

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

28-04-26

To

The Tenderer

Dear Sirs,

Name of work: Laying / Relaying / Repair & Maintenance of Roads (Around 3.0 KM) in and around the Township Complex, BHEL Trichy

Ref: Tender Schedule No. **CT:TS:02:26-27**

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 forma, 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: NIL

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 **09-05-26 @ 10:00 Hrs.** The qualification bid will be opened on **09-05-26 @ 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 Bidder s those who have qualified after evaluation of the qualification bid.

Thanking you,

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

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

Bharat Heavy Electricals Limited ,Trichy -14- Civil Engineering Department
Part – I TECHNO COMMERCIAL BID (QB) - SECTION 1 - NOTICE INVITING E-TENDER

A) Tender Details		
1.	Tender Schedule No.	CT:TS:02:26-27
2	Tender Type	Open Tender – Two Part (e-Tender)
3.	Name of Work	Laying / Relaying / Repair & Maintenance of Roads (Around 3.0 KM) in and around the Township Complex, BHEL Trichy
4.	Location of Work	BHEL – Trichy Complex
5.	Contract Value	Rs. 99.96 Lakhs + Applicable GST & BOCW Cess
6.	Period of Contract	3 (Three) Months
6a	Maintenance period	12 (Twelve) Months
7.	EMD & SD	EMD - NIL SD - 5% of the Contract Value
8.	Reverse auction	Reverse auction is applicable to this tender.
9	Split & award	NOT APPLICABLE. Work Will be awarded to only one Agency
10.	Tender document Details	Qualification Bid: Pages 1 to 182 ; Price Bid: Pages 183 to 187
11.	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
12.	Last Date for Receipt of Tender	09.05.26 / 10:00 Hrs.
13.	Date of Techno Commercial Bid opening	09.05.26 / 14:00 Hrs.
14.	MSE benefits if applicable	Not Applicable
15.	Contact details of queries related to tender & Scope of Work	KV Lakshmi Narayanan, Sr Manager, Civil / Planning, 0431 257 1053; e-mail: kvln@bhel.in

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

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	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 along with cancelled cheque leaf	To be filled in e-procurement portal
7.	If any vendors do not have ESI, EPF No. the vendor should produce a declaration in their letter head as per Annexure 1.	

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

Sl. No	Qualifying Criteria	Details	Status
1	EMD – NIL		
2	Technical Competence		
	<p>Experience of having successfully completed similar works during last 7 (Seven) years ending last day of month previous to the one in which applications are invited should be either of the following</p> <p>a) Three similar completed works costing not less than the amount equal to Rs 40.00 Lakhs (Excluding GST)</p> <p style="text-align: center;">(or)</p> <p>b) Two similar completed works costing not less than the amount equal to Rs 50.00 Lakhs (Excluding GST)</p> <p style="text-align: center;">(or)</p> <p>c) One similar completed work costing not less than the amount equal to Rs 80.00 Lakhs (Excluding GST)</p> <p>(Experience proof from BHEL shall contain work order copies and experience proof from other than BHEL shall contain work order copies along with Completion Certificate (or) Confirmation mail from completion certificate issuing authority)</p> <p>Similar Work means “Construction of Bituminous Roads, Laying/Relaying/Repairs & Maintenance of Bituminous roads.</p> <p>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 date of Bid opening.</p>	<p>Details to be filled and documentary evidence to be uploaded in e-procurement portal</p>	<p><input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded</p>
3	<p>FINANCIAL SOUNDNESS:</p> <p>Average Annual financial turnover for any of the three consecutive years during the last six financial years i.e. 2019-20, 2020-21, 2021-22, 2022-23, 2023-24 & 2024-25 shall be equal to or more than Rs 30.00 Lakhs.</p> <p>Documents to Prove Financial Soundness of the Firm (in any of the following manner given below) for any three consecutive years out of six years i.e. 2019-20, 2020-21, 2021-22, 2022-23, 2023-24 & 2024-25</p> <p>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</p>	<p>Details to be filled and documentary evidence to be uploaded in e-procurement portal</p>	<p><input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded</p>
4	<p>Income Tax Registration (PAN) (Copy of PAN to be uploaded)</p>		<p><input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded</p>
5	<p>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).</p>		<p><input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded</p>

Sl. No	Qualifying Criteria	Details	Status
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)	Details to be filled and documentary evidence to be uploaded in e-procurement portal	<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
7	Annexure 1 - Details of PF & ESI Registration (if registration of EPF / ESI / Both (EPF & ESI) is/are not available, self-declaration as per the Annexure 1 is to be enclosed at the time of submission of the tender)		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
8	Annexure 2 - Local supplier self-declaration		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
9	Annexure 3 - Declaration for non-cartelization		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
10	Annexure 4 - E invoice Declaration		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
11	Annexure 5 - Declaration for Conflict of Interest		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
12	Annexure 6 - Offer Forwarding Letter		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
13	Annexure 7 - Declaration regarding Insolvency/ Liquidation/ Bankruptcy Proceedings		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
14	Annexure 8 - Declaration by Authorized Signatory		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
15	Annexure 9 - Declaration by Authorized Signatory regarding Authenticity of submitted Documents		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
16	Annexure 10 - Declaration for related Parties and their Actiites		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
17	Annexure 11 – Declaration for Relation in BHEL		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
18	Annexure 12 – Site Visit Certificate		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded
19	Annexure 13 - No deviation & Declaration certificate		<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded

Note :

1. Bidder s 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

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	Power of Attorney for signing tender (if applicable) – Annexure A2			<input type="checkbox"/> uploaded / <input type="checkbox"/> Not uploaded

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:

Sr 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:

Local Supplier Self-Declaration

Tender Schedule No.	CT:TS:02:26-27
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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)

Declaration for Non-Cartelization

To:

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

Sir,

At this time of submission of this tender **CT:TS:02:26-27** 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:

E- Invoice Declaration

To:

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

Dear Sir,

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

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.)

Conflict of Interest among Bidders/ Agents – Annexure - 5

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

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

Dear Sir,
Sub: Declaration regarding Conflict of Interest

Ref: 1) Tender Enquiry No. & Date: **CT:TS:02:26-27**

2) All other pertinent issues till date

Treatment of cases regarding conflict of interest:

The Bidder notes that a conflict of interest would said to have occurred in the tender process and execution of the resultant contract, in case of any of the following situations:

- i. If its personnel have a close personal, financial, or business relationship with any personnel of BHEL who are directly or indirectly related to the procurement or execution process of the contract, which can affect the decision of BHEL directly or indirectly;
- ii. The Bidder (or his allied firm) provided services for the need assessment/ procurement planning of the Tender process in which it is participating;
- iii. Procurement of goods directly from the manufacturers/ suppliers shall be preferred. However, if the OEM/ Principal insists on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. In case bids are received from both the manufacturer/ supplier and the agent, bid received from the agent shall be ignored. However, this shall not debar more than one Authorized distributor (with/ or without the OEM) from quoting equipment manufactured by an Original Equipment Manufacturer (OEM) in procurements under a Proprietary Article Certificate.
- iv. A Bidder participates in more than one bid in this tender process. Participation in any capacity by a Bidder (including the participation of a Bidder as a partner/ JV member or sub-contractor in another bid or vice-versa) in more than one bid shall result in the disqualification of all bids in which he is a party. However, this does not limit the participation of an entity as a sub-contractor in more than one bid if he is not bidding independently in his own name or as a member of a JV.

Declaration

I/We, hereby declares that I/we have read and understood the above aspects, and the I/we confirms that such conflict of interest does not exist and undertakes that I/we will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder {s}, in this regard. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. **In case, the I am / We are found having indulged in above activities, the same will be considered as a violation of the tender conditions, and suitable action shall be taken by BHEL as per extant policies/ guidelines.**

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

Annexure – 6

OFFER FORWARDING LETTER / TENDER SUBMISSION LETTER -
(To be typed and submitted in the **Letterhead** of the Company/Firm of Bidder)

Tender Schedule No : **CT:TS:02:26-27**

Date:

To,

**Sr Manager
Civil Planning
Civil Township Office
BHEL,Trichy-14**

Dear
Sir,

Sub: Submission of Offer against Tender Schedule No: **CT:TS:02:26-27**

Having examined the tender documents against your Tender EnquiryNo. dated _____ and having understood the provisions of the said tender documents and having thoroughly studied the requirements of BHEL related to the work tendered for, in connection with _____ (name of work), we hereby submit our offer for the proposed work in accordance with terms and conditions mentioned in the tender documents, at the prices quoted by us and as per the scope of work and delivery schedule given in NIT.

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

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

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

Li
st.

Authorized Signatory

Signature

: Name:

Address:

Place

:

Date:

UNDERTAKING

(To be typed and submitted in the **Letterhead** of the Company/Firm of Bidder)

To,
**Sr Manager
Civil Planning
Civil Township Office
BHEL,Trichy-14**

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: Tender Schedule No: **CT:TS:02:26-27**

I/We,

declare that, I/We am/are not under insolvency resolution process or liquidation or Bankruptcy Code Proceedings (IBC) as on date, by NCLT or any adjudicating authority/authorities, which will render us ineligible for participation in this tender.

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

Pla:
Date
:

**DECLARATION BY AUTHORISED SIGNATORY
OF BIDDER**

(To be typed and submitted in the **Letterhead** of the Company/Firm of
Bidder)

To

**Sr Manager
Civil Planning
Civil Township Office
BHEL,Trichy-14**

Dear
Sir,

Sub: **Declaration by Authorized Signatory**

Ref: 1) Tender Schedule No: **CT:TS:02:26-27**

2) All other pertinent issues till date

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

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

Yours faithfully,

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

) Date:

Enclosed: Power of Attorney

**DECLARATION BY AUTHORISED SIGNATORY
OF BIDDER**

(To be typed and submitted in the **Letterhead** of the Company/Firm of
Bidder)

To,

**Sr Manager
Civil Planning
Civil Township Office
BHEL,Trichy-14**

Dear Sir,

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

Ref: 1) Tender Schedule No : **CT:TS:02:26-27**

2) All other pertinent issues till date

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

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

Yours faithfully,

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

Date:

DECLARATION

(To be typed and submitted in the **Letterhead** of the Company/Firm of Bidder)

To
Sr Manager
Civil Planning
Civil Township Office
BHEL,Trichy-14

Dear Sir/ Madam,

Sub: **Details of related firms and their area of activities**

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

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

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

**DECLARATION FOR RELATION
IN BHEL**

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

**To
Sr Manager
Civil Planning
Civil Township Office
BHEL,Trichy-14**

Dear Sir,

Sub: Declaration for relation in BHEL

Ref: 1) Tender Scheule No : **CT:TS:02:26-27**

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

Tick (√)anyoneasapplicable:

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

O
R

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

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

Note:

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

DECLARATION CONFIRMING KNOWLEDGE ABOUT SITE CONDITIONS

(SITE VISIT CERTIFICATE)

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

To
Sr Manager
Civil Planning
Civil Township Office
BHEL,Trichy-14

Dear Sir,

Sub: Declaration confirming knowledge about Site conditions (BHEL Trichy)

Ref: 1) Tender Schedule No : **CT:TS:02:26-27**

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

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

Yours faithfully,

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

Date:

Place:

No deviation and Declaration to be given by vendor in vendor's letter head**Tender Schedule No: CT:TS:02:26-27**

We, the vendor, do hereby declare that we do not have any deviations to the tender terms and conditions as per

1. Technical Bid-Qualifying Criteria-Price bid
2. Special and General terms & Conditions of Contract

We have gone through all the tender terms and conditions; we have noted down the job content & 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.
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 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. 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.

**POWER OF ATTORNEY for SUBMISSION OF
TENDER**

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

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

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

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

Dated at _____, this _____ day of _____

Director/CMD/Partner/Proprietor

Signature of Mr. (Attorney)

Attested by: Director/CMD/Partner/Proprietor

Witness 1

Witness 2

Notary Public

(Please note that the Person issuing Power of Attorney shall possess the authority / authorisation to issue such Power of Attorney. Articles of Association / Board Resolution / Partnership Deed Shall be submitted along with the POA in support of the POA)

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" style="display: inline-table;"> <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" style="display: inline-table;"> <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

CONTRACTOR

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ACCEPTING OFFICER

SECTION 2 - PREAMBLE

1. The scope of work includes Laying / Relaying / Repair & Maintenance of Roads (Around 3.0 KM) in and around the Township Complex, BHEL 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. Being a time bound works, 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 as per the completion time given in the sub work orders 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 Bidder 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 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.
7. **The percentage / rate quoted shall not include applicable GST.**
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**
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 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 Bidder are advised to visit BHEL at Tiruchirappalli and get themselves acquainted with the site conditions before submitting the offer. Submission of Site Visit Certificate along with the offer is mandatory
 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, 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. 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.

21. 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.

22. **Payment Terms:**

No advance / mobilization advance will be given and the part-payment or advance for raw materials brought by the successful Bidder 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.

23. **PVC & ORC:**

PVC & ORC are not applicable for this tender.

24. The decision of Engineer-in-charge shall be final and binding on the contractor regarding clarification of items in this tender schedule.

25. 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 Bidder shall produce original document for verification if so decided by BHEL.

26. 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.

27. 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.

28. The works executed in the **own name of the Bidder only will be considered for eligibility criteria. The nominated committee may also visit the works executed by the contractor / Bidder to ascertain the nature of work relating to similar works before qualifying.**

29. The contractor shall strictly adhere to various labour laws in force. The contractor shall ensure compliance of EPF&MP Act 1952, by the subcontractors, if any engaged by the contractor.

30. The contractor shall follow norms of BHEL security system for movement of men & material including biometric system & materials within the complex.
31. 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.
32. Bank Guarantee format and the list of consortium banks are enclosed for BG submission against Security Deposit.
33. Bidder 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.
34. 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.
35. 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.
36. 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.
37. Adequate number of Quality Engineer and qualified Safety Engineer should be deployed at site. Experienced Engineers / Supervisors are to be engaged.
38. The Bidder has to deploy adequate labour of required categories such as Unskilled, Skilled, Mason, Carpenter, Plumber, Welder, Fitter, Mistry, 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.
39. 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.
40. 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.
41. The works contract to be entered into with the successful Bidder will be governed by the BHEL General Conditions of Contract in force.
42. All the works shall be executed as per the standard specifications as provided in TNBP / BIS and special specifications of manufacturer.
43. All the materials to be used in the work and the nature of work shall conform to the applicable BIS or other standards as the case may be and shall be got approved by the Engineer-in-charge before actual incorporation in the work.

44. 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.
45. **The contractor should use only the materials of brand and quality as approved by BHEL.** All materials and consumables brought by the contractor should have manufacturer's certificate.
46. 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 plants, materials, etc., brought inside BHEL complex.
47. 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.
48. 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.
49. The Bidder 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.
50. It shall be the responsibility of the contractor to see that the workmen do not utilize the departmental canteen facilities. Contractor has to make his own arrangements to provide refreshment for the workmen.
51. 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.
52. 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.
53. 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.
54. 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 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.
55. 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.

56. Field quality plan issued by BHEL should be strictly followed.
57. *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-*
58. *Any mixing of concrete or cement mortar directly on the road surface will attract a fine of Rs.1000/-.*
59. *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.*
60. LD / Penalty clause is applicable as per General Conditions of Contract in force.
61. BHEL reserves its right to finalize the contract through reverse auction for which only qualified Bidder will be provided with necessary documents containing reverse auction rules, terms and conditions for this purpose.
62. 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.
63. The correspondence exchanged against the tender from both Bidder 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.
64. 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.
65. In case Letter of Intent (LOI) 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.
66. Bidder 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.

67. *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*
68. Permission for erection of temporary work sheds etc., at site will have to be obtained from BHEL in writing in advance.
69. Quarters, if available will be allotted to the Contractor by HR- Administration of BHEL based on the written request from the Contractor/ his representatives duly forwarded from Civil Department. The contractor has to declare that the quarters allotted would be for the bonafide use of his representatives only and he is required to remit applicable monthly rent & Security deposit in timely manner. The terms and conditions of allotment would be subject to BHEL policy on allotment of Quarters.

70. 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.
- 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.
- ~~i) 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.~~

(TO BE STAMPED IN ACCORDANCE WITH STAMP ACT)

BANK GUARANTEE FOR SECURITY DEPOSIT

1. ~~THIS DEED OF GUARANTEE made this..... day of (month).....(year) By(Bank 's full address) in favour of M/s Bharat Heavy Electricals Limited, Unit : Thiruverumbur, Tiruchirapalli 620 014, having its Registered Head Office at BHEL House, Siri Fort , New Delhi 110049.~~
2. ~~WHEREAS M/s Bharat Heavy Electricals Limited (hereinafter called the "COMPANY") have placed work order(s) which are pending as on date and also proposes to place further work order(s)) (hereinafter called the "CONTRACT") upto..... (Date) for fabrications/ for machining/supply of pressure and non— pressure parts with M/s.....(CONTRACTOR'S Full address) (hereinafter called the "CONTRACTOR /SUPPLIER") and as per the terms of the contract, the company has issued /proposes to issue raw materials to the contractor to enable them to complete the work.~~
3. ~~AND WHEREAS one of the conditions for placing such contract(s) is that the Contractor/ Supplier shall provide the Company a Bank Guarantee for Rs.in lieu of cash and towards the security deposit for the raw materials supplied and to be supplied, in pursuance of the contract(s) already placed but pending as on date and the contract(s) to be placed from time to time upto (Date) and also for the satisfactory performance and completion of work/supply as per the terms and conditions of the said contract(s).~~
4. ~~AND WHEREAS the Contractor/ Supplier..... approached the (Bank) and at their request and in consideration of the arrangement arrived at between the said Contractor / Supplier and the said Bank,~~
5. ~~We(indicate the name of the bank with full address), do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Company stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Company by reason of breach by the said Contractor(s) of any of the terms and conditions contained in the said Agreement or by the reason of the contractor(s) 'failure to perform' the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.~~
6. ~~We..... (Bank) , further assure that the Contractor/ Supplier shall be responsible for the safe custody and protection of the raw materials that have been supplied/and to be supplied by BHEL under the contract(s) already placed but pending as on date and to be placed upto(date) against all risks till they are delivered back as finished products to BHEL as per the terms and conditions of the Contract or as they may direct and until such time, the Contractor/ Supplier shall hold the raw materials in trust for BHEL and shall not alienate the same in any manner whatsoever by way of sale or mortgage or charge or hypothecation etc. in favour of anyone else including the bank herein or any other banks /financial institutions etc.~~

The raw materials shall always remain the property of BHEL and the Bank shall indemnify BHEL against the loss, damage or deterioration whatsoever in respect of the said raw materials while in the possession of the Contractor/Supplier. The raw materials of BHEL shall always be open for inspection by any Officer authorised by BHEL. The liability under this Guarantee is a continuing one covering all contracts already placed but pending as on date and to be placed up to.....(date) and should any loss or damage occur on account of the breach of the terms and conditions of the said contract(s) by the Contractor/ Supplier or should any surplus raw materials become due to the Company under the Contract(s) and remains undelivered by the Company, the Bank shall indemnify the Company for the loss /damage for the value of raw materials for Rs...../- (RupeesOnly) and this is without prejudice to any other remedies which may be otherwise available to the Company by deduction from any sum due or any sum

~~which at any time hereinafter become due from the Contractor/ Supplier under this or any other Contract(s).~~

- ~~7. We undertake to pay unconditionally to the Company any money so demanded notwithstanding any dispute(s) raised by the Contractor in any suit, or proceedings pending before any Court or Tribunal or Arbitration or before any other authority relating thereto our liability under this present being absolute and unequivocal. The payment under this guarantee would not wait till the disputes have been decided by any Court or Tribunal or in the arbitration proceedings or by any other authority. The payment so made by us under this Bond shall be a valid discharge of liability for payment thereunder and the Contractor(s) shall have no claim against us for making such payment.~~
- ~~8. We.....(indicate the name of Bank), further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Company under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till.....Office / Department/ Division of the Company certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.~~
- ~~9. (i) Unless a demand or claim under this guarantee is made on us in writing on or before thewe shall be discharged from all the liability under this guarantee thereafter. But where such claim or demand has been preferred by the Company with the Bank before the expiry of the said date, the claim shall be enforceable notwithstanding the fact that the said enforcement is effected after the said date.~~
- ~~(ii) For the purpose of this clause, any letter making demand on the Bank by M/s. BHEL dispatched by Registered Post with Ack.Due or by Telegram or by any Electronic media addressed to the above mentioned address of the Bank shall be deemed to be the claim / demand in writing referred to above irrespective of the fact as to whether and when the said letter reaches the Bank, as also any letter containing the said demand or claim is lodged with the bank personally.~~
- ~~10. We(indicate the name of Bank), further agree with the company that the Company 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 agreement or to extend time of performance by the said Contractor (s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by any reason of any such variation or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of the company or any indulgence by the company to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating would but for this provision have effect of not so relieving us.~~
- ~~11. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).~~
- ~~12. It shall not be necessary for the company to proceed against the contractor before proceeding against the guarantor bank and the guarantee herein contained shall be enforceable against them notwithstanding any security, which the company may have obtained or obtain from the Contractor shall, at the time when proceedings are taken against the guarantor hereunder be outstanding or unrealised.~~
- ~~13. Any claim or dispute arising under the terms of this document shall only be enforced or settled in the Courts at Tiruchirapalli.~~
- ~~14. The guarantor hereby declare that it has power to execute this guarantee and the executant has full powers to do so on its behalf under the proper authorities granted to him/them by the guarantor.~~

15. ~~We (indicate the name of Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the company in writing. In witness whereof we....., (indicate the name of Bank) have hereunto setout Bank Seal the day month 200.....~~

~~Bank Phone No.~~

~~Bank e-mail ID~~

~~Bank FAX No~~

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.

LIST OF CONSORTIUM BANKS IN INDIA

(as on 15.12.2011)

List of Consortium Bank			
	Nationalised Bank		Public Sector Banks
1	Bank of Baroda	19	IDBI
2	Canara Bank		
3	Central bank	20	Foreign bank
4	Indian Bank	21	J-P Morgan
5	Indian Oversea Bank	22	CITI Bank N.A
6	Punjab National Bank	23	Deutsche Bank AG
7	Punjab & Sindh Bank	24	The Hongkong and Shanghai Banking Corporation Limited
8	State Bank of India	25	Standard Chartered Bank
9	UCO Bank	26	The Royal Bank of Scotland N.V.
10	Union Bank of India		
11	Private bank		
12	Axis Bank		
13	The Federal Bank Limited		
14	HDFC		
15	Kotak Mahindra Bank		
16	ICICI		
17	Indusind Bank		
18	Yes 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.~~

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

Section 3A – INSTRUCTIONS TO BIDDER

~~1) – Earnest Money Deposit:~~

~~EMD is to be paid by Bidder for securing fulfilment of any obligations in terms of the NIT. Earnest Money is to be paid by each Bidder to ensure that the Bidder 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) – Cash deposit under the extent Income Tax Act (before Tender opening) or~~
- ~~b) – Electronic Fund Transfer credited in BHEL account (before Tender opening) or~~
- ~~c) – Bankers Cheque/Pay order/Demand Draft (DD) in favor of BHEL Trichy (along with offer) or~~

~~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 Bidder will be forfeited if,~~

- ~~a) – After opening the tender and within the offer validity period, the Bidder 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 Bidder shall be withheld in case any action on the Bidder 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.~~

~~b) – EMD of successful Bidder will be retained as part of Security Deposit~~

- 2) The Bharat Heavy Electricals Limited will not be bound by any power of attorney granted by the Bidder 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.
- 3) ***If the Bidder 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.***
- 4) The expenses for executing and stamping the agreement shall be paid by the contractor.
- 5) 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.

- 6) Bidder 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 Bidder for a period of SIX months from the date of opening of tenders.
- 7) *"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 Bidder s. In case more than one Bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 Bidder shall be decided by a toss / draw of lots, in the presence of the L-1 Bidder (s) or their representative(s). Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding."*
- 8) *Any deviation to this tender terms & conditions, and schedules of this tender will lead to total rejection of the offer submitted.*
- 9) *Bidder 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.*
- 10) *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.*
- 11) *The tender must be signed digitally / physically by Partner having powers to sign tenders / 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 Bidder 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.*
- 12) *The tender schedule, and the tender shall be deemed to form an integral part of the contract to be entered into for this work.*
- 13) *Bidder shall sign the tender documents for having accepted the conditions and upload in e-procurement portal.*
- 14) *Tender can be cancelled at any stage due to unavoidable circumstances.*
- 15) *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.*
- 16) *However, it shall be sole responsibility of Bidder that the uploaded documents remain legible.*
- 17) *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) BIDDER 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 Bidder 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) The percentage rate quoted in the tender shall remain valid for a period SIX MONTHS from the date of opening of tenders.
- 26) 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.
- 27) 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.
- 28) 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.
- 29) Should a Bidder 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 Bidder 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.
- 30) 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.
- 31) 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.
- 32) If a Bidder 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.
- 33) Late and Delayed Tenders will be summarily rejected and under no circumstances it will be considered and accepted.
- 34) 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. Bidder s should regularly visit above website(s) to keep themselves updated.
- 35) 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 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 .

- 36) 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.
- 37) 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.
- 38) 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.
- 39) 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.
- 40) **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 Attorney issued by the Proprietor / All Partners / Board of Directors / or the person should have power to sign the tender by way of Articles of Association of the Firm / Partnership Deed / Board Resolution. Documentary evidence notarized by a Notary public shall be submitted in this regard

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 Bidder 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 Bidder only will be considered for eligibility criteria.

- 41) 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.

- 42) The offers of the Bidder / 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.

- 43) 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 not 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.
- 44) 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.
- 45) 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.
- 46) Contractors are advised that contract labours must be employed without any discrimination on caste or creed or religion or gender basis.
- 47) The contractor shall submit police verification certificate in respect of the persons, engaged for first time by the contractor, for delivering services.
- 48) 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.
- 49) 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.
- 50) 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.
- 51) 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.
- 52) 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.

- 53) 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 Bidder's own expense.
- 54) 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.
- 55) **BENEFITS TO STARTUPS: Applicable Benefits to Startups as per latest circulars of Government of India / Department of Public Enterprises will be extended to eligible bidders who satisfy the "START UP" certificate norms.**
- 56) **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.
- 57) **The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder (s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.**

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. 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.
10. 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.
11. 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.

SECTION 4 – PROCEDURES & GUIDELINES

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

PREAMBLE

In order to protect the commercial interests of BHEL, it becomes necessary to take action against suppliers/ contractors by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price etc. Suspension of Business Dealings could be in the form of Debarring a supplier/ contractor or a Bidder or an applicant for registration as a registered supplier. For this purpose, the following guidelines shall be followed across all BHEL units/ divisions/ regions (here in after referred to as Units). These guidelines are not exhaustive but enunciate broad principles governing action against such suppliers/ contractors.

SCOPE

- a. For the purposes of these Guidelines, Company means the Bharat Heavy Electricals Limited.
- b. These Guidelines will be applicable to Supplier (which will include vendors, suppliers and contractors) i.e. to say:
 - i. An entity that has applied for registration in any Unit of the Company for any material/service category.
 - ii. A Bidder in a tender notified by the Company;
 - iii. An entity which has been awarded a contract.

Note: The term “Tender” or “Contract” referred to in sub-clause (ii) and (iii) as above, refers to tender or contract notified or awarded, as the case may be, by the Company, in terms of the Purchase Policy or the Works Policy of the Company.

For the bid(s) floated on GeM, the action for suspension will be dealt as per the incident management policy of GeM.

- c. Any action under these Guidelines shall be without prejudice to all remedies available under the contracts with the Suppliers or other legal provisions.
- d. If a Supplier, who has participated in a tender/ entered into a contract with BHEL as an Agent/ Trader/ Dealer/ Stockist/ Distributor/ Channel partner etc. (hereinafter referred to as Agent) of an identified Principal/ OEM/ Mills/ Works/ Plants (hereinafter referred to as Principal) for that bid/ contract, then action as per these guidelines can be undertaken against the Principal as well as Agent as appropriate.
- e. In case of the supplier being a Sole Proprietorship firm or a Partnership firm, action under these Guidelines shall be taken against both:
 - i. The Sole Proprietorship firm and the Sole Proprietor; or, as the case may be;
 - ii. The Partnership firm and all the partners thereof.

Accordingly, action will be taken under these guidelines against any other Sole Proprietorship firm owned by the same Sole Proprietor. Similarly, action under these guidelines will also be taken against another Partnership firm comprising of the same or some of the same Partners (but not including any new Partner) or a Sole Proprietorship firm owned by the same Partner(s).

f. In respect of consortiums and unincorporated Joint Ventures/ Association of Persons (AOP)/ Body of Individuals (BOI), action under these guidelines shall be taken against the defaulting consortium partners and defaulting members of the unincorporated Joint ventures/ Association of Persons (AOP)/ Body of Individuals (BOI).

1.0 Suspension of business dealing with Suppliers

The following category of suspensions have been provided in these guidelines depending upon the gravity of the omission or commission by the Supplier.

- a. Debarment within the unit for specific item(s)/ material category(ies)/ type of work(s) for six months.
- b. Debarment within the unit for all item(s)/ material category(ies)/ type of work(s) for one year
- c. Debarment across BHEL for all items/ material category(ies)/ type of work(s) for two years.

The Supplier may be debarred, as detailed hereinafter on the basis of one or more of the category wise reasons as enumerated hereunder:

1.1. Debarment within the unit for a specific item(s)/ material category(ies)/ type of work(s) shall be imposed for six months in the following cases, if

i. In the last three consecutive supplies of a specific material category, average quality rating, as provided in the supplier performance rating (SPR) as per SEARP, falls below 80% of the quality weightage. This is irrespective of supplies against PO(s) having single/ multiple delivery schedules.

Note: Not applicable in cases for erection works of Power Sector Regions, where separate guidelines for evaluation of capacity of Bidder s is being followed.

ii. Two consecutive delays, for reasons of delay attributed to the Supplier, in execution of the contracts where delay occurred is such that

- a. prescribed maximum LD time limits of the contracts is exceeded or
- b. delay period has equaled/ exceeded half the original delivery period specified in the contracts whichever among the above is earlier.

iii.

a. Overall SPR (Supplier Performance Rating) in that particular Unit in line with SEARP falls below 60% of the specific material category.

b. Bids of contractors (in PS-MSX portal) shall not be considered (if average score of last six months falls 60% or below as per guidelines for evaluation of capacity of Bidder s formula).

Note: – for (b), No specific period of Debarment shall be applicable.

iv.

a. Supplier works are under strike/ lockout for a period of more than three months.

b. Contractor has resorted to wanton stalling of work, strikes, picketing etc. during currency of the contract.

1.2. Debarment within the unit for all item(s)/material category(ies)/ type of work(s) shall be imposed for One year in the following cases, if

- i. Supplier tampers with tendering procedure affecting ordering process.
- ii. Supplier has misused BHEL documents/ drawings/ technical information or has breached the confidentiality agreement with BHEL.
- iii. after placement of order, Supplier fails to execute the contract.
- iv. within warranty period as per contract, Supplier continues to supply low/ less/ non-performing equipment/ services, repetitive failures, remains non-responsive.
- v. Wherever any part or full scope of supply/ work/ service has been awarded at the Risk and Cost of the defaulting vendor and the unexecuted value of scope for which the Risk and Cost action taken is more than 5% of the contract value.
- vi. After price bid opening but before placement of order, Supplier withdraws his offer or varies it in any manner within the validity period.
- vii. In spite of warnings, the Supplier persistently violates or circumvents the provisions of labour laws/ regulations/ rules or other statutory requirements.
- viii. Violation of Section 2, read with Section 3 of Integrity Pact, which are not covered in the list of defaults as per guidelines.

1.3. Debarment across BHEL shall be imposed for two years in following cases, if

- i. Supplier has made false declaration and/ or provided false information and/ or forged documents or has forged BHEL documents, certificates etc. for securing business, meeting PQR or for enlistment in BHEL or with other customers.
- ii. Supplier is found to be involved in cartel formation or in any other act so as to influence the bidding process or influence the price of the tender.
- iii. The Supplier has indulged in malpractices or misconduct such as bribery, corruption and fraud, pilferage, coercion, etc.
- iv. The Supplier is found guilty by any court of law for criminal activity/ offences involving moral turpitude in relation to business dealings.
- v. Supplier is found to have obtained any internal information/ documentation of BHEL by unauthorized means.
- vi. The foreign Principals along with the representing Agent shall be debarred together if information submitted jointly by them about their precise relationship, commission/ remuneration etc. payable/ receivable and other particulars as asked by BHEL, as per the extant guidelines regarding dealing with Agents of Foreign Suppliers is found false/ incorrect, at any stage.
- vii. Supplier has, damaged, failed to return free issue materials/ tools etc. of BHEL, for which recovery could not be affected against such materials, or substituted free issue materials/ tools etc. of BHEL.
- viii. Supplier has been declared insolvent or is under dissolution/ insolvency proceedings so as to affect the execution of work.

ix. The Supplier has tarnished/ maligned the image of BHEL or unfairly acted in a manner prejudicial to the commercial interest of BHEL or breached the confidentiality of the vital information with an intent to prejudice the interest of BHEL.

1.4. A Supplier can also be debarred with the approval of Director (E, R&D) provided a direction to this effect has been received from the administrative ministry of the Government.

2.0 Reason(s) for debarring a Supplier as above are only illustrative and not exhaustive. Depending upon the gravity, the competent authority may decide to debar a Supplier for any other adequate and sufficient reason.

3.0 Procedure

3.2 If prima-facie evidence or sufficient grounds exist for suspension, a 'show-cause notice' shall be issued to the Supplier giving a notice period of 15 days.

3.4 Interim Suspension:

In appropriate cases for justifiable reasons, fresh enquiries (including consideration of existing offers) can be stopped by the Unit with the approval of the authorities mentioned as follows from the date of issue of show-cause notice pending final decision by the competent authority. In case a Supplier submits a representation requesting for lifting of the Interim Suspension, then, the same shall be considered.

Note: Amongst others, in cases where recommendation for suspension of a supplier has been received from CBI/ Vigilance or any other investigating agency, the supplier may be immediately put on Interim Suspension for all fresh enquiries in the concerned unit pending final decision.

3.6 If no response to the show-cause notice is received from the Supplier within 15 days, the committee may decide to recommend suspension of business dealings or otherwise on the basis of the available evidence on record.

3.7 If the Supplier responds, the committee will consider the reply and recommend suspension or otherwise.

3.8 Personal hearing by the Committee would be provided to the Supplier, if so requested by the Supplier or if so required. The minutes of the discussions shall be signed immediately with the supplier after conclusion of such discussions and placed in the file. In case, the supplier does not sign the minutes or, as the case may be, does not attend the personal hearing, then, record notes of discussion shall be issued to the Supplier on the same day duly recording such facts.

3.10 In case more than one act or omission is alleged to have been committed by the Supplier, then, the case shall be dealt with for all such acts or omissions together as a case of higher category of suspension (as applicable) and will be accordingly placed before the Committee competent to deal with the higher type of suspension. However, the suspension to be imposed on the Supplier will be as per the highest category of act or omission that is/are established ultimately.

3.13

Note 2: In cases of Fraud (as defined in the Fraud Prevention Policy), unit may consider appropriate action as per BHEL's Fraud Prevention Policy.

Note 3: Wherever it comes to notice that the supplier considered for suspension in a given category, was earlier debarred by BHEL in the same category, in such cases, the period of debarment for the given supplier will be doubled for the given category.

4.0 The suspension order shall become effective from the earlier of the following events:

a. the date of its issuance;

Or,

b. In case fresh enquiries have been put on Interim Suspension as stipulated in para 3.4 then, from the date when the Interim Suspension was implemented.

5.0 Contractual obligations:

5.1 Treatment of Contracts with Suppliers in Debarment (specific to unit level debarment cases) (applicable for the user unit only):

5.1.1 Contracts already entered into with a Supplier before the date of issue of the order of debarment shall not be affected.

5.1.2 Depending upon the type of debarment, in ongoing cases where Techno-commercial Bids are under evaluation and any of the participant Supplier has been debarred, then the tender may be processed excluding the bid of that Supplier. However, if Price Bid has been opened and that Supplier happens to be L-1, then re-tendering is to be resorted to, excluding the Supplier.

5.1.3 The case of running framework agreement (FA) where multiple POs are placed against a single FA and if the Supplier has been debarred, further purchase orders against this FA are not to be placed on the Supplier during the period of debarment depending on the type of debarment.

5.2 Treatment of Contracts with Suppliers Debarred across BHEL:

5.2.1 Contracts already entered into with a Supplier before the date of issue of the order of debarment across BHEL shall not be affected.

Once the order for debarment across BHEL is passed, existing offers/ new offers of the Supplier shall not be entertained.

6.0 Lifting of Suspension

Lifting of Suspension is to be automatic after the period of suspension is over. As the debarment Order across BHEL will result in automatic cancellation of registration, re-registration will be required as per Clause 12.0 of the Guidelines. In cases where BHEL has suffered direct financial loss like, supplier has damaged, failed to return free issue material of BHEL etc., such suppliers shall not be considered in the procurement process of BHEL unless the loss is recovered from the supplier.

9.0 List of Suppliers debarred across BHEL shall be hosted on BHEL's website.

12.0 Registration of supplier debarred across BHEL shall be deemed to have been cancelled automatically. Supplier once debarred across BHEL shall have to seek fresh registration in the respective BHEL unit(s) on lifting of debarment across BHEL.

SECTION 5 - SPECIAL CONDITIONS OF CONTRACT

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CHAPTER I

SCOPE OF CONTRACT

1. Heading to the Contract:

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

2. 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.

3. 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.

4. 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.

5. 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.

6. 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 there of 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.

7. 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.

8. 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.

9. 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.

10. 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.

11. 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 there for 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 II

PERFORMANCE OF THE CONTRACT

16. 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.

17. 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 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

- 18.** 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-contractor's 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

19. 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.

20. **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.

21. **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 Bidder .

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.

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 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.

22. 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.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

32. 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.

33. 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.

34. 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.

35. 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.

36. 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.**

37. 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.

38. 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.

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.

39. 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.

40. 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.

41. 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 be 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 III

42. Valuation of Deviations:

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

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 (BHEL SR 2013-14) 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 qualities 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.

43. 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.

44. Post Technical Audit of Work and Bills:

BHEL reserves the right to carry out a post-payment audit and technical examination of the work and final bill including all supporting vouchers, abstracts etc., and to enforce recovery of any sums becoming due as a result thereof 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.

45. Materials Issued by BHEL

1. 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.
2. **CEMENT:**

Excess consumption of cement over and above the theoretical requirement as per BHEL Data upto a limit of 5% will be charged at the rate of Rs. 7191/per M.T. + applicable taxes at the time of recovery.

Consumption beyond 5% will be charged at the punitive recovery rate of Rs. 14,382/per M.T.+ applicable taxes at the time of recovery.

The above rates are only indicative and BHEL issue rate on date of actual recovery will be applied.

Gunny bags or Polythene Bags or Paper Bags in which cement is issued from BHEL Stores, need not be returned by Contractor to BHEL. The cost for each empty cement bag will be recovered from the Contractor's bills at the following rates.

i.	Empty cement gunny bag	Rs.1.25 + Applicable GST / each
ii	Empty Polythene bag	Rs. 0.50 + Applicable GST / each
iii	Empty paper bag	Rs. 0.25 + Applicable GST / each.

3. REINFORCEMENT STEEL:

All surplus reinforcement rod with the contractor shall be returned to BHEL Stores at his own cost in the form of full lengths, useful cut bits and scrap. The invisible (non-returnable) wastage should not exceed a maximum of 0.5% of the actual quantity consumed in the work.

The contractor shall return all the scrap to the disposal stores at his own cost. Bent rods will also be taken as scrap only, irrespective of their length. The maximum permissible limit of scrap without recovery is 5% of actual consumption. The recovery details for the materials are as follows:

a)	Single recovery rate for the non-returned scrap up to 5% of actual consumption	:	Rs. 58,167/- per M.T + applicable taxes at the time of recovery
b)	The punitive recovery rate for steel qty. not accounted and extra scrap generated beyond 5% of actual consumption	:	Rs. 1,16,334/- per M.T. + applicable taxes at the time of recovery

The above rates are only indicative and BHEL issue rate on date of actual recovery will be applied.

4. STRUCTURAL STEEL SECTIONS:

All surplus raw steel remaining with the contractor shall be returned to BHEL stores at his own cost after completion of fabrication, in the form of full lengths, useful cut bits and scrap. The following yardstick will be adopted for the purpose of classification of scrap.

(a) Mild steel and alloy steel plates and sheets	500 X 250 mm and above	Useful cut bit
(b) Mild steel and alloy steel plates and sheets	Less than 500 X 250 mm	Scrap
(c) Structurals	One metre and above in length	Useful cut bits
(d) Structurals	Less than one metre in length	Scrap

The invisible (Non-returnable) wastage should not exceed a maximum of 2% by weight of fabricated steel work and returnable wastage generated by way of scrap or useful cutbits shall be returned at "Actuals". Maximum permissible limit for scrap without recovery shall be 5% of actual fabricated quantity. However, every care should be taken to see that raw steel is utilized most economically by preparing necessary cutting lists to restrict the scrap within the permissible limit.

Should the quantum of invisible wastage exceed the 2% permissible limit, RECOVERY AT TWO TIMES OF THE VALUE OF the extra tonnage involved (which will be evaluated on an average cost per tonne basis considering the total raw steel materials issued) will be effected from the contractor for the excess quantity involved **(2 times x Rs. 62,740 = Rs. 1,25,480 / MT + applicable taxes at the time of recovery)**. The above rates are only indicative and BHEL issue rate on date of actual **recovery**, will be applied.

The Contractor shall submit a material tallying statement on completion of the work indicating the details of quantities of each material (section by section) received quantities used for fabrication as per DOD lists. Quantity returned in full length, useful cut bits and scrap and the quantity reckoned as invisible wastage.

i)	For Structural Steel:		
a)	Single recovery rate for the non-returned scrap up to 5% of actual consumption	:	Rs. 62,740 /- per M.T + applicable taxes at the time of recovery
b)	The punitive recovery rate for steel qty. not accounted and extra scrap generated beyond 5% of actual consumption	:	Rs. 1,25,480 /- per M.T. + applicable taxes at the time of recovery

ii)	For Rails:		
a)	Single recovery rate for the non-returned scrap up to 5% of actual consumption	:	Rs. 65,739/- per M.T + applicable taxes at the time of recovery
b)	The punitive recovery rate for steel qty. not accounted and extra scrap generated beyond 5% of actual consumption	:	Rs. 1,31,478/- per M.T. + applicable taxes at the time of recovery

iii)	For ERW Tubes:		
a)	Single recovery rate for the non-returned scrap up to 5% of actual consumption	:	Rs. 42,534/- per M.T + applicable taxes at the time of recovery
b)	The punitive recovery rate for steel qty. not accounted and extra scrap generated beyond 5% of actual consumption	:	Rs. 85, 068/- per M.T. + applicable taxes at the time of recovery

iii)	For Seamless Steel Tubes:		
a)	Single recovery rate for the non-returned scrap up to 5% of actual consumption	:	Rs. 1,23,260/- per M.T + applicable taxes at the time of recovery
b)	The punitive recovery rate for steel qty. not accounted and extra scrap generated beyond 5% of actual consumption	:	Rs. 2, 46,520/- per M.T. + applicable taxes at the time of recovery

The above rates are only indicative and BHEL issue rate on date of actual **recovery**, will be applied.

5. The Contractor should maintain proper accounts of cement, MS rods / CTD bars, structural steel sections and other materials if any supplied by this organization and these should be available at the site of the work for verification and check by the official of this organization at any time.
6. 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
7. 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.

8. 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.
9. 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.
10. 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

46. Liquidated Damages for AMC Contracts – NOT APPLICABLE

CHAPTER IV

47 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:

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. 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;
 - 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 time 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
- 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.

48. 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 not exceed 100	3
c) For additional persons	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.

49 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.**

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 Bidder 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. Bidder are requested to quote their offer after taking into account of the above factor also.

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....."
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 remainder 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 Contractor 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) 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		
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										
BANK NAME										
BANK BRANCH										
IFSC CODE										

CONTRACTOR

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ACCEPTING OFFICER

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											

50. B.H.E.L SAFETY CODE

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 atleast 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 upto and including 3 metres in length. For longer ladders this width shall be increased by atleast 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 atleast one ladder for each 30 m length or fraction thereof. Ladder shall be extended from bottom of trench to atleast 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 Slings 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. No	Name and surname of the workers	Age & Sex Name	Father's / Husband's loyment Desig- nation.	Nature of emp- (Village, Distt. Thana).	Permanent / Home address of Employee	Present address of emp- loyment	Date of commen- cement leaving of emp- loyment	Date of termina- tion or of the employee.	Signature or thumb impression	Remarks
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). work done	Particulars of location of worksite and description of employed from..... to.....)	Total period for which the worker is worked	Actual number of days worked	Leave should be specified).	Nature of taken (No. of days 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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**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	Departme nt	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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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 work	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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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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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.

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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.

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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.

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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.

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BHEL-Trichy : Contractor Safety Guidelines

Work Permit Instructions

SI 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.

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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.

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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.

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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.

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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.

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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 .

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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 decease.	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

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- 3. Very harmful
- 4. Extremely harmful

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SECTION 6 TECHNICAL CONDITIONS OF CONTRACT

ROAD WORKS

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
2.	63mm to 45mm	90mm	100

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		63mm 53mm 45mm 22.4mm	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)	
1	Paving bitumen from Assam Petroleum A 90	177 deg. C to 190 deg. C

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	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)

1.1.7 Lime

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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

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

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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 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,

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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.

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.

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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 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.

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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 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.

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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.

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,

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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
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
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.					

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* Net quantity means: The quantity of metal measured in stacks and reduced by 7.5%

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 :

- (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.

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- 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 conform 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

1.5.1.2 First Coat:

- (a) **Preparation of Surface:**

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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 metre straight edge laid parallel to the centre line of the road, and undulations if any shall be corrected by addition or removal of blinding 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.

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(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.

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.

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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 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

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

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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

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:

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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:

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

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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).

When the roller has passed over the whole area once, any high spots or depressions which become apparent shall be corrected by removing or adding premixed materials. Rolling shall then be continued until the entire surface has been rolled to compaction and all the roller marks eliminated. In each pass of the roller, preceding track shall be overlapped uniformly by at least 1/3 width, The roller

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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 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. 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

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

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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

Sieve Designation (IS: 460)	Percentage of wt. Passing the sieve	
	For 75 mm compacted thickness	For 50 mm compacted thickness

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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 dec. 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 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.

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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.

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

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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 1.

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/Binder/course/overlay for Strengthening	Single or Multiple	50 mm - 100 mm
Semi-Dense Bituminous Concrete (SDBC)	Wearing	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

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

Viscosity Grade	General Applications
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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-IO (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 65 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

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

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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
Stripping	Coating and Stripping of Bitumen Aggregate Mixtures	Min. Retained Coating 95%	IS:6241

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Water sensitivity	Retained Tensile strength***	Min 80%	ASHTO 283
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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 finally 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).

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.

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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
- d) 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 01 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 m 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
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.

BHEL APPROVED BRANDS FOR THE FOLLOWING MATERIALS / ITEMS

Sl. No.	Material	Manufacturing Co.	Brand
AS DETAILED IN BILL OF QUANTITIES			

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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- 2.8. Responsibilities of Contractor in respect of Local Laws, Employment of Workers etc
- 2.9. Progress Monitoring, Monthly Review and Performance Evaluation
- 2.10. Time of Completion
- 2.11. Extension of Time for Completion
- 2.12. Insurance
- 2.13. Strikes & Lockout
- 2.14. Force Majeure
- 2.15. Settlement of Disputes
- 2.16. Retention Amount
- 2.17. Payments
- 2.18. Performance Guarantee for Workmanship
- 2.19. Closing of Contracts
- 2.20. Suspension of Business Dealings
- 2.21. Limitation on Liability
- 2.22. Cartel Formation
- 2.23. Fraud Prevention Policy
- 2.24. Order of Precedence
- 2.25. Other Issues

CHAPTER -1

1. GENERAL INSTRUCTION TO BIDDER

1.1. DESPATCH INSTRUCTION

- i. The General Conditions of Contract form part of the Tender specifications. **For this tender, Bidder s shall use electronic Signature viz Digital Signature Certificate while uploading the tender documents on the GeM portal.** The information furnished shall be complete by itself. The Bidder is required to furnish all the details and other documents as required in the following pages.
- ii. Bidder are advised to study all the tender documents carefully. Any submission of tender by the Bidder shall be deemed to have been done after careful study and examination of the tender documents and with the full understanding of the implications thereof. Should the Bidder have any doubt about the meaning of any portion of the Tender Specification or find discrepancies or omissions in the drawings or the tender documents issued are incomplete or shall require clarification on any of the technical aspect, the scope of work etc., he shall at once, contact the authority inviting the tender well in time (so as not to affect last date of submission) for clarification before the submission of the tender. Tenderer's request for clarifications shall be with reference to Sections and Clause numbers given in the tender documents. The specifications and terms and conditions shall be deemed to have been accepted by the Bidder in his offer. Non-compliance with any of the requirements and instructions of the tender enquiry may result in the rejection of the tender.
- iii. Integrity pact (IP) shall be applicable for all tenders / contracts if indicated in NIT. This IP shall be issued as part of the Tender documents and shall be submitted by the Bidder along with Techno-commercial bid duly filled, signed and stamped by the authorized signatory who signs the bid. Entering into this pact shall be a preliminary qualification.

1.2. SUBMISSION OF TENDERS

- 1.2.1. The Bidder must submit their tenders to Officer inviting tender as per instructions in the NIT. Tenders shall be submitted through GeM portal as per instruction in NIT.
- 1.2.2. Bidder to upload offers well in advance in order to avoid last minute congestion in GeM website. However, after submission of the tender, the Bidder can re-submit revised tender but before due date and time of submission of tender as notified.
- 1.2.3. Tenders shall be opened by Officer of BHEL at the time and date as specified in the NIT (or as per Corrigendum issued subsequently). For this tender, Bidder s may attend through online mode, if provisions are available in GeM portal.
- 1.2.4. Bidder whose bids are found techno commercially qualified shall be notified through GeM system about the date and time of opening of the Price Bids. BHEL's decision in this regard shall be final and binding.
- 1.2.5. The information given in the tender documents is for general guidance and shall not be construed as contractually binding on BHEL/ Owner. All relevant site data/ information as may be necessary for bidding shall have to be obtained/ collected by the Tenderer.
- 1.2.6. The Bidder are advised to physically visit the site to acquaint and satisfy themselves about the weather conditions, working culture in the area, socio- political environment, safety & security aspects, law & order situation, law of the land, transportation routes, various distances, surroundings of plant/ project premises together with all statutory, obligatory, mandatory requirements of various authorities and obtain for themselves all necessary information as to the risks, contingencies and all other circumstances, which may influence or affect the discharge of various obligations under the Contract during contract period including extended period (if any).

- 1.2.7. The submission of bid will tantamount to due diligence having been done and it shall be deemed that:
- a) the Bidder has obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works
 - b) the Bidder accepts total responsibility for having foreseen all difficulties and costs of successfully completing the Works
 - c) the Bidder accepts that, the Contract Price shall not be adjusted to take account of any unforeseeable or unforeseen difficulties or costs and the Bidder shall not raise any claims/ disputes against BHEL and/ or Owner at later date in any manner whatsoever.

1.3. LANGUAGE

1.3.1 The Bidder shall quote the rates in English language and international numerals. These rates shall be entered in figures as well as in words. Bidder are requested to refer the clauses of NIT/ Vol-II "Price Bid" for more details. For the purpose of the tenders, the metric system of units shall be used.

1.3.2 All entries in the tender shall either be typed or written legibly in ink. Erasing and over-writing is not permitted and may render such tenders liable for rejection. All cancellations and insertions shall be duly attested by the tenderer.

1.13.3 The language for Communication shall be "ENGLISH" with respect to all correspondence between the Bidder and BHEL

1.13.4 All orders, letters, eMails, notices served under this contract shall be in "ENGLISH" only

1.4 PRICE DISCREPANCY:

1.4.1 Price Bid opening: During opening of price bids, if there is any difference between the amount in figures and in words, the amount quoted by the Bidder in words shall be taken as correct.

1.4.2 Reverse Auction: In case of Reverse Auction, the successful Bidder shall undertake to execute the work as per overall price offered by him during the Reverse Auction process. (Guidelines as available on www.bhel.com on "supplier registration page".)

1.5 QUALIFICATION OF BIDDER

- i. Only Bidder who have previous experience in the work of the nature and description detailed in the Notice Inviting Tender and/or tender specification are expected to quote for this work duly detailing their experience along with offer.
- ii. Offers from Bidder who do not have proven and established experience in the field shall not be considered.
- iii. The offers of the Bidder s who are on the debarred list shall be rejected. Further, offer of the Bidder s, who engage the services of the debarred firms or associated with the debarred firm, for present bid, shall also be rejected. The list of debarred firms is available on BHEL web site www.bhel.com.
- iv. Offers from Bidder who do not comply with the latest guidelines of Ministry/Commissions of Govt. of India shall not be considered.

1.6 EVALUATION OF BIDS

- i. Technical Bids submitted by the Bidder will be opened first and evaluated for fulfilling the Pre-Qualification criteria and other conditions in NIT/Tender documents, based on documentary evidences submitted along with the offer.
- ii. In case the same qualifying experience is claimed by more than one agency, then:
 - a. The agency who has executed the work as per documentary evidence submitted shall only be qualified. Scope of qualifying work should be totally with the agency who has executed and in case it is only labour and consumables without T&P, then the credentials of execution is assigned to the first agency and not to the agency who has executed only as labour supply contractor. Further, BHEL reserves the right to ask for any other proof for the said job.
 - b. However, if the same is on account of subletting, part of scope by one agency to another agency in a project of BHEL, experience of both the agencies may be considered for the sublet portion of the work provided subletting has been done with the approval of BHEL.
- iii. In case the qualifying experience is claimed by Bidder is based on 'Work Order' and 'Experience Certificates' from any organization other than BHEL (main agency), then it shall be the responsibility of the Bidder to submit (in addition to the experience certificate from main agency) relevant certificate regarding qualifying experience from the end Customer or the Turnkey-Contractor (if any) who has awarded the work to main agency, as a proof for having executed subject qualifying work. BHEL reserves the right to ask for any other proof for the said job.
- iv. Assessing Bidder 's Capacity for executing the current tender shall be as per Notice Inviting Tender.
- v. Price Bids of shortlisted Bidder s shall only be opened through the electronic price bid opening with/without Reverse Auction, at the discretion of BHEL. Unless specified otherwise in the tender, the L1 Bidder amongst all the shortlisted Bidder s shall be considered for award. However, the L1 Bidder shall have no claim on the award & BHEL reserves the right to award the tender at its sole discretion.
- vi. Price Bids of unqualified Bidder s shall not be opened. Reasons for rejection shall be intimated in due course either through system generated e-mail or through letter/e-mail after award to successful Bidder .
- vii. Bidder s are advised to also refer to clause no 2.9.4 regarding evaluation of their performance in ongoing projects.

1.7 DATA TO BE ENCLOSED

Full information shall be given by the Bidder in respect of the following. Non- submission of this information may lead to rejection of the offer.

i) INCOME TAX PERMANENT ACCOUNT NUMBER

Certified copies of Permanent Account Numbers as allotted by Income Tax Department for the Company/Firm/Individual Partners etc. shall be furnished along with tender.

- ii) An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor.

iii) The organization chart of the tenderer's organization, including the names, addresses and contact information of the Directors/Partners shall be furnished along with the offer.

iv) IN CASE OF INDIVIDUAL TENDERER:

His / her full name, address, PAN and place & nature of business.

v) IN CASE OF PARTNERSHIP FIRM:

The names of all the partners and their addresses, copy of self attested PAN of all the individual partners, copy of the partnership deed/ instrument of partnership duly certified by the Notary Public shall be enclosed.

vi) IN CASE OF COMPANIES:

- a) Date and place of registration including date of commencement certificate in case of Public Companies (certified copies of Memorandum and articles of Association are also to be furnished).
- b) Nature of business carried on by the Company and the provisions of the Memorandum relating thereof.

1.8 AUTHORIZATION AND ATTESTATION

Tenders shall be signed by a person duly authorized/empowered to do so, for which a Power of Attorney is to be submitted along with the tender offer. For company, a Power of Attorney (as per format in Annexure-15) shall be submitted.

1.9 EARNEST MONEY DEPOSIT

1.9.1 Every tender must be accompanied by the prescribed amount of Earnest Money Deposit (EMD) in the manner described herein.

- i. EMD shall be furnished before tender opening / along with the offer in full as per the amount indicated in the NIT.
- ii. The EMD up to an amount of Rs. 2 Lakh is to be paid only in the following forms:
 - a. Cash deposit as permissible under the extant Income Tax Act (before tender opening).
 - b. Electronic Fund Transfer credited in BHEL account (before tender opening).
 - c. Banker's cheque / Pay order / Demand draft, in favour of 'Bharat Heavy Electricals Limited' and payable at Regional HQ issuing the tender (along with offer).
 - e. Insurance Surety Bonds
 - f. In case EMD amount is more than Rs. Two Lakhs, Bidder has the option to submit the amount in excess of Rs. Two lakhs in the forms described above in clause no. 1.7.1. ii) (a) to (e) or in the form of Bank Guarantee from Scheduled Bank (along with the Offer). The Bank Guarantee in such cases shall be valid for at least six months from the due date of tender submission. The Bank Guarantee format for EMD shall be in the prescribed formats.
- iii. No other form of EMD remittance shall be acceptable to BHEL.
- iv. Proof of EMD: Bidder shall upload the scanned copy of EMD along with bid submission through GeM Portal. However, for the purpose of realization, the Bidder shall send the demand draft/ banker's cheque/ pay order/ Bank Guarantee/ Insurance Surety Bonds, in original, to the designated officer through post/courier or by hand within reasonable time.

1.9.2 EMD by the Bidder will be forfeited as per NIT conditions, if:

- i. After opening the tender and within the offer validity period, the Bidder revokes his tender or makes any modification in his tender which is not acceptable to BHEL. OR

- ii. The successful Contractor, on whom the work has been awarded, fails to deposit the required Security deposit or commence the work within the period as per LOI/ LOA/ Contract or refuse to accept the LIO/LOA/Contract.

EMD by the Bidder shall be withheld in case any action on the Bidder is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors" of BHEL and forfeited/ released based on the action as determined under these guidelines.

1.9.3 EMD shall not carry any interest.

1.9.4 EMD given by all unsuccessful Bidder shall be refunded normally within fifteen days of award of work.

1.9.5 Cash portion of EMD of successful Bidder will be retained as part of Security Deposit. EMD submitted in the form of Bank Guarantee shall be retained by BHEL until the receipt of the Security Deposit.

1.10 SECURITY DEPOSIT

1.10.1 Upon acceptance of Tender, the successful Bidder shall be required to deposit the 5% of the contract value as Security Deposit towards fulfilment of any obligations in terms of the provisions of the contract.

1.10.2 The Security Deposit shall be furnished before start of the work by the contractor.

1.10.3 The required Security Deposit may be accepted in the following forms.

- i) Cash (as permissible under the extant Income Tax Act).
- ii) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
- iii) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).
- iv) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format for Security Deposit shall be in the prescribed formats.
- v) Insurance Surety Bonds.

Note:

- i) BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.
- ii) In case of delay in submission of Security Deposit, enhanced security deposit which would include interest (Repo rate + 4%) for the delayed period, shall be submitted by the Bidder before submission of first bill

1.10.4 The Security Deposit shall not carry any interest.

1.10.5 In case the value of work exceeds the awarded / accepted value, the Security Deposit shall be correspondingly enhanced as given below:

- i) The enhanced part of the Security Deposit shall be immediately deposited by the Contractor or adjusted against payments due to the Contractor.
- ii) Contract value for the purpose of operating the increased value of Security Deposit due to Quantity Variation, shall be exclusive of Price Variation Clause, Over Run Compensation and Extra works done on man-day rates.
- iii) The recoveries made from running bills can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, with the approval of competent authority of BHEL.

1.10.6 The validity of Bank Guarantees towards Security Deposit shall be valid till actual completion of work + Maintenance Period + 3 months.

1.10.7 BHEL reserves the right of forfeiture of Security Deposit in addition to other claims, damages and remedies in the event of the Contractor's failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit against any claims of other contracts with BHEL by giving prior notice to the contractor.

1.11 RETURN OF SECURITY DEPOSIT

Security Deposit shall be released to the contractor upon fulfilment of contractual obligations as per terms of the contract including completion of Maintenance Period after deducting all expenses / other amounts due to BHEL under the contract.

The Security Deposit will be refunded to the contractor in respect of all contracts on completion of work and after payment of final bill and on expiry of the maintenance period, 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

1.12 BANK GUARANTEES

Where ever Bank Guarantees are to be furnished/submitted by the contractor, the following shall be complied with

- i. Bank Guarantees shall be from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. Bank Guarantees issued by Co-Operative Banks/ Financial Institutions shall not be accepted.
- ii. The Bank Guarantees shall be as per prescribed formats.
- iii. It is the responsibility of the Bidder to get the Bank Guarantees revalidated/extended for the required period as per the advice of BHEL. BHEL shall not be liable for issue of any reminders regarding expiry of the Bank Guarantees.
- iv. In case extension/further extensions of any Bank Guarantees are not required, the Bidder s shall ensure that the same is explicitly endorsed by the Construction Manager and submitted to the BHEL unit issuing the LOI/LOA.
- v. In case the Bank Guarantees are not extended before the expiry date, BHEL reserves the right to invoke the same by informing the concerned Bank in writing, without any advance notice/communication to the concerned Bidder .
- vi. Bidder s to note that any corrections to Bank Guarantees shall be done by the issuing Bank, only through an amendment in an appropriate non judicial stamp paper.
- vii. The Original Bank Guarantee shall be submitted to BHEL Trichy/ WCM dept of BHEL unless specified otherwise in TCC.

1.13 VALIDITY OF OFFER

The rates in the Tender shall be kept open for acceptance for a minimum period of **SIX MONTHS** from latest due date of offer submission (including extension, if any). In case BHEL (Bharat Heavy Electricals Ltd) calls for negotiations, such negotiations shall not amount to cancellation or withdrawal of the original offer which shall be binding on the Bidder .

1.14 EXECUTION OF CONTRACT AGREEMENT

The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Award by Bharat Heavy Electricals Limited. The successful Bidder shall be required to execute an agreement in the prescribed form, with BHEL, within a reasonable time after the acceptance of the Letter of Award, and in any case before releasing the first running bill. The contract agreement shall be signed by a person duly authorized through /empowered by the tenderer. The expenses for preparation of agreement

document shall be borne by BHEL. The contractor shall furnish a "Non Judicial Stamp Paper" of appropriate value (as of now Rs 100/-) for execution of the agreement

1.15 REJECTION OF TENDER AND OTHER CONDITIONS

1.15.1 The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender nor any tender and reserves to itself full rights for the following without assigning any reasons whatsoever:

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- a) To reject any or all of the tenders.
- b) To split up the work amongst two or more Bidder as per NIT.
- c) To award the work in part if specified in NIT.
- d) In case of either of the contingencies stated in (b) and (c) above, the time for completion as stipulated in the tender shall be applicable.

1.15.2 Conditional tenders, unsolicited tenders, tenders which are incomplete or not in the form specified or defective or have been materially altered or not in accordance with the tender conditions, specifications etc. are liable to be rejected.

1.15.3 Tenders are liable to be rejected in case of unsatisfactory performance of the Bidder with BHEL or Bidder under suspension (debarred) by any unit / region / division of BHEL or Bidder who do not comply with the latest guidelines of Ministry/Commissions of Govt of India.

1.15.4 If a Bidder who is a proprietor expires after the submission of his tender or after the acceptance of his tender, BHEL may at their discretion, cancel such tender. If a partner of a firm expires after the submission of tender or after the acceptance of the tender, BHEL may then cancel such tender at their discretion, unless the firm retains its character. In case BHEL resolves to cancel the tender under this clause, BHEL will issue a notice in this regard containing reasons as to the cancellation of tender. The contractor shall be required to furnish his response to such notice within a period of 14 days from the date of receipt of such notice through any means (BHEL reserves the right to decrease the period upto 05 days). BHEL after due consideration of the representation made by contractor shall communicate its final decision within a reasonable period.

In case contractor fails to submit any response to the notice issued by BHEL within the period stipulated in the notice, BHEL at its discretion may proceed to cancel the contract.

Contractor shall not be eligible for any compensation whatsoever for the cancellation of contract under this clause

1.15.5 BHEL will not be bound by any Power of Attorney granted by changes in the composition of the firm made subsequent to the execution of the contract. BHEL may, however, recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.

1.15.6 If the Bidder deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract if awarded and forfeit the Earnest Money/Security Deposit/any other money due.

1.15.7 Canvassing in any form in connection with the tenders submitted by the Bidder shall make his offer liable to rejection.

1.15.8 In case the Proprietor, Partner or Director of the Company/Firm submitting the Tender, has any relative or relation employed in BHEL, the authority inviting the Tender shall be informed of the fact as per specified format, along with the Offer. Failing to do so, BHEL may, at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.

1.15.9 The successful Bidder (Contractor) shall not sub-contract any portion of work detailed in the tender specification undertaken by him without written permission of BHEL's Construction Manager/Site in charge. BHEL, at its discretion, may consider the written request from the Contractor and permit subletting of part scope. However, the Contractor is solely responsible to BHEL for the work awarded to him.

1.15.10 The Tender submitted by a techno commercially qualified Bidder shall become the property of BHEL who shall be under no obligation to return the same to the Bidder .

1.15.11 Unsolicited discount received after the due date and time of Bid Submission shall not be considered for evaluation. However, if the party who has submitted the unsolicited discount/rebate becomes the L-1 party, then the awarded price i.e. contract value shall be worked out after considering the discount so offered.

1.15.12 BHEL shall not be liable for any expenses incurred by the Bidder in the preparation of the tender irrespective of whether the tender is accepted or not.

1.16 INTIMATION OF CHANGE OF NAME/ RE-CONSTITUTION OF THE ORGANIZATION

In the event of the organization (Proprietorship/Partnership/Company) undergoing any change of name or reconstitution, prior intimation of the same shall be given to BHEL. Upon such changes coming into effect, the same is to be intimated to BHEL immediately with supporting documents as applicable.

CHAPTER-2

2.1 DEFINITION: The following terms shall have the meaning hereby assigned to them except where the context otherwise requires

- i) BHEL shall mean Bharat Heavy Electricals Limited, a company registered under Indian Companies Act 1956, having its Registered Office at BHEL HOUSE, SIRI FORT, NEW DELHI – 110 049, and its office at (inviting tenders) (None of the Unit or Power Sector Regional Offices or its Authorized Officers).
- ii) “EXECUTIVE DIRECTOR” or “GENERAL MANAGER (In- charge)” or “GENERAL MANAGER” shall mean the Officer in Administrative charge of the respective UNIT/Power Sector Region.
- iii) “COMPETENT AUTHORITY” shall mean BHEL Officers who are empowered to act on behalf of BHEL.
- iv) “ENGINEER” or “ENGINEER IN CHARGE” shall mean an Officer of BHEL as may be duly appointed and authorized by BHEL to act as “Engineer” on his behalf for the purpose of the Contract, to perform the duty set forth in this General Conditions of Contract and other Contract documents. The term also includes ‘CONSTRUCTION MANAGER’ or ‘SITE INCHARGE’ as well as Officers of the respective units. For the purpose of joint measurement, verification, certification and/ or approval of the work and/ or documents under the contract the word "Engineer" or "Engineer Incharge" shall be deemed to include the Engineers of the Customer and/ or his Consultant also.
- v) “SITE” shall mean the places or place at which the plants/equipments are to be erected and services are to be performed as per the specification of this Tender.
- vi) “CLIENT OF BHEL” or “CUSTOMER” shall mean the project authorities with whom BHEL has entered into a contract for supply of equipments or provision of services.
- vii) “CONTRACTOR” shall mean the successful Bidder /Bidder who is awarded the Contract and shall include the Contractor’s successors, heirs, executors, administrators and permitted assigns.
- viii) “CONTRACT” or “CONTRACT DOCUMENT” shall mean and includes the Agreement or Work Order, the accepted appendices of Rates, Schedules, Quantities if any, Offer submitted by contractor including acceptance to General Conditions of Contract, Special Conditions of Contract, Instructions to the Bidder , Drawings, Technical Specifications, the Special Specifications if any, the Tender documents, subsequent amendments /corrigendum to Tender mutually agreed upon and the Letter of Intent/Award/Acceptance issued by BHEL. Any conditions or terms stipulated by the contractor in the tender documents or subsequent letters shall not form part of the contract unless, specifically accepted in writing by BHEL in the Letter of Intent/Award and incorporated in the agreement or amendment thereof.
- ix) “GENERAL CONDITIONS OF CONTRACT” shall mean the ‘Instructions to Bidder ’ and ‘General Conditions of Contract’ pertaining to the work for which above tenders have been called for.
- x) “TENDER SPECIFICATION” or “TENDER” or “TENDER DOCUMENTS” shall mean General Conditions, Common Conditions, Special Conditions, Price Bid, Rate Schedule, Technical Specifications, Appendices, Annexures, Corrigendums, Amendments, Forms, Procedures, Site information etc. and drawings/documents pertaining to the work for which the Bidder are required to submit their offers. Individual specification number will be assigned to each Tender Specification.
- xi) “LETTER OF INTENT/ AWARD” shall mean the intimation by a Letter/Fax/email to the Bidder that the tender has been accepted in accordance with provisions contained in the letter. The responsibility of the contractor commences from the date of issue of this letter and all terms and conditions of the contract are applicable from this date.
- xii) “COMPLETION TIME” shall mean the period by ‘date/month’ specified in the ‘Letter of Intent/Award’ or date mutually agreed upon for handing over of the intended scope of work, the erected equipment/plant which are found acceptable by the Engineer, being of required standard and conforming to the specifications of the Contract.
- xiii) “PLANT” shall mean and connote the entire assembly of the plant and equipments covered by the contract.

- xiv) "EQUIPMENT" shall mean equipment, machineries, materials, structural, electricals and other components of the plant covered by the contract.
- xv) "TESTS" shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL in order to ascertain the quality, workmanship, performance and efficiency of the contractor or part thereof.
- xvi) "APPROVED", "DIRECTED" or "INSTRUCTED" shall mean approved, directed or instructed by BHEL.
- xvii) "WORK or CONTRACT WORK" shall mean and include supply of all categories of labour, specified consumables, tools and tackles and Plants required for complete and satisfactory site transportation, handling, stacking, storing, erecting, testing and commissioning of the equipments to the entire satisfaction of BHEL.
- xviii) "SINGULAR AND PLURALS ETC" words carrying singular number shall also include plural and vice versa, where the context so requires. Words imparting the masculine Gender shall be taken to include the feminine Gender and words imparting persons shall include any Company or Associations or Body of Individuals, whether incorporated or not.
- xix) "HEADING" – The heading in these General Conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken as instructions thereof or of the contract.
- xx) "MONTH" shall mean calendar month unless otherwise specified in the Tender.
- xxi) 'Day' or 'Days' unless herein otherwise expressly defined shall mean calendar day or days of twenty-four (24) hours each. A Week shall mean continuous period of seven (7) days.
- xxii) "COMMISSIONING" shall mean the synchronization testing and achieving functional operation of the Equipment with associated system after all initial adjustments, trials, cleaning, re-assembly required at site if any, have been completed and Equipment with associated system is ready for taking into service.
- xxiii) "WRITING" shall include any manuscript type written or hand written or printed statement or electronically transmitted messages, under the signature or seal or transmittal of BHEL.
- xxiv) "TEMPORARY WORK" shall mean all temporary works for every kind required in or for the execution, completion, maintenance of the work.
- xxv) 'CONTRACT PRICE' or 'CONTRACT VALUE' shall mean the sum mentioned in the LOI/LOA/Contract Agreement subject to such additions thereto or deductions there from as may be made under provisions hereinafter contained.
- xxvi) 'EXECUTED CONTRACT VALUE' shall mean actual value of works executed by the contractor and certified by BHEL. This value shall not include PVC, ORC, Extra Works and Taxes.
- xxvii) "COMMENCEMENT DATE" or "START DATE" shall mean the commencement/start of work at Site as per terms defined in the Tender.
- xxviii) "SHORT CLOSING" or "FORE CLOSING" of Contract shall mean the premature closing of Contract, for reasons not attributable to the contractor and mutually agreed between BHEL and the contractor.
- xxix) "TERMINATION" of Contract shall mean the pre mature closing of contract due to reasons as mentioned in the contract.
- xxx) "DE MOBILIZATION" shall mean the temporary winding up of Site establishment by Contractor leading to suspension of works temporarily for reasons not attributable to the contractor.
- xxxi) "RE MOBILIZATION" shall mean the resumption of work with all resources required for the work after demobilization.
- xxxii) "OVERRUN CHARGES (ORC)" shall mean and include all the costs incurred by the Contractor during the extended period of the contract, including but not limited to any cost arising out of idle labour, administrative cost, T & P and machinery.

2.2 LAW GOVERNING THE CONTRACT AND COURT JURISDICTION

The contract shall be governed by the Laws of India. Subject to clause 2.15 of this contract, the Civil Court having original Civil Jurisdiction at Tiruchirappalli, shall alone have exclusive jurisdiction in regard to all matters in respect of the Contract.

2.3 ISSUE OF NOTICE

2.3.1 Service of notice to the Contractor

Any notice to be given to the Contractor under the terms of the contract shall be served by sending the same by Email/ Registered Post/Speed Post to or leaving the same at the Contractor's last known address of the principal place of business (or in the event of the contractor being a company, to or at its Registered Office). In case of change of address, the notice shall be served at changed address as notified in writing by the Contractor to BHEL. Such dispatch or display posting or leaving of the notice as the case may be shall be deemed to be good service of such notice and the time mentioned to the condition for doing any act after notice shall be reckoned from the date so mentioned in such notice.

2.3.2 Service of notice to BHEL

Any notice to be given to BHEL In-charge of the Region under the terms of the Contract shall be served by sending the same by Registered/AD or Speed post to BHEL address or changed address as notified in writing by BHEL to the Contractor.

2.4 USE OF LAND

No land belonging to BHEL shall be occupied by the contractor without written permission of BHEL.

2.5 COMMENCEMENT OF WORK

2.5.1 The contractor shall commence the work as per the time indicated in the Letter of Intent/Award from BHEL and shall proceed with the same with due expedition without delay.

2.5.2 If the contractor fails to start the work within stipulated time as per LOI/ LOA or as intimated by BHEL, then BHEL at its sole discretion shall have the right to cancel the contract. The Earnest Money and/or Security Deposit furnished by the contractor to under this tender will stand forfeited without any further reference to him and without prejudice to BHEL's other rights and remedies under this contract and the applicable laws in this regard.

2.5.3 All the work shall be carried out under the direction and to the satisfaction of BHEL.

2.6 MEASUREMENT OF WORK AND MODE OF PAYMENT:

2.6.1 All payments due to the contractors shall be made by e mode only, unless otherwise found operationally difficult for reasons to be recorded in writing and approved by contract executing department.

2.6.2 All items having a financial value shall be entered in the B.H.E.L Measurement Book so that a complete record is obtained of all works performed under the Contract. Buildings, etc., priced in Schedule 'A' 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. Measurement shall be restricted to that required to ascertain the financial liability of B.H.E.L under the contract. 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. The measurements shall be taken jointly by any person duly authorized on the part of the BHEL and by the Contractor.

- a) 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.
- b) 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.
- c) Measurement shall be restricted to that portion of work for which it is required to ascertain the financial liability of BHEL under this contract.
- d) 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.
- e) 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.
- f) These measurement sheets shall be prepared jointly with BHEL Engineers and signed by both the parties. The basis of arriving at the quantities, weights shall be relevant documents and drawings released by BHEL.
- g) 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.
- h) 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.
- i) 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.

- j) 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.
- k) 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.
- l) 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 challans

are 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
- m) 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.
- n) 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.
- o) 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.
- p) 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.
- q) 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.
- r) 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.

2.6.3 Except where any general or detailed description of the work in quantities expressly shows to the contrary, schedule of quantities shall be deemed to have been prepared and measurements shall be taken in accordance with the procedure set forth in the schedule of rates specification 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 the schedule of rates / specification, measurements shall be taken in accordance with relevant standard method of measurement issued by the Indian Standard Institution or as per standard engineering practice.

2.6.4 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.

2.6.5 The Contractor shall bear the expenditure involved if any, in making the measurements and testing of materials to be used/ used in the work. The contractor shall, without extra charges, provide all the assistance with appliances and other things necessary for measurement.

2.6.6 If at any time due to any reason whatsoever, it becomes necessary to re-measure the work done in full or in part, the expenses towards such re measurements shall be borne by the contractor unless such re measurements are warranted solely for reasons not attributable to contractor.

2.6.7 Passing of bills covered by such measurements does not amount to acceptance of the completion of the work measured. Any left out work has to be completed, if pointed out at a later date by BHEL.

2.6.8 Final measurement bill shall be prepared in the final bill format prescribed for the purpose based on the certificate issued by BHEL Engineer that entire works as stipulated in tender specification has been completed in all respects to the entire satisfaction of BHEL. The Contractor shall submit the final bill in line with WAM 7 format as per tender documents with an additional recording of the dispute, if any and shall sign with the following declaration:

I/ We hereby certify that I/We have performed the work as per the terms and conditions of Contract Agreement/Work Order No.....dated.....for which payment is claimed as above and that I/We have no further claim under this agreement/work order* except for the following (nature of claim with details & amount claimed, if any. NIL may be mentioned if there are no further claims).

-
- a).....
 - b).....
 - c)

It is agreed that the authorized signatory of Contractor shall necessarily record his claims/ dispute in Form WAM 7 only and any claim(s)/ dispute in any other form/ letter shall not be taken cognizance of by BHEL and admissible before any forum. BHEL shall make the payment of undisputed amount within the stipulated time without any unreasonable delay.

All the tools and tackles loaned to him should be returned in satisfactory condition to BHEL. The abstract of final quantities and financial values shall also be entered in the Measurement Books and signed by both parties to the contract. The Final Bill shall be prepared and paid within a reasonable time after completion of work.

2.7 RIGHTS OF BHEL

BHEL reserves the following rights in respect of this contract during the original contract period or its extensions if any, as per the provisions of the contract, without entitling the contractor for any compensation.

2.7.1 To withdraw any portion of work and/or to restrict/alter quantum of work as indicated in the contract during the progress of work and get it done through other agencies to fulfil BHEL's commitment to its customer or the date of completion is advanced due to other emergent reasons/ BHEL's obligation to its customer.

Where the contractor fails to deploy adequate manpower to meet the contractual target, BHEL reserves the right to deploy manpower to meet such shortfall, through any other agency for expediting activities in the interest of the project. Supplied manpower shall be put on job by the contractor. Fulfilling of all obligations towards payments and other statutory compliances related to such manpower shall be the contractor's responsibility. In case of contractor's failure to fulfill his obligations in respect of such manpower, BHEL shall be entitled to take action as provided herein.

2.7.2 BREACH OF CONTRACT, REMEDIES AND TERMINATION

2.7.2.1 The following shall amount to breach of contract:

- i. Non-supply of material/ non-completion of work by the Contractor within scheduled delivery/ completion period as per contract or as extended from time to time.
- ii. The Contractor fails to perform as per the activity schedule and there are sufficient reasons even before expiry of the delivery/ completion period to justify that supplies shall be inordinately delayed beyond contractual delivery/ completion period.
- iii. The Contractor delivers equipment/ material not of the contracted quality.
- iv. The Contractor fails to replace the defective equipment/ material/ component as per maintenance clause.
- v. Withdrawal from or abandonment of the work by the Contractor before completion as per contract.
- vi. Assignment, transfer, subletting of Contract by the Contractor without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.
- vii. Non-compliance to any contractual condition or any other default attributable to Contractor
- viii. Any other reason(s) attributable to Vendor towards failure of performance of contract. In case of breach of contract, BHEL shall have the right to terminate the Purchase Order/ Contract either in whole or in part thereof without any compensation to the Contractor.
- ix. Any of the declarations furnished by the contractor at the time of bidding and/ or entering into the contract for supply are found untruthful and such declarations were of a nature that could have resulted in non-award of contract to the contractor or could expose BHEL and/ or Owner to adverse consequences, financial or otherwise.
- x. Contractor is convicted of any offence involving corrupt business practices, antinational activities or any such offence that compromises the business ethics of BHEL, in violation of the Integrity Pact entered into with BHEL has the potential to harm the overall business of BHEL/ Owner.

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

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

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

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

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

- i. Let the time period from scheduled date of start of work till termination of contract excluding the period of Hold (if any) not attributable to contractor = T1
- ii. Let the value of executed work till the time of termination of contract = X
- iii. Let the Total Executable Value of work for which inputs/fronts were made available to contractor and were planned for execution till termination of contract = Y
- iv. Delay in executed work attributable to contractor i.e. $T2 = [1 - (X/Y)] \times T1$
- v. LD shall be calculated in line with LD clause (clause 2.7.9) of the Contract for the delay attributable to contractor taking "X" as Contract Value and "T2" as period of delay attributable to contractor.

2.7.2.3 Remedies in case of Breach of Contract.

- i. Wherein the period as stipulated in the notice issued under clause 2.7.2 has expired and Contractor has failed to remedy the breach, BHEL will have the right to terminate the contract on the ground of "Breach of Contract" without any further notice to contractor.
- ii. Upon termination of contract, BHEL shall be entitled to recover an amount equivalent to 10% of the Contract Value for the damages on account of breach of contract committed by the Contractor. This amount shall be recovered by way of encashing the security instruments like performance bank guarantee etc available with BHEL against the said contract. In case the value of the security instruments available is less than 10% of the contract value, the balance amount shall be recovered from other financial remedies (i.e. available bills of the contractor, retention amount, from the money due to the Contractor etc. with BHEL) or the other legal remedies shall be pursued.
- iii. wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case no security instruments are available or the value of the security instruments available is less than 10% of the contract value, the 10% of the contract value or the balance amount, as the case may be, will be recovered in all or any of the following manners:
- iv. In case the amount recovered under sub clause (a) above is not sufficient to fulfil the amount recoverable then; a demand notice to deposit the balance amount within 30 days shall be issued to Contractor.
- v. If Contractor fails to deposit the balance amount within the period as prescribed in demand notice, following action shall be taken for recovery of the balance amount:
 - a. from dues available in the form of Bills payable to defaulted Contractor against the same contract.
 - b. If it is not possible to recover the dues available from the same contract or dues are insufficient to meet the recoverable amount, balance amount shall be recovered from any money(s) payable to Contractor under any contract with other Units of BHEL including

recovery from security deposits or any other deposit available in the form of security instruments of any kind against Security deposit or EMD.

- c. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted Contractor.
- vi. It is an agreed term of contract that this amount shall be a genuine pre-estimate of damages that BHEL would incur in completion of balance contractual obligation of the contract through any other agency and BHEL will not be required to furnish any other evidence to the Contractor for the purpose of estimation of damages.
- vii. In addition to the above, imposition of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.

Note:

1) The defaulting contractor shall not be eligible for participation in any of the future enquiries floated by BHEL to complete the balance work. The defaulting contractor shall mean and include:

- (a) In case defaulted contractor is the Sole Proprietorship Firm, any Sole Proprietorship Firm owned by same Sole Proprietor.
- (b) In case defaulted contractor is The Partnership Firm, any firm comprising of same partners/ some of the same partners (but not including any new partner); or sole proprietorship firm owned by any partner(s) as a sole proprietor.

2.7.4 In case Contractor fails to deploy the resources as per requirement informed by BHEL in writing to expedite the work, BHEL can deploy own/hired/otherwise arranged resources and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads or as defined in TCC.

2.7.5 To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contract with their customer are terminated for any reason, whatsoever.

2.7.6 Whenever any Claim or Claims for payment of any sum of money(s) arises under this or any other contract against the contractor, BHEL shall be entitled to withhold and also have a lien to retain such sum of money(s) in whole or in part from any money(s) payable to contractor and/or security deposits furnished or deducted in cash from the bills of contractor, (if any) under this contract. In the event of the securities or the amounts payable to Contractor, being insufficient to cover BHEL claims, then BHEL shall be entitled to withhold and have a lien to the extent of such claims from any sum or sums found payable or which at any time thereafter may become payable to the contractor under this or any other contract with BHEL.

- a. Claim or Claims for payment of any sum of money(s) arising from the Contractor under this or any other contract against the contractor, shall mean, the sum of money(s) actually incurred by BHEL in fulfilling the contractual responsibilities of contractor under the contract, to which he has failed to fulfil plus applicable overheads (@ 5%) along with interest as applicable under the Contract on total amount (i.e. money actually incurred plus overheads)
- b. It is an agreed term of the contract that, the sum or sums of money so withheld or retained under the lien by BHEL will be kept withheld or retained as such by BHEL till the claims arising out of this or any other contract are finally adjudicated wither through Arbitration or a Court of competent jurisdiction as the case may be in accordance with the terms of contract. Intimation given by the BHEL Engineer regarding withholding of such money(s) shall be considered as sufficient and relevant date for all purposes. No Interest shall be payable on such sum(s) of money which becomes due or as the case may be adjudged to be due from BHEL to Contractor, whether under contract or otherwise.
- c. Where the contractor is a partnership firm, BHEL shall be entitled to withhold and also have a lien to retain towards such claims in whole or in part, from any other money(s) payable to any partner, whether in his individual capacity or otherwise.
- d. If any money(s) shall, as a result of any claim or application made under the relevant provisions of any Labour Welfare Act and/ or Rules, including but not limited to Contract Labour Regulation

& Abolition Act, Minimum Wages Act, Payment of Gratuity Act, Provident Fund Act, Employee State Insurance Act, be directed to be paid by the BHEL, such money shall be deemed to be moneys payable to the BHEL by the Contractor.

- e. Where the Contractor fails to repay to BHEL such moneys along with applicable overheads (@ 5%) and interest, as aforesaid within seven days of being demanded, BHEL shall be entitled to recover the same from Contractor's bills/ Security Deposit or any other money(s) payable to Contractor under this Contract or any other Contract with BHEL.

2.7.7 While every endeavor will be made by BHEL to this end, yet BHEL cannot guarantee uninterrupted work due to conditions beyond its control. The Contractor will not be normally entitled for any compensation/extra payment on this account unless otherwise specified elsewhere in the contract.

2.7.8 BHEL may permit or direct contractor to demobilize and remobilize at a future date as intimated by BHEL in case of following situations for reasons other than Force majeure conditions and not attributable to contractor:

- i) suspension of work(s) at a Project either by BHEL or Customer, or
- ii) where work comes to a complete halt or reaches a stage wherein worthwhile works cannot be executed and there is no possibility of commencement of work for a period of not less than three months.

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

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

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

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

Note: The Contractor shall not be eligible for any compensation on account of Quantity Variation arising out of short-closure of contract as per clause no. 2.79 (b) above.

2.7.9 LIQUIDATED DAMAGES –

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

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

Liquidated Damages shall be calculated in the manner stipulated hereinafter:

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

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

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

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

The total period under the final time extension shall be equal to the period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/ levied for the portion of time extensions solely attributable to contractor and recoverable from the dues payable to the contractor. For the periods, wherein the delay as per the comprehensive delay analysis carried out is solely attributable to contractor, BHEL shall have the right to impose Liquidated Damage at the rate of 0.5% of the contract value, per week of delay or part thereof subject to a maximum of 10% of the contract value.

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

2.8 RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS ETC.

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

2.8.1 As far as possible, Unskilled Workers shall be engaged from the local areas in which the work is being executed.

2.8.2 The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals and religious and other customs.

2.8.3 The contractor shall comply with all applicable State and Central Laws, Statutory Rules, Regulations, Notifications etc. such as Payment of Wages Act, Minimum Wages Act, Workmen Compensation Act, Employer's Liability Act, Industrial Disputes Act, Employers Provident Fund and Miscellaneous Provisions Act, 1952, Employees State Insurance Scheme, Contract Labour (Regulation and Abolition) Act, 1970, Payment of Bonus & Gratuity Act, Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996, The Building and Other Construction Workers' Welfare Cess Act 1996 and other Acts, Rules, and Regulations for labour/workers as applicable and as may be enacted by the State Government and Central Govt. during the tenure of the Contract and having force or jurisdiction at Site. The Contractor shall also comply with provisions of and give all such notices to the local Governing Body, Police and other relevant Authorities as may be required by the Law. The Contractor shall without any fail maintain all the registers/records in proper formats as per all the Acts, Rules and Regulations mentioned in this clause 2.8.3.

2.8.4 The Contractor shall obtain independent License under the Contract Labour (Regulations and Abolition) Act, 1970 for engaging contract labour as required from the concerned Authorities based on the certificate (Form- V or as applicable) issued by the Principal Employer/Customer.

2.8.5 The contractor shall pay and bear all taxes, fees, license charges, Cess, duties, deposits, tolls, royalties, commission or other charges which may be leviable on account of his operations in executing the contract.

2.8.6 While BHEL would pay the inspection fees and Registration fees of Boiler/Electrical Inspectorate, all other arrangements for site visits periodically by the Inspectorate to site, Inspection certificate etc. will have to be made by contractor. However, BHEL will not make any payment to the Inspectorate in connection with contractor's Welders/Electricians qualification tests etc.

2.8.7 Contractor shall be responsible for provision of Health and Sanitary arrangements (more particularly described in Contract Labour Regulation & Abolition Act), Safety precautions etc. as may be required for safe and satisfactory execution of contract.

2.8.8 The contractor shall be responsible for proper accommodation including adequate medical facilities for personnel employed by him.

2.8.9 The contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed by him.

2.8.10 The contractor shall ensure that no damage is caused to any person/property of other parties working at site/company" premises. If any such damage is caused, it is responsibility of the contractor to make good the losses or compensate for the same.

2.8.11 All the properties/equipments/components of BHEL/their Client/Customer loaned with or without deposit to the contractor in connection with the contract shall remain properties of BHEL/their Client/Customer.

2.8.12 The contractor shall use such properties for the purpose of execution of this contract. All such properties/equipments/components shall be deemed to be in good condition when received by the contractor unless he notifies within 48 hours to the contrary. The contractor shall return them in good condition as and when required by BHEL/their Client. In case of non-return, loss, damage, repairs etc. the cost thereof as may be fixed by BHEL Engineer will be recovered from the contractor.

2.8.13 In case the contractor is required to undertake any work outside the scope of this contract, the rates payable shall be those mutually agreed upon if the item rates are not mentioned in existing contract.

2.8.14 Any delay in completion of works/or non-achievement of periodical targets/or non-execution of contract due to the reasons attributable to the contractor, the same may have to be compensated by the contractor either by increasing manpower and resources or by working extra hours and/or by working more than one shift. All these are to be carried out by the contractor at no extra cost.

2.8.15 The contractor shall arrange, coordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises.

2.8.16 All safety rules and codes applied by the Customer /BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards, slings etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents, fire hazards. Due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of Clerical staff, watch and ward, store keepers to take care of equipment/materials and construction tools and tackles shall be posted at site by the contractor till the completion of work under this contract.

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

Contractor has to ensure the implementation of Health, Safety and Environment (HSE) requirements as per directions given by BHEL/Customer. The contractor has to assist in HSE audit by BHEL/Customer and submit compliance Report. The contractor has to generate and submit record/reports as per HSE plan/activities as per instruction of BHEL/Customer.

2.8.17 The contractor shall be directly responsible for payment of wages to his workmen/labours before the expiry of seven days from the last day of wage period and to ensure disbursement of wages in the presence of the representative from BHEL A pay roll sheet giving all the payments given to the workers and duly signed by the contractor's representative should be furnished to BHEL site for the purpose of maintaining the records for compliance,

2.8.18 In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.

2.8.19 Also, no idle charges will be admissible in the event of any stoppage caused in the work resulting in contractor's labour and Tools & Plants being rendered idle due to any reason at any time.

2.8.20 The contractor shall take all reasonable care to protect the materials and work till such time the plant/equipment has been taken over by BHEL or their Customer whichever is earlier.

2.8.21 The contractor shall not stop the work or abandon the site for whatsoever reason of dispute, excepting force majeure conditions. All such problems/disputes shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and dealt with accordingly.

2.8.22 The contractor shall keep the area of work clean and shall remove the debris etc. while executing day-to-day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The contractor will also demolish all the hutments, sheds, offices etc. constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor.

2.8.23 The contractor shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and/ or as per the instructions of the Engineer.

2.8.24 The Contractor to note that some of BHEL's T&Ps/MMDs may not be insured. The Contractor will take necessary precautions and due care to protect the same while in his custody from any damage/ loss till the same is handed over back to BHEL. In case the damage / loss is caused due to carelessness/ negligence on the part of the contractor, the Contractor is liable to get them repair/ replaced immediately and in case of his failure to do so within a reasonable time, BHEL shall lto recover the loss from the contractor.

2.8.25 For all works having contract value of Rs. 5,00,000/- or above, BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life/ permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below.

- a) Victim: Any person who suffers permanent disablement or dies in an accident as defined below.
- b) Accident: Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing/ operation and works incidental thereto at BHEL factories/ offices and precincts thereof, project execution, erection and

commissioning, services, repairs and maintenance, trouble shooting, serving, overhaul, renovation and retrofitting, trial operation, performance guarantee testing undertaken by the company or during any works/ during working at BHEL Units/ Offices/ townships and premises/ Project Sites.

c) Compensation in respect of each of the victims:

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

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

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

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

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

2.9 EXECUTION PLAN, PROGRESS MONITORING, MONTHLY REVIEW AND PERFORMANCE EVALUATION

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

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

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

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

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

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

Provided, this requirement is reflected in the rolling quarterly plan two months in advance. If the Contractor refuses to sign the F-14 format, those F-14 formats requiring Contractor's signature shall be deemed to have been signed and accepted by the Contractor, if communicated to the Contractor through email or any other mode as stated in clause

2.3.1.

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

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

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

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

2.10 TIME OF COMPLETION

2.10.1 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

2.10.2 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.

2.10.3 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

2.10.4 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.

2.10.5 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.

2.10.6 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.

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

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

2.11 EXTENSION OF TIME FOR COMPLETION

2.11.1 *The Scheduled Completion Date will not be extended due to inclement weather conditions which are normal to the general locality of the work site as evidenced by the 10-year average climatic data recorded by the local or national weather bureau or stations. Time for performance of this Agreement includes an allowance for calendar days which, according to historical data, may not be suitable for construction work. It is the Contractor's responsibility to protect the work site from inclement weather to avoid delays, rework, or inefficient Work.*

If the completion of work as detailed in the scope of work gets delayed beyond the contract period, the contractor shall request for an extension of the contract and BHEL at its discretion may extend the Contract.

If the completion of work gets delayed for reasons **not attributable to the contractor**, the contract period may be suitably extended at the sole discretion of BHEL only under the following circumstances.

- i) by reason of abnormally bad weather (abnormally bad weather means conditions that exceed the 10-year average minimum or maximum condition in temperature, rain, snow, hail, sleet, wind, etc., as established by the Weather Bureau for the area where the project is located
OR
- ii) by reason of serious loss or damage by fire, **OR**
- iii) by reason of Civil commotion, local combination of workmen strikes 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, then 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.

2.11.2 Based on the F-14 formats, the works balance at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to the contractor. Any further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly.

2.11.3 However, if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty/LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take under Clause 2.7.2 of GCC i.e. Breach of Contract, Remedies and Termination.

2.11.4 Planning, progress monitoring, monthly review and performance monitoring shall be carried out as per clause 2.9 of GCC.

2.12 INSURANCE

2.12.1 BHEL/their customer shall arrange for insuring the materials/properties of BHEL/customer covering the risks during transit, storage, erection and commissioning.

2.12.2 It is the sole responsibility of the contractor to insure his materials, equipment, workmen etc. against accidents and injury while at work and to pay compensation, if any, to workmen as per Workmen's compensation Act. The work will be carried out in a protected area and all the rules and regulations of the client /BHEL in the area of project which are in force from time to time will have to be followed by the contractor.

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

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

2.13 STRIKES & LOCKOUT

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

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

2.14 FORCE MAJEURE

2.14.1 "Force Majeure" shall mean circumstance which is:

- a. beyond control of either of the parties to contract,
- b. either of the parties could not reasonably have provided against the event before entering into the contract,
- c. having arisen, either of the parties could not reasonably have avoided or overcome, and d) is not substantially attributable to either of the parties

And

Prevents the performance of the contract,

Such circumstances include but shall not be limited to:

- i) War, hostilities, invasion, act of foreign enemies.
- ii) Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war.
- iii) Riot, commotion or disorder by persons other than the contractor's personnel and other employees of the contractor and sub-contractors.
- iv) Strike or lockout not solely involving the contractor's personnel and other employees of the contractor and sub-contractors.

- v) Encountering munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio- activity.
- vi) Natural catastrophes such as earthquake, tsunami, volcanic activity, hurricane or typhoon, flood, fire, cyclones etc.
- vii) Epidemic, pandemic etc.

2.14.2 The following events are explicitly excluded from Force Majeure and are solely the responsibilities of the non-performing party: a) any strike, work-to-rule action, go-slow or similar labour difficulty (b) late delivery of equipment or material (unless caused by Force Majeure event) and (c) economic hardship.

2.14.3 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 15 (fifteen) days after the occurrence of such event.

2.14.4 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended by a period of time equal to period of delay caused due to such Force Majeure event.

2.14.5 Delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall not

- a. Constitute a default or breach of the Contract.
- b. Give rise to any claim for damages or additional cost expense occasioned thereby, if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.

2.14.6 BHEL at its discretion may consider short closure of contract after 1 year of imposition of Force Majeure in line with extant guidelines. In any case, Contractor cannot consider deemed short-closure after 1 year of imposition of Force Majeure

2.15 Settlement of Dispute

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

If after the Designated Engineer has given written notice of this decision to the party and no intention to pursue the dispute has been communicated to him by the affected party within 30 days from the receipt of such notice, the said decision shall become final and binding on the parties. In the event the Contractor being dissatisfied with any such decision or if amicable settlement cannot be reached then all such disputed issues shall be resolved through conciliation in terms of the BHEL Conciliation Scheme 2018 as per Clause 2.15.1

2.15.1 Conciliation:

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

Note: Ministry of Finance has issued OM reference No. 1/2/24 dated 03.06.2024 regarding "Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement. In the said OM it has been

recommended that Government departments/ Entities/agencies are to encourage mediation under the Mediation Act. 2023 . The said Act has not yet been notified by the Government. Therefore, the clause "Settlement of Disputes" shall be modified accordingly as and when the Mediation Act 2023 gets notified.

2.15.2 ARBITRATION

2.15.2.1 Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 14.1 herein above or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, refer the disputes to Madras High Court, Arbitration Centre (MHCAC) and such dispute to be adjudicated by Sole Arbitrator appointed in accordance with the Rules of said Arbitral Institution.

2.15.2.2 A party willing to commence arbitration proceeding shall invoke Arbitration Clause by giving notice to the other party in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice') before referring the matter to arbitral institution. The Notice shall be addressed to the Head of the Unit, BHEL, executing the Contract and shall contain the particulars of all claims to be referred to arbitration with sufficient detail and shall also indicate the monetary amount of such claim including interest, if any.

2.15.2.3 After expiry of 30 days from the date of receipt of aforesaid notice, the party invoking the Arbitration shall submit that dispute to the Arbitral Institution- Madras High Court, Arbitration Centre (MHCAC)- and that dispute shall be adjudicated in accordance with their respective Arbitration Rules. The matter shall be adjudicated by a Sole Arbitrator who shall necessarily be a Retd Judge having considerable experience in commercial matters to be appointed/nominated by the respective institution. The cost/expenses pertaining to the said Arbitration shall also be governed in accordance with the Rules of the respective Arbitral Institution. The decision of the party invoking the Arbitration for reference of dispute to Madras High Court, Arbitration Centre (MHCAC)- for adjudication of that dispute shall be final and binding on both the parties and shall not be subject to any change thereafter. The institution once selected at the time of invocation of dispute shall remain unchanged.

2.15.2.4 The fee and expenses shall be borne by the parties as per the Arbitral Institutional rules.

2.15.2.5 The Arbitration proceedings shall be in English language and the seat of Arbitration shall be Trichy.

2.15.2.6 Subject to the above, the provisions of Arbitration & Conciliation Act 1996 and any amendment thereof shall be applicable. All matters relating to this Contract and arising out of invocation of Arbitration clause are subject to the exclusive jurisdiction of the Court(s) situated at Trichy.

2.15.2.7 Notwithstanding any reference to the Designated Engineer or Conciliation or Arbitration herein, a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree. Settlement of Dispute clause cannot be invoked by the Contractor, if the Contract has been mutually closed or 'No Demand Certificate' has been furnished by the Contractor or any Settlement Agreement has been signed between the Employer and the Contractor.

2.15.2.8 It is agreed that Mechanism of resolution of disputes through arbitration shall be available only in the cases where the value of the dispute is less than Rs. 10 Crores.

2.15.2.9 In case the disputed amount Claim, Counter claim including interest is Rs. 10 crores and above, the parties shall be within their rights to take recourse to remedies other than Arbitration, as may be available to them under the applicable laws after prior intimation to the other party. Subject to the aforesaid conditions, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof as amended from time to time, shall apply to the arbitration proceedings under this clause.

2.15.2.10 In case, multiple arbitrations are invoked (whether sub-judice or arbitral award passed) by any party to under this contract, then the cumulative value of claims (including interest claimed or awarded) in all such arbitrations shall be taken in account while arriving at the total claim in dispute for the subject contract for the purpose of clause 14.2.9. Disputes having cumulative value of less than 10 crores shall be resolved through arbitration and any additional dispute shall be adjudicated by the court of competent jurisdiction.

2.15.3 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution)

2.15.4 NO INTEREST PAYABLE TO CONTRACTOR

Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL. etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.

2.16 RETENTION AMOUNT

2.16.1 Retention Amount shall be 5% of contract value and shall be furnished before the first RA Bill becomes due for payment. In case of increase in contract value, additional 5% of differential amount shall be submitted by Contractor before payment of next RA Bill due.

The Retention amount of 5% of the contract value may be accepted in the following forms: -

1. Cash (as permissible under the extant Income Tax Act).
2. Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
3. 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).
4. Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act and in line with clause 1.12 of GCC. The Bank Guarantee format for Retention Amount shall be in the prescribed formats. The validity of BG shall be initially for the contract period & shall be extended up to acceptance of final bill if the final bill is not settled during the contract period.
5. Insurance Surety Bonds

Alternatively, on successful Bidder 's request, the Retention Amount can also be recovered at the rate of 10% of the gross amount, progressively, from each of the running bills of the contractor till the total amount of the required retention amount is collected. In case, contractor opts cash deduction from RA bills in the beginning & subsequently submit 5% of the Contract Value as Retention amount in any form as mentioned above, then refund of deducted retention amount may be permitted to contractor.

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.

2.16.2 Refund of Retention Amount shall be as follows:

100% of Retention Amount/ BG shall be released along with Final Bill after deduction all expenses/ other amounts due to BHEL under the contract/ other contracts entered into with them (contractor) by BHEL provided that.

2.16.3 In case of short closure of contract

- a) due to the premature termination of BHEL contract with customer for any reason whatsoever;
- b) upon the request of contractor for any reason, prior to completion and acceptance of Trial Run by the end customer

The retention money equivalent to the 5% of contract value executed by the contractor shall not be refundable and the contractor shall be discharged of his liabilities as provided in the clause 2.16.1

2.17 PAYMENTS

Payments to Contractors are made in any one of the following forms: -

2.17.1 Running Account Bills (RA Bills)

- 1.8 These are for interim payments when the contracts are in progress. The bills for such interim payments are to be prepared by Contractor in prescribed formats (RA Bill forms).
- 1.9 Payments shall be made according to the extent of work done as per measurements taken up to the end of the calendar month and in line with the terms of payments described in the Tender documents.
- 1.10 Recoveries on account of electricity, water, statutory deductions etc. are made as per terms of contract.
- 1.11 Full rates for the work done shall be allowed only if the quantum of work has been done as per the specifications stipulated in the contract. If the work is not executed as per the stipulated specifications, BHEL may ask the contractor to redo the work according to the required specifications, without any extra cost. However, where this is not considered necessary 'OR' where the part work is done due to factors like non-availability of material to be supplied by BHEL 'OR' non availability of fronts 'OR' non availability of drawings, fraction payment against full rate, as is considered reasonable, may be allowed with due regard for the work remaining to be done. BHEL decision in this regard will be final and binding on the contractor.
- 1.12 In order to facilitate part payment, BHEL at its discretion may further split the contracted rates/percentages to suit site conditions, cash flow requirements according to the progress of work, subject to following:
 - a) Provided no 'part' payment is recommended till 25% of work in the item rate is executed.
 - b) Payment of item rate to be made in not more than three instalments, last stage payment to be not lower than 20% of the item rate.

2.17.2 Final Bill

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

Clearance certificates **where ever applicable** viz. various Statutory Authorities like Labour department, PF Authorities, Commercial Tax Department etc.

BHEL shall settle the final bills after deducting all liabilities of Contractor to BHEL

2.18 PERFORMANCE GUARANTEE FOR WORKMANSHIP

2.18.1 Even though the work will be carried out under the supervision of BHEL Engineers the Contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of 12 months from the date of commencement of guarantee period as defined in Technical Conditions of Contract, for good workmanship and shall rectify free of cost all defects due to faulty erection detected during the guarantee period. In the event of the Contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works by itself, without prejudice to any other rights and recover the cost incurred for the same along with 5% overheads from the Security Deposit

2.19 CLOSING OF CONTRACTS

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

2.20 SUSPENSION OF BUSINESS DEALINGS

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

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

If any Bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution stage indulges in any act, including but not limited to, mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or tampers the tendering process or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, or does anything which is actionable under the Guidelines for Suspension of Business dealings, action may be taken against such Bidder / supplier / contractor as per extant guidelines of the company available on www.bhel.com and / or under applicable legal provisions. Guidelines for suspension of business dealings is available in the webpage: http://www.bhel.com/vender_registration/vender.php

2.21 LIMITATION ON LIABILITY:

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

2.22 Cartel Formation

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

2.23 Fraud Prevention Policy

Bidder along with its associate /collaborators /sub-contractors /sub-vendors / consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website

<http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

2.24 Order of Precedence

In the event of any ambiguity or conflict between the contract Documents, the order of precedence shall be in the order below:

- a. Contract agreement with its Amendments/Clarifications/Corrigenda/Errata etc. issued in respect of the tender documents by BHEL
- b. Notice Inviting Tender (NIT)
- c. Price Bid
- d. Technical Conditions of Contract (TCC)
- e. Special Conditions of Contract (SCC)
- f. General Conditions of Contract (GCC)
- g. Forms and Procedures

2.25 OTHER ISSUES

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

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

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

FORMAT F-14 (Rev 00) MONTHLY PLAN & REVIEW WITH CONTRACTOR														
Name of the Project								Contract No						
Name of the Work								Name of the Contractor						
Part - A - PLAN / REVIEW OF WORKFOR THE MONTH OF -----								Date of Plan / Review						
Sl No	Description of Work	UOM	Rate / Unit	Planned		Cumulative Shortfall Attributable to Contractor upto Last Month		Achieved		Shortfall Attributable to BHEL wrt to Plan		Cumulative Shortfall Attributable to Contractor upto & including this Month		Remarks (Reasons for Shortfall Attributable to Contractor Supporting Documents to be kept as record)
				Qty	Planned for the Month as per Part C of Last Month									
(a)	(b)	(c)	(d)	A		B		C		D		E = A+B-C-D		
				Phy	Financial	Phy	Financial	Phy	Financial	Phy	Financial	Phy	Financial	
	Value of Other Items not mentioned above but planned to be executed in this Month													
	Total				Σ A		Σ B		Σ C		Σ D		Σ E	

BHEL

(Signature with Seal & Date)

Contractor

(Signature with Seal & Date)

CONTRACTOR SEAL & SIGN

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PART- A: Contd.....

Note 1: In addition to the work planned as per Col. 'A', Contractor shall also make full efforts to minimize the 'Cumulative shortfall attributable to contractor upto the month' as mentioned in Col. 'B' by enhancing its resources, so as to achieve the completion of activities as per agreed schedule. In case contractor is not able to execute the entire shortfall, then BHEL 'Engineer in-charge', shall decide the priority of work to be executed and it shall be binding on the contractor.

Note 2: Percentage Shortfall attributable to contractor w.r.t. "Plan - Shortfall attributable to BHEL" for the month = $[(\Sigma E - \Sigma B) / (\Sigma A - \Sigma D)] \times 100$
In case, $(\Sigma E - \Sigma B)$ is negative, then it shall be treated as zero percent."

Note 3: Form 14 should include all items being planned in the current month, and all items against which shortfall was attributable to contractor till previous month. However, for practical reason, if it is not possible to mention some of the items in Form-14 being planned to be executed in this month, then also value of such items shall necessarily be included in calculation of Total Value.

Note 4: In case reason for shortfall attributable to contractor is w.r.t. T&P and Manpower, it should be in conformity with Part B1 and B2.

BHEL

(Signature with Seal & Date)

Contractor

(Signature with Seal & Date)

FORMAT F-14 (Rev 00) MONTHLY PLAN & REVIEW WITH CONTRACTOR

Name of the Project		Contract No	
Name of the Work		Name of the Contractor	
Part – B1 - PLAN / REVIEW OF DEPLOYMENT OF MAJOR T&P FOR THE MONTH OF -----		Date of Plan / Review	
CONTRACTOR'S SCOPE			

SN.	PLAN				DEPLOYMENT STATUS			
	Major T&P to be deployed as per work planned for the month	QTY	Deployment Period (in days)	Weightage assigned to planned T&P (in fraction such that $\Sigma C = 1$)	Actual Deployed Quantity	Actual Deployment Period (in days)	Weighted T&P Deployed	REMARKS (Works affected due to non-deployment of T&Ps)
		A	B	C	D	E	$F = (C \times D \times E) / (A \times B)$	

Note: In case, $E > B$, it shall be considered as $E = B$. Similarly, in case $D > A$, it shall be considered as $D = A$.
 Percentage of T&P Deployed = $\Sigma F \times 100$

BHEL SCOPE: -

SN.	PLAN			DEPLOYMENT STATUS		
	Major T&P to be deployed as per work planned for the month	QTY	Deployment Period (in days)	Actual Deployed Quantity	Actual Deployment Period (in days)	REMARKS (Works affected due to non-deployment of T&Ps)

BHEL

Contractor

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(Signature with Seal & Date)

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FORMAT F-14 (Rev 00) MONTHLY PLAN & REVIEW WITH CONTRACTOR			
Name of the Project		Contract No	
Name of the Work		Name of the Contractor	
Part – B2 - PLAN / REVIEW OF DEPLOYMENT OF MANPOWER FOR THE MONTH OF		Date of Plan / Review	

CONTRACTOR'S SCOPE: -

SN.	Area of Work	Category of Labour	No. of Labour required as per category	Deployment Period (in days)	No. of Labour actually deployed	Actual Deployment Period (in days)	REMARKS (Works affected due to non-availability of labour)
			A	B	C	D	

Percentage of Manpower Deployed= $100 \times \Sigma(C \times D) / \Sigma(A \times B)$

BHEL

(Signature with Seal & Date)

Contractor

(Signature with Seal & Date)

CONTRACTOR SEAL & SIGN

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FORMAT F-14 (Rev 00) MONTHLY PLAN & REVIEW WITH CONTRACTOR

Name of the Project					Contract No						
Name of the Work					Name of the Contractor						
Part – C PLAN (PHYSICAL) FOR THE NEXT MONTH OF -----						Date of Plan / Review					
SN.	Description of work	Original Planned Quantity	Planned Quantity (excluding shortfalls attributable to contractor till date)	Unit of Measurement	T&Ps Required				Manpower Required		REMARKS (Reasons for difference in Original Planned Quantity w.r.t. Planned quantity to be given)
					Contractor Scope		BHEL Scope		Category of Labour	No. of Labour required as per Category	
					Major T&P to be deployed as per work planned for the month	Quantity	Major T&P to be deployed as per work planned for the month	Quantity			

Note 1: Planned quantity should be based on available/ expected fronts/ inputs in the next month

Note 2: "Original Planned Quantity" shall be as per latest jointly agreed programme between BHEL and Contractor before commencement of work or at the time of latest Time Extension as the case may be.

BHEL

(Signature with Seal & Date)

Contractor

(Signature with Seal & Date)

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FORMAT F-14 (Rev 00) MONTHLY PLAN & REVIEW WITH CONTRACTOR

Name of the Project		Contract No	
Name of the Work		Name of the Contractor	
Part – C PLAN (PHYSICAL) FOR THE NEXT MONTH OF -----		Date of Plan / Review	

PART –D: REASONS FOR SHORTFALL ATTRIBUTABLE TO BHEL IN RESPECT OF PLAN FOR THE MONTH.....

SN.	Description of Work (from Part-A)	Quantities Affected		Reasons for Shortfall attributable to BHEL.	Agency responsible for reasons for Shortfall	Remarks (Supporting Documents in respect of agency responsible)
		(Physical Quantity)	Unit of Measu- rement			
1	2	3	4	5	6	7

Note1: Reasons for shortfall shall include non-availability of fronts/ drawings/ materials/ T&P (BHEL Scope)/ clearances etc. and other hindrances for which contractor is not responsible.

Note2: Agency responsible may be BHEL Site/ MUs/ Design Centre/ BHEL Customer/ other Contractors etc.

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Contractor

(Signature with Seal & Date)

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PART - II _ PRICE BID (PB)

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.....		

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 for Township
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 / Relaying / Repair & Maintenance of Roads (Around 3.0 KM) in and around the Township Complex, BHEL Trichy

S NO	QTY	ITEM	UOM	Rate In Rs Ps	Amount In Rs Ps
1	565	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	6230.62	35,20,300.30
2	25	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	1117.01	27,925.25

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S NO	QTY	ITEM	UOM	Rate In Rs Ps	Amount In Rs Ps
3	700	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	8432.73	59,02,911.00
4	28800	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	14.37	4,13,856.00
5	100	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	13.02	1,302.00
6	150	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	326.47	48,970.50

S NO	QTY	ITEM	UOM	Rate In Rs Ps	Amount In Rs Ps
7	250	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	326.47	81,617.50
			TOTAL		99,96,882.55

Note:

1. Mentioned rate excludes GST & BOCW Cess %.