painting should be followed. Paint sludge removal, empty tin removals etc. are to be periodically carried out and sent to disposal stores.

BHEL-Trichy : Contractor Safety Guidelines

B. Electrical Contractors:

1. Must ensure proper care before working on electrical lines.
2. Must have obtained line clearance/ work permit for all electrical work, panel board cleaning, roof light changing, cable trench works and works in confined areas.
3. After completion of the work the line clearance/ permits must be closed.
4. Must remove all the left out choke, bulbs, tools, fasteners etc. after completion of the work (working on height).
5. Portable machines, lines drilling machines must be with proper plug points.
6. Unused new cables and fittings are to be returned to the concerned. Old cables/ used cables are to be removed and returned properly.

C. Painting Contractors:

1. Must know the characters of paints, thinners, solvents etc before handling.
2. User departments and the contractor must provide Materials Safety Data Sheets (MSDS) for the contract employees involved in painting work.
3. Contractors should provide respirators to the employees doing painting work.
4. User departments should ensure training for contract employees in Fire prevention, fire fighting etc.
5. The training shall be through Fire/Security department.
6. Contract employees must take adequate precaution to prevent fire while working.

D. Civil Contractors:

1. Employees working in Civil constructions should be familiar with the relevant work viz masonry work construction, tiles, partition, floor elevated work etc.
2. Tools, equipment pertaining to their works must be in good condition and with valid certificates. The workers employed must be skill ful enough to complete the work- roof work, work at height, excavation blasting etc.
3. Contractors must check the health of employees specific to occupation periodically and furnish evidence to welfare department/BHEL. This is a must for the works like working at height, Jack hammering, sewage cleaning etc.
4. Vehicles used for construction works like lorries, excavation equipments (JCB), Mixing machines etc., are sound in operating condition.

BHEL-Trichy : Contractor Safety Guidelines

5. User departments should ensure that the applicable procedures are clearly understood by contract employees involved in civil maintenance viz flooring, floor cleaning, building maintenance, water line, pipe lines, storm water, ETP Maintenance etc. The adherence to the procedures must be ensured by contract supervisor.
6. The operators should be licensed, trained and authorized persons. Valid certificates/ documents must be shown on demand.
7. Employees should remove the waste materials from the work spot after completing the works.

E. Transport Contractors:

1. Vehicles carrying materials should have proper registration documents and must be produced on demand to BHEL security staff.
2. The driver of the vehicle must possess valid heavy duty license, vision Test certificates & relevant valid vehicle documents as per the factory Rules and to be produced on demand to the security staff.
3. The cleaner should be knowledgeable enough to give correct direction. Also should not drive inside or take training inside. Every vehicle should have pair of skilled driver and cleaner.
4. No persons other than driver should be allowed to sit or stand on the Prime Movers of the trailer.
5. Should not do Cooking, Bathing, Vehicle cleaning etc. within the premises.
6. The lights on right side (i.e.) over driver's cabin should be in working condition.
7. Both the head lights as well as park lamps must be in working condition.
8. The tire, brake, horn, turning lamps, etc must be in good conditions.
9. The vehicle should not be parked in the road in such a way to cause obstruction to vehicular traffic.
10. There must be a safe distance behind another moving truck.
11. If vehicle got break down, they should attend maintenance work and ensure to avoid oil and grease spillage & traffic issues.
12. Drivers should not do material handling activities.
13. Must not stand under/close to load while lifting the materials
14. Speed limit 20 km/hr to be maintained inside the factory premises.

BHEL-Trichy : Contractor Safety Guidelines

F. Shipping:

1. Strong side supports should be provided on both sides of the trailer. The side supports should be fixed in such a way that it cannot be removed even temporarily.
2. Adequate packing must be given for easy slinging operations. The packing materials should be good enough to withstand the load.
3. The stacking of loads on the truck should be evenly placed. The load should not be heaped together or dumped over the chassis.
4. The load on the truck should not be beyond its standard capacity. The carrying capacity must be clearly marked on the trailers also.
5. The loaded materials should be fastened tightly with wire rope. Coil rope should not at all be used.
6. There must be side packing such as gunny, rubber-tire between the sharp edges of the job and Wire rope in order to avoid cut in the wire rope.
7. There must be minimum two fastening and it should be more in case of lengthier loads.
8. The loose pieces should be bundled before loading on the truck.
9. There must be red flags or red lamps for the lengthy load which extend beyond chassis.
10. The materials should not be stacked too high to avoid hitting against live electric lines.
11. Must not lift beyond the capacity (SWL) of mobile cranes.
12. Must keep valid certificates for the individual (inclusive of vision Test certificates) and lifting equipment.
13. Should not use mobile cranes for transporting and dragging

VII Travels/Taxi Contractors:

1. Must have valid documents like Driving license, RC, Insurance, FC, Vision Test Certificate.
2. Max speed limit 20 KM/Hr must be followed, Timing prescribed for entry and exit to be strictly followed. Not to overtake inside the Premises.
3. Seat belt must be worn by taxi drivers, Park cars only in the permitted areas.
4. Using mobile phones while driving and playing iPod, inbuilt music systems etc in the vehicles. are banned within the factory premises.

BHEL-Trichy : Contractor Safety Guidelines

VIII Welfare:

1. The contractors are directed to generate PF number and ensure PF contribution remittance for all contract workmen engaged by them.
2. Bio-Metric Entry for Contract Workmen : Contractors have been directed to cover all the contract workmen engaged by them through Bio-Metric Entry System

XI Health Check up

Contractors must check the health of employees specific to occupation periodically and furnish evidence to welfare department/BHEL for updating. Specific test is a must apart from General Health checkup for the works like

1. Working at height- Vertigo test
2. Mobile crane operator- Vision test, audiometric test
3. Vehicle drivers- Vision test, audiometric test
4. Shot blasting operations- Lung function test, audiometric test
5. Canteen employees- Dermatitis
6. Jack hammering- Lung function test, audiometric test
7. Sewage cleaning- Lung function test,
8. Electro-plating- Skin and respiratory tract
9. Grinding - Lung function test, audiometric test
10. Spray painting - Skin and respiratory tract

X. Safety Equipment:

Contract employees must wear the PPEs relevant to the nature of work in addition to the safety shoes.

1. Welding - Welding Shield and goggles
2. Gas cutting - Aprons, Gas cutting goggles
3. Painting - PVC gloves, PVC apron, respirators
4. Electrical work - Electrical Resistance gloves, gum boots (during rain)
5. Work near hot furnace - Heat resistant gloves & Apron
6. Glass wool related works - Respirators, Barrier Cream
7. Slag removal, cleaning and grinding work - Goggles / dust respirators.
8. Handling of rough and sharp surfaced objects - Leather gloves
9. Sanitary work - Hand gloves, Gum boots
10. Concrete preparation - Gum boots Electrical
11. Work at height - Rubber gloves, Safety Belt, Fall arrestors, Life line Rope.

BHEL-Trichy : Contractor Safety Guidelines

XI. Violations:

The following will be treated as serious violations and appropriate actions are to be initiated by the users.

1. Employing people whose age is below 18 years.
2. Not wearing safety shoes or normal shoes (Contract employees will not be permitted after the security gates).
3. Not wearing PPEs.
4. Working without proper work permit.
5. Possession of mobile phones other than taxi drivers..
6. Using mobile phones while driving .
7. Unauthorized electrical connections .
8. Driving/operation of Crane/jumbo/Fork lift etc by unauthorized persons.
9. Unauthorized operation/driving of lorries, mobile cranes etc.
10. Smoking, alcohol, audio-playing etc.
11. Moving to unconnected areas.
12. Any willful act that creates unsafe conditions .

CHECK FOR HEALTH PERFORMANCE

Sl. No.	Activity	Hazard	Exposure Consequence	Check for	Periodicity
1	Concrete Dismantling	Emission of Dust & Noise	1	Lung function	Once in a Year
2	Concrete Mixing	Emission of Dust & Noise	1	Lung function	Once in a Year
3	Painting	Emission of Dust & fumes	1	Lung & throat function	Once in a Year
4	Cutting & Welding	Emission of fumes and gas. Exposure to Live wire	3	Eyes & Lung function	Once in a Year
5	Working on AC sheets	Emission of Dust	3	Lung function	Once in a Year
6	Sweeping of Roads	Emission of Dust	2	Lung function	Once in a Year
7	Collection and disposal of Sanitary waste	Foul smell & susceptibility to deacease.	3	Lung function and skin irritation	Once in a Year
8	Handling of Oxygen & Acetylene Cylinders	Leakage of gas	4	Throat irritation	Once in a Year
9	Cleaning of Manholes	Exposure to poisonous gas	4	Suffocation	Once in a Year
10	Cleaning of Overhead tank	Emission of Dust	1	Suffocation & skin irritation	Once in a Year

NOTE: Exposure Consequence

- 1.Slightly harmful
2. Harmful
- 3.Very harmful
4. Extremely harmful

PART - B _ PRICE BID

SCHEDULE 'A'

LIST OF WORKS AND PRICES

DETAILS & QUANTITIES of each item of work shown in the BILL OF QUANTITIES are only approximate. They are given as a guide for the purpose of tendering only and are liable to variation and alteration of the Competent Authority. The work under each item as executed shall be measured and priced at the corresponding rate quoted by the contractor in the BILL OF QUANTITIES

BILL OF QUANTITIES

Sl. No.	Appx. Qty.	Description of work	TNBP No.	Rate (Both in Unit fig & Words	Amount Rs. Ps.
AS PER SEPARATE SHEETS ATTACHED SHEETS IN PRICE BID					

'SCHEDULE B'

1. The following materials will be issued FREE of cost to contractor at BHEL Stores / Stock yard if specified in the BOQ and specifications.

Sl. No.	DESCRIPTION	PLACE OF ISSUE
NIL		

2. It will be the responsibility of the Contractor to submit his demands for the above stores in writing atleast **seven days** in advance of the actual requirement.
3. Issue of Stores is subject of the availability at the place of issue cited above, items of stores to be issued by BHEL which are not available at the time of indenting by the contractor may be supplied by BHEL after necessary procurement. The contractor shall not be entitled to any claim of compensation for delay in the supply of stores by BHEL under any circumstances.
4. The materials will be issued only during the working hours of the BHEL Stores Department (8.00 a.m. to 4.30 p.m.). **Contractor shall have to transport them to the site of work at his own cost as soon as they are issued to him.**
5. The steel materials if issued will be in random lengths and sizes as stocked by the BHEL and the cost of all cutting, conversion, substitution and fabrication as well as wastage shall have to be borne by the Contractor.
6. The contractor shall from time to time render proper account of all materials issued to him by BHEL. If he fails to do so, no further issue of materials will be made to him and he will be held responsible for any delay in the execution of the work which may occur on this account.
7. Where Roof & side Sheets and accessories, Doors, Windows, Sanitary fittings, Special glasses or other items are issued free of cost to the contractor, the contractor will have to make good at his own cost any loss or damage to any part or whole of the items issued to him as above. All wastage within the premises limits as fixed by BHEL will be charged for at the prescribed issued rates of BHEL. Excess wastage will be charged for at punitive rates which will be 100% higher than the issue rates.

8. All surplus materials in good condition which are not returned to the BHEL Stores and quantities of materials consumed in excess of the max. permissible limit as fixed by BHEL shall be charged for at punitive rates.
The decision of the Engineer-in-charge as to the extent to which materials have been rendered surplus or consumed in excess of the actual requirements shall be final and conclusive and binding on the contractor.

SCHEDULE 'C'

ISSUE OF TOOLS AND PLANTS TO CONTRACTORS

Sl. No.	Qty.	Particulars	Details of BHEL Crew Supplied	Hire Charges Per unit Per Day	Place of Issue	Remarks
.....Nil.....						

- a. Machineries shall not be operated over time without the written permission of the Engineer-in-charge.
- b. All Coolies, Watermen etc., required shall be arranged by the contractor at his own expense.

SCHEDULE 'D'

NOTE: All Drawings are to be signed by the Contractor as well as the officer entering into contract.

SL. No.	DRAWING NUMBER	DESCRIPTION
1	NIL	NIL

SCHEDULE 'E'

LEAD STATEMENT

Sl. No.	Name of Material	Name of Source	Lead Particulars
1	NIL		

BILL OF QUANTITIES

(No rate shall be written here. Quote based on this BOQ should be given online in xl-format, only in eProcurement portal)

Name of work: Laying /Re-Laying/Repairs and Maintenance of roads in and around BHEL Township, Trichy

SL NO	Quantity	ITEM DESCRIPTION	UNIT	RATE (Rs)	AMOUNT (Rs)
1	25	Providing and laying 50 mm consolidated thick bituminous macadam using 0.20 cum of 26.50-13.20mm, 0.43 cum of 13.20-2.36mm and 0.08 cum of 2.36mm & below size IRC metal with 37 Kgs of VG30/ VG40 bitumen for premixing per 10sqm including cost and conveyance of all materials to CMP site, heating the bitumen and aggregate to required temperature and mixing them in required temperature in central hot mix plant 20-30 ton capacity, conveying the mix by tipper trucks to paver site, spreading the mix to uniform thickness of 50mm with mechanical paver to the specified grades and cross sections and consolidated by 8-10 tonne Vibratory / Pneumatic Roller to the required density etc., including labour for attending to paver to site etc., including hire charges and fuel charges for 20-30 t CMP with bitumen boiler, tipper trucks, Paver Finisher / 9m paver finisher, Vibratory / Pneumatic roller and all other tools and plant required, including fuel and all other incidental charges etc., complete as per specification using CMP as per clause 504 of MORTH Rev-5	CUM	7266.45	1,81,661.25
2	50	Providing and laying, spreading and compacting graded stone aggregates to Wet Mix Macadam of 250mm thick specification including premixing the materials with water at OMC in mechanical mix plant carriage of mixed material by tipper to site laying in uniform layers with pavers in Sub Base/ Base course on well prepared surface and compacting with vibratory roller to achieve the desired density including cost of material, labour charges, rentals for machinery, fuel and all other incidental charges etc., complete as per clause 406 of MORTH Rev-5	CUM	1302.71	65,135.50

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SL NO	Quantity	ITEM DESCRIPTION	UNIT	RATE (Rs)	AMOUNT (Rs)
3	2120	Providing and laying Bituminous Concrete upto 40 mm thick using 0.13 cum of 19.00-9.50 mm, 0.17 cum of 9.50-2.36mm and 0.26 cum of 2.36 and below with 50.30 kgs of VG30/ VG40 bitumen for premixing per 10sqm including cost and conveyance of all materials to CMP site, heating the bitumen and aggregate to required temperature and mixing them in required temperature in central hot mix plant 20-30 ton capacity, conveying the mix by tipper trucks to paver site, spreading the mix to uniform thickness of 40mm with mechanical paver to the specified grades and cross sections and consolidated by 8-10 tonne Vibratory / Pneumatic Roller to the required density etc., including labour for attending to paver to site etc., including hire charges and fuel charges for 20-30 t CMP with bitumen boiler, tipper trucks, Paver Finisher / 9 m paver finisher, Vibratory / Pneumatic roller and all other tools and plant required, including fuel and all other incidental charges etc., complete as per specification using CMP as per clause 507 of MORTH Rev-5	CUM	9834.66	2,08,49,479.20
4	53000	Providing and laying Tack Coat over Existing BT surface using 2 Kg of Bitumen Emulsion (RS1) per 10 sqm for preparatory to another bituminous construction over it including cost of material, labour charges, rentals for machinery, fuel and all other incidental charges etc., complete as per Clause 503 of MORTH Rev-5	SQM	16.76	8,88,280.00
5	200	Providing and laying Tack Coat over WBM/ WMM surface (treated with primer) using 2.50 Kg of Bitumen Emulsion (RS1) per 10 sqm for preparatory to another bituminous construction over it including cost of material, labour charges, rentals for machinery, fuel and all other incidental charges etc., complete as per Clause 503 of MORTH Rev-5	SQM	15.19	3,038.00

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SL NO	Quantity	ITEM DESCRIPTION	UNIT	RATE (Rs)	AMOUNT (Rs)
6	1600	Providing and laying of hot applied thermoplastic compound 2.50 mm thick including reflectorizing glass beads at 250gms.per sqm area, thickness of 2.50 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks, holes etc complete as per MORT and H specn.No.803.	SQM	380.74	6,09,184.00
7	3200	Supply and fixing unidirectional Reflective Pavement Marker (RPM) or road studs bonded to or anchored within the road surface for lane marking and delineation for night time visibility with plastic body of RPM / road studs moulded from ASA (Acrylic Styrene Acrylonitrile or HIPS (High Impact Polystyrene). The marker shall support a load of 13635 Kgs tested in accordance with ASTM D4280 reflective panels shall consists of No. of lenses containing single or dual prismatic cube capable of providing total internal reflection of the light entering the lens face. Lenses shall be moulded of Methyl Methacrylate conforming to ASTM D788 etc. complete. Quoted rate includes cost of 3 M brand reflecting plastic studs ,epoxy bonding, labour charges for surface preparations ,fixing the studs in position and proper alignment etc complete	NO	380.74	12,18,368.00
8	13200	Cold milling of Bituminous Pavement surface, for depth 40 mm-50 mm by mechanical means using milling machine, , without disturbing the underlying layers, to proper line and level, cleaning the surface properly after milling and removing the loose materials, Loading transporting & unloading the milled waste materials at the designated place upto a distance of 5 KM, necessary guarding, barricading & lighting including hire charges of machineries, cost of fuel and labour and other incidental charges all complete and as per direction of Engineer-in-charge	SQM	88.00	11,61,600.00
		TOTAL (excluding GST & BOCW cess)			2,49,76,745.95

Note:

1. Mentioned rates exclude GST % and BOCW cess %.

CONTRACTOR SEAL & SIGN

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