

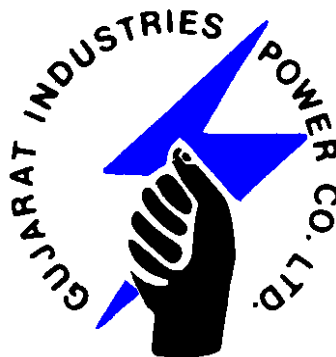
**GUJARAT INDUSTRIES POWER COMPANY LIMITED**  
**(Surat Lignite Power Plant)**

**AT & POST NANI NAROLI, TALUKA: MANGROL, DIST: SURAT, PIN 394110 (GUJARAT)**  
**Phone Nos.: EPABX (02629) 261063 to 261072, fax Nos.: (02629) 261112, 261080**

TENDER DOCUMENTS FOR;

***“Repairing of lignite transport bituminous road  
from shah bridge to apron feeder.”***

***Tender ID No.: 235303***



**VOLUME I**  
**INSTRUCTIONS TO BIDDERS & CONDITIONS OF**  
**CONTRACT**

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**NOTE:** All the Bidders should study entire Tender documents carefully & may carry out site visit before quoting & submitting their online Bid to understand scope of work and its importance.

### NOTICE INVITING TENDER

Name of work	Repairing of lignite transport bituminous road.
Place of work	Surat Lignite Power Plant, Village: Nani Naroli, Taluka: Mangrol, Dist.: Surat - 394110 (Gujarat).
Quantity	The successful Bidder will be awarded this contract involving total quantities of various items as mentioned against item descriptions in BOQs.
Contract period	02 months
EMD	Rs.46,000/- by Demand Draft payable at Mosali-Surat/Nani Naroli/Surat or Bank Guarantee in favor of GIPCL from approved Banks mentioned in this tender in subsequent clauses.
Cost of tender document / tender fee	Rs 2,000/- by Demand Draft in favor of GIPCL payable at Motamiya-Mangrol or Nani Naroli.
Pre Bid meeting	On 16.12. 2016, 16:00 hrs. at office of GIPCL-Surat Lignite Power Plant, Village: Nani Naroli, Ta. Mangrol, Dist. Surat.
Availability of online e-Tender document	On website: <a href="https://gipcl.nprocure.com">https://gipcl.nprocure.com</a> or <a href="https://www.nprocure.com">https://www.nprocure.com</a>
Last date of online submission of offer	30.12.2016 up to 17:00 hrs. on website: <a href="https://gipcl.nprocure.com">https://gipcl.nprocure.com</a> or <a href="https://www.nprocure.com">https://www.nprocure.com</a>
Submission of EMD, Tender fee and other supporting documents for technical Bid in physical form.	On or before 03.01.2017 during office hours at office of Surat Lignite Power Plant, Nani Naroli, Dist. Surat.

#### **NOTES:**

1. Amendment / corrigendum of the tender document, forms, schedules, etc... may be done any time by the GIPCL during the period of publication of tender in the website. The Bidders are required to visit the website regularly till the last date & time of Bid submission.
2. GIPCL reserves the right to reject any or all the tenders without assigning any reason thereof.
3. The Bidders are required to quote the rate strictly as per the terms and conditions mentioned in the tender document, adhering to technical specifications as well.
4. The Bidders are required to submit their Bids online only through the website <https://gipcl.nprocure.com> or <https://www.nprocure.com>
5. The EMD, Tender fee & other supporting documents are to be submitted in physical form only at the following address:-

#### **General Manager (Mines)**

Gujarat Industries Power Company Limited

Surat Lignite Power Plant

At Village: Nani Naroli,

Taluka: Mangrol,

Dist.:Surat-394 110, Gujarat.

Phone: (02629) 261063-72. E-Mail: slppcivil@gipcl.com

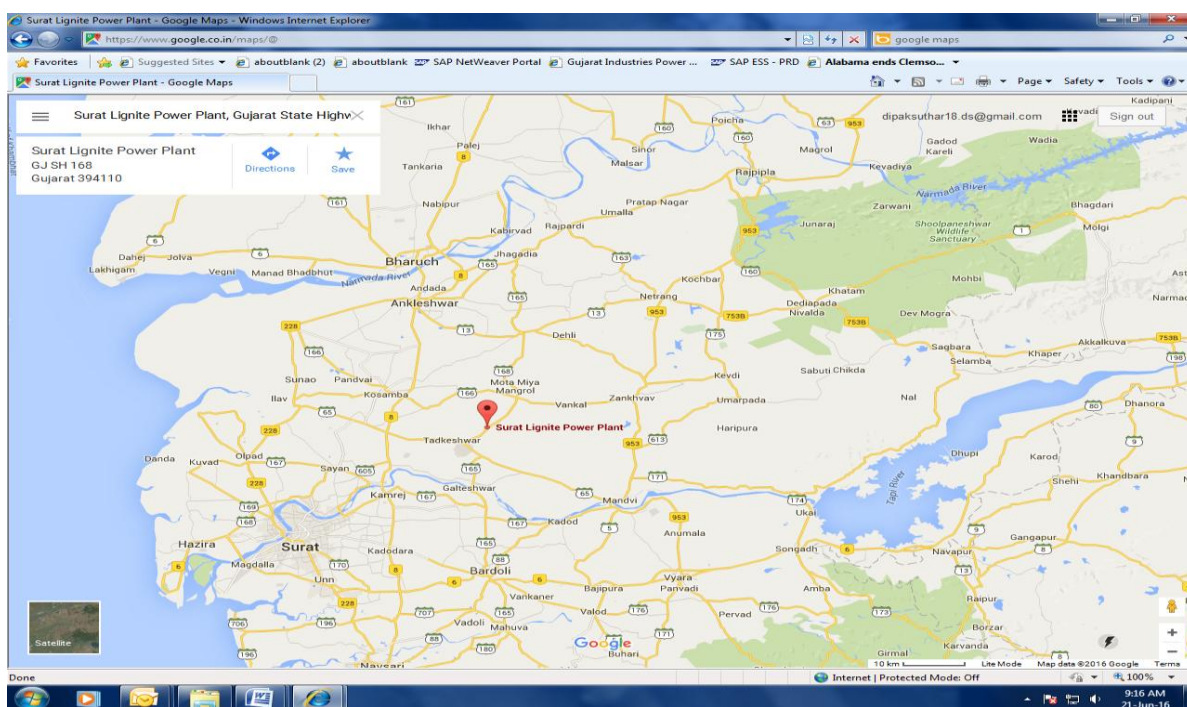
## SECTION-A INSTRUCTIONS TO BIDDERS

### 1. PLANT SYNOPSIS

Gujarat Industries Power Company Limited (GIPCL) (henceforth be named Company/GIPCL), is a Premier Power Utility in the State of Gujarat with an installed capacity of 810 MW and 5 MW Solar Power Plant. 51 MW Wind Energy Farm Project is under installation and commissioning stage. GIPCL has issued Lol (Letter of Intent) for 26 MW and 71.40 MW Wind Energy Farm Projects. GIPCL has commissioned 1MW Distributed Solar Power Projects at two locations in Gujarat viz. at Village: Amrol, Dist.: Anand and at Village: Vastan, Taluka Mangrol, Dist.: Surat.

Surat Lignite Power Plant (SLPP) with four units of 125 MW capacity each is located at Village: Nani Naroli, Taluka: Mangrol, District: Surat in Gujarat. GIPCL has also operating its own captive Lignite and Lime Stone Mines close to the Power Plant. The Power Plant is based on Circulating Fluidized Bed Combustion (CFBC) technology for the Boilers, where Lignite is burnt along with Lime Stone in the Combustor of the Boiler.

Surat Lignite Power Plant (SLPP) is accessible by road from Kim and Kosamba, which are on Mumbai-Ahmedabad highway. From Kosamba, SLPP is around 32 KM, out of which 27 KM is part of the National & State Highway and balance 5 KM is District Road. From Kim, SLPP is around 18 KM, out of which 13 KM is the State Highway and balance 5 KM is District Road. The nearest Broad Gauge Railway Line is at Kim, which is around 21 KM from the SLPP. Surat is approximately 50 KM from the SLPP. Location Map for SLPP is as under.



**The Company intends to award “Repairing of lignite transport bituminous road from shah bridge to apron feeder “at SLPP and is therefore inviting open tenders online (web site : <https://gipcl.nprocure.com> or <https://www.nprocure.com>) & resourceful contractors.**

## **2. SCOPE OF WORK**

The scope of work covered by this specification, in general, comprises the general civil works for Repairing of bituminous lignite transport road i.e. Box cutting as per requirement, cleaning and disposal of debris/dust, WMM, BSG, Bituminous macadam, Bituminous concrete and asphalt painting at Surat Lignite Power Plant-GIPCL, at & Post: Nani Naroli, Taluka: Mangrol, Dist.: Surat. Scope of civil works covered under this specification includes in general excavation of box cutting, cleaning and disposal of waste materials, debris/dust etc., providing & laying 200mm thick WMM with watering, leveling and rolling, Applying primer with bitumen emulsion on wet mix surface, providing and laying 75 mm thick BSG on wet mix surface, providing and laying of 37.50mm thick B.M. and 25mm to 30mm thick bituminous concrete, asphalt painting as per detailed item nomenclature, technical specification and approved sketch/drawings. Repairing of road shall including repairing of pot holes, damages, wearing of surface, cracks on road surface, settlement of road etc. The scope of work shall also includes diversion of existing traffic (Lignite dumpers) safely by providing necessary sign boards, making alternate arrangement for movement, making working area safe by proving barrier etc complete as directed by Engineer-in charge.

Scope of work includes providing, supplying and laying of all materials, safe storage of materials, wastage, labour, supervision, shifting, transportation, loading, unloading, plant and equipment, machinery, wastage of materials, all consumables such as, but not limited to fuel, lubricants, petrol, oil, diesel, all required tools & tackles, all leads & lifts, etc.. and all necessary auxiliary works not specified herein but which is required to carry out for satisfactory and timely completion of entire scope of work as specified and as directed by Engineer-in-charge.

The Bidder shall carry out Wet Mix Macadam work with wet mix plant of having 60-80 TPH capacity within lead of 50 Kms from work site.

The Bidder shall carry out BSG, B.M. and B.C. with drum mix plant of having 80-120 TPH capacity within lead of 50 Kms from work site.

The bidder must have to mobilized and make own arrangement for WMM batching plant, drum mix plant of 80-120 TPH capacity, sensor paver machine of required width, Vibro roller minimum 10 tone capacity, water tanker, grader machine, air compressor machine, dumpers, bitumen spreader and other required tools and tackles for the quality and timely completion of work

## **3. GENERAL INSTRUCTIONS**

2.1 The Bidders who are interested in participating in the tender must read and comply with the instructions and the Terms & Conditions contained in the tender documents.

- 2.2 The Bids shall be filled in by the Bidders clearly, neatly and accurately. Any alteration, erasures or overwriting shall be liable to make the tender invalid unless the same is neatly carried out and attested over the full signature of Bidder. The decision of the Company to interpret the information and rates filled in by the Bidder shall be final and binding on the Bidder.
- 2.3 The Bidders are requested to make themselves fully conversant with the General Conditions of Contract, Special Conditions of Contract, Technical Specifications, Site conditions, Safety & Health Aspects and Norms to be observed etc. before submitting their bids so that no ambiguity arises in these respects subsequent to submission of the Bids.
- 2.4 Before quoting the rates, the Bidder should go through the specifications, scope of work etc. and get himself fully conversant with them. The Bid should include cost of mobilization and cost to adhere to all Safety Norms as described in the tender. No relaxation or request for revision of quoted/accepted rates shall be entertained subsequent to the opening of Bid on account of mobilization or Safety costs.
- 2.5 Bidder has to quote Price Bid. However, GIPCL reserves the rights to allot contract to a single Bidder or GIPCL may split the contract between two parties. In case of splitting of the contract between two parties, the L2 Bidder shall match the rate with L1 Bidder.
- 2.6 Bidder has to submit all the information as per required Bid document. Failure to furnish all the information as per required Bid documents or submission of a Bid containing deviations from the contractual terms and conditions, specifications and requirements, shall be rejected.
- 2.7 The Bids shall be submitted within the time frames set out in the Notice Inviting Tender ('NIT') and Bids submitted thereafter shall not be accepted and considered.
- 2.8 The tender documents shall not be transferable.
- 2.9 The Bidders are expected to examine all instructions, forms, terms & specifications in the Bid documents and to get fully acquainted themselves with all the conditions and matters which may affect the subject matter of the work/tender or the cost thereof. If any Bidder finds any discrepancies or omissions in the specifications and documents or any doubt in true meaning or interpretation of any part, he shall seek necessary clarifications in writing or during Pre-Bid meeting if required.
- 2.10 Conditional offers shall not be considered and liable to be rejected.
- 2.11 The Company reserves the right to extend the deadlines for submission of the Bids by giving amendments.
- 2.12 During evaluation of Bids the Company may, at its discretion ask the Bidder (s) for clarification of their Bid. The request for clarification and the response shall be in writing and no change in prices or substance of the Bid shall be sought, offered or permitted.
- 2.13 The Company reserves the right to amend/ modify the Bidding documents at any time prior to the deadline for submission of Bids, either at its own discretion or in response to the clarification requested by a prospective Bidder. In such case, the Company may in its discretion extend the deadline for submission of Bids in order to facilitate the prospective Bidders for incorporating the effect of the amendment in their Bids.
- 2.14 The Bidders shall bear all costs and expenses associated with the preparation and submission of their respective Bids, to attend meetings or conferences, if any, including any pre award discussion with the successful Bidder, technical

and other presentations etc. and the Company shall not be liable for any expense thereof.

- 2.15 If the successful Bidder is a joint venture, formed of two or more companies, the Bidder along with the partners shall accept joint and several responsibilities and liabilities for all obligations under the Contract.
- 2.16 Timely and satisfactory completion of the work and strict adherence to the allotted time frames for jobs shall be the essence of the contract.
- 2.17 The Company reserves the right to qualify/disqualify any applicant without assigning any reason.
- 2.18 The Bidder shall be disqualified if any untrue statement or misrepresentation is made in the Bid forms, attachments and other supporting documents submitted by the Bidder.

#### **4. SITE VISIT**

The Bidder is advised to visit the Surat Lignite Power Plant (SLPP) after downloading the tender copy from website <https://gipcl.nprocure.com> or <https://www.nprocure.com> to study the actual working conditions, before submitting their offer. The Bidders shall examine the site of works and its surroundings and see for himself that may be necessary for preparing the Bid and entering into a contract. All costs and liabilities arising out of the site visit shall be at Bidder's account.

The submission of tender by a contractor implies that he has read these instructions, conditions of the contract etc. and has himself aware of the scope, nature of works & specifications of the works to be done. GIPCL will not, therefore after acceptance of contractor's rate, pay any extra charges for any other reason in case the contractor is found later on to have misjudged the site conditions.

Any error in description or quantity or omission in the contract document shall not vitiate the contract or release the contractor from executing the work comprised in the contract according to scope of works, magnitude of the works, requirement of materials, equipment, tools & tackles, labour, etc. Contractor has to complete the work in accordance with the contract documents irrespective of any defects, omissions or errors that may be found in the contract documents.

The Bidder is deemed to have examined and understood the tender document, obtained his own information in all matters whatsoever that may affect the works to be carried out especially mentioned or works which may have to be carried out to fulfill his contractual obligation within the scheduled rates and to have satisfied himself to the sufficiency for his offer.

BIDDER shall inspect the site, examine and obtain all information required and satisfy himself regarding matters such as access to site, communication, transport, working condition including constraint of work place, condition of road which needs to be repair, quantum of dusting, movement of vehicles of road, diversion of traffic requirement, requirement of tools/tackles & equipment, importance of work, round the clock working conditions, safety requirements, right of way, the type and number of equipment and facilities required for the satisfactory completion of work, the quantity of various items of the work, the availability of local labour, availability and rates of material, local working conditions, uncertainties of weather, obstructions and hindrances that may arise, etc which may affect the work or cost



thereof, before submission of his Bid. Ignorance of site conditions shall not be accepted by the GIPCL as basis for any claim for compensation. The submission of a Bid by the BIDDER will be construed as evidence that such an examination was made. Any later claims / disputes in regard to rates quoted shall not be entertained or considered by the GIPCL.

The rates quoted by BIDDER shall be based on his own knowledge and judgment of the conditions and hazards involved and shall not be based on any representations of the Engineer.

## **5. ELIGIBILITY CRITERIA**

The following criteria will be adopted for qualifying the Bidders for consideration of the Bid for the further proceeding.

- 5.1** Bidder should possess minimum **Three years** of experience **out of last five years** (as per following Cl. No.5.2) in similar nature of jobs like Bituminous/RCC road work and should enclose proof of the same. Bidder shall submit necessary evidence for the same like attested copies of work orders along with work completion certificates from clients. The work completion certificate shall comprise of order value and executed value. Bidders should have executed the work directly. The work executed as a sub-contractor or subletting agency shall not be taken in to consideration.

Note: For evaluation of the bid the executed value mentioned in the work completion certificate will be considered.

- 5.2** Bidder should produce evidence of having experience of successfully completed similar works as defined hereunder during last **three years out of last five years** ending last day of the month previous to the one in which tender is invited, satisfactory progress of ongoing works etc. along with certified copies of documentary evidence preferably photo copies of work experience from the clients. The experience should be either of the following:

**a. One similar completed work each costing not less than Rs. 30 lacs.**

**OR**

**b. Two similar completed work each costing not less than Rs. 20 lacs.**

**OR**

**c. Three similar completed work each costing not less than Rs. 10 lacs**

Bidder should specifically mention fulfilling of above criteria in his offer along with details of work orders & work completion certificates issued by clients.

- 5.3** Contractor shall have to submit satisfactory work completion certificate from the client. Experience as a sub-contractor will not be allowed and Price Bid of such Bidders will be rejected.

- 5.4** Tender fee: The tender fee shall be accompanied in form of Demand Draft.

- 5.5** EMD: The EMD shall be accompanied in the form of DD or Bank Guarantee given by Bank as described in subsequent clause no. 8.

- 5.6** Bidder should have separate Employees Provident Fund code number towards registration of firm with RPF commissioner.

- 5.7** Attested copies of relevant documents duly signed & seal on each & every page shall be submitted. The above documents will be analyzed and after satisfaction, the Price Bid will be open. GIPCL may verify the documents, experience certificates issued by concern authority. After opening of technical Bid, if any required attested



documents found missing in the Technical Bid submitted by the Bidder, the tender inviting authority may inform to that Bidder only once by E-mail to submit the missing required documents within stipulated time limit. If Bidder/Bidders fail to submit within stipulated time, their Bid will be declared technically disqualified and no further correspondence will be entertained.

- 5.8** Bidder should have annual turnover of Rs.50 lacs for last three financial years **i.e. 2013-14, 2014-15 & 2015-16**. Bidder shall furnish annual audited financial statement duly certified by Chartered Accountant for the last three financial years to demonstrate the financial healthiness of the company. The balance Sheet must be in the name of the company. Any type of MOU for this purpose will not be entertained.

Note: In case, the annual turnover is less than the statutory guideline which does not require audit, the bidder shall submit the turnover certificate from Chartered Accountant.

- 5.9** The Bidder has to submit INCOME TAX Permanent Account Number (PAN), TIN/VAT no. of the firm. Copies of the same shall be submitted.
- 5.10** Bidder has to submit Service Tax registration number. Copy of the same shall be submitted.
- 5.11** In case Bidder is a joint venture company since last seven years, the above requirements/credential of Joint Venture Company / Parent companies shall be considered.

**The Bidder shall submit all the evidences, documents, attested copies of work orders & work completion certificates etc... as a proof with EMD & Tender Fee and also provide the requisite details online for meeting the prequalification requirements. GIPCL will verify the experience, performance, capability & strength of Bidders, independently for executing the job. GIPCL may visit the site & consult the owner of the industry/property where similar job is executed by Bidder. GIPCL reserves the right to accept/split/cancel/reject any/all Bids without assigning any reason thereof. The tenders of qualified Bidder/Bidders shall only be considered for further evaluation.**

## **6. PRE-BID MEETING**

A pre Bid meeting is arranged at office of Surat Lignite Power Plant at Village: Nani Naroli, Taluka: Mangrol, Dist.: Surat on 16 December 2016, 16.00 Hours. All the Bidders are required to attend or send their authorized representative along with authorization letter for attending this meeting. It is desired to attend the Pre-Bid meeting as the work is directly related to the Plant operation and performance of Plant is depending on timely evacuation of bed material.

Hence every Bidder is requiring understanding the site condition, work importance, working method, etc... with respect to other hindrances which may come across during execution of work.

## 7. **LANGUAGE OF BID**

The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and the Company, shall be written in the English language. Any printed literature furnished by the Bidder, written in another language shall be accompanied by an English translation for the purpose of interpretation of the Bid.

## 8. **EARNEST MONEY DEPOSIT (EMD) AND TENDER FEE**

- 8.1 An EMD of Rs. 46,000/- and Nonrefundable Tender fee Rs. 2,000/- shall accompany with Bid. The EMD & Tender fee shall be in the form of a crossed bank Demand Draft in favor of Gujarat Industries Power Co. Ltd. as per following details:

<b>Bank</b>	<b>Payable at :</b>
1. Bank of Baroda	Mosali, Dist: Surat
2. State Bank of India	Nani Naroli, Branch Code: 13423
3. Any Nationalized banks	Surat

- 8.2 The EMD, in alternative, may be submitted in the form of irrevocable Bank Guarantee in favor of Gujarat Industries Power Company Limited from any Nationalized Bank including Public Sector bank-IDBI Ltd or AXIS Bank, HDFC Bank, ICICI Bank or Kotak Mahindra bank, Yes Bank, Ratnakar Bank, IndusInd Bank, Karur Vysya Bank, DCB Bank, ING Vyasya Bank or The Kalapur Commercial Co-operative Bank Ltd, Rajkot Nagrik Sahakari Bank Ltd, The Ahmedabad Mercantile Co-operative bank Ltd, The Mehsana Urban Co-operative Bank Ltd, Nutan Nagrik Sahakari Bank Ltd as per Performa of BG enclosed with this e-tender under Section-F.
- 8.3 In case EMD is paid in the form of BG, the same shall be valid for a period of 180 days after the due date for submission of the bid
- 8.4 The EMD of the successful bidder will be returned after payment of Security Deposit by successful bidder.
- 8.5 The earnest money deposit paid in the form of demand draft will be refunded to the unsuccessful BIDDER as soon as the tender is finalized.
- 8.6 Any bid not accompanied with EMD and Tender fee will be rejected. Tender fees and EMD should be submitted in physical form directly to GIPCL as per Clause 6.9.
- 8.7 No interest shall be payable on EMD.
- 8.8 The EMD will be forfeited if the BIDDER (i) withdraws his tender after acceptance or (ii) withdraws his tender before the validity date of the tender.

## 8.9 **SCHEDULE OF EMD & TENDER FEES**

EMD & Tender fee and other documents to be submitted in physical form <b>within two working days</b> after due date of closing of the tender	Address for Submission: <b>General Manager (Mines)</b> <b>GUJARAT INDUSTRIES POWER CO. LTD.,</b> <b>(Surat Lignite Power Plant)</b> <b>Village: Nani Naroli, Taluka: Mangrol, District: Surat.</b> <b>PIN: 394 110, Gujarat. Phone : 02629-261063 (10 lines)</b> <b>Fax : (02629) 261073 / 261074</b>
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## 9. **SUBMISSION OF BIDS**

### **A: MODE OF SUBMISSION**

The bids shall be submitted online at the <https://gipcl.nprocure.com> or <https://www.nprocure.com> within the dates specified in the NIT along with the details of tender fees, EMD in two parts as under:

- (a) Pre qualification and Techno-commercial Bid without price.
- (b) Price Bid.

**Note: Tender fee and EMD shall be submitted in physical form within two working days after due date of closing of the tender.**

#### **(a) Pre qualification and Techno-commercial Bid without price:**

The tender document duly signed in all pages without price bid along with techno-commercial deviations, if any, shall accompany the bid. The following Information shall be provided in the techno commercial bid:

- 1. Qualification and experience of site in charge.
- 2. Qualification & experience of Supervisors/Engineers.

The following supporting documents shall also be submitted along with EMD & Tender Fee in physical form:

- 1. The tender documents dully signed in all pages without price bid along with techno-commercial deviations, if any.
- 2. Proof of experience meeting the minimum eligibility criteria
- 3. Performance certificate issued by clients.
- 4. Previous work order copies.
- 5. Details of present work order (if any)
- 6. Turn over for the last three years, audited annual accounts/financial statements i.e. profit and loss account and balance sheet duly certified by a practicing CA will be required.
- 7. P.F. Number and Allotment Letter.
- 8. PAN Number.
- 9. Service tax registration number/certificate copy.

#### **(b) Price Bid:**

Price Bid shall be submitted only in soft form through <https://gipcl.nprocure.com> or <https://www.nprocure.com> **Note: Estimate includes cost of all manpower, equipments, vehicles, consumables, tools & tackles, transportation, Safety statutory compliance, mobilization etc...**

- 1. Service tax shall be paid extra at actual as per prevailing rates as declared by Central Government on submission of documentary evidence.
- 2. **Bidder shall have to quote the rates in the form of %age. i.e. “At Estimated Value OR %age below the estimated value OR %age above the estimated value in online Price Bid only.”**

3. The quantities shown in the price Bid are approximate for the contract period and may vary as per job requirement.
4. The Bidder shall fill the Bid documents with utmost care in consonance with the instructions contained in the Bid documents.

**B: METHOD OF TENDERING/SIGNATURE ON BIDS**

- (i) The Bid must contain the postal address like name, residence and place of business of the person or persons submitting the Bid and must be signed and sealed by the Bidder with his usual signature. The name of all persons signing the documents shall also be typed or printed below the signature on each page.
- (ii) Bid by a joint venture/partnership firm must be furnished with full names of all partners and be signed with the partnership name, followed by the signature and designation of one of the authorised partners or other authorised representative(s). A certified copy of the power of attorney authorizing such partner or representative shall also be submitted.
- (iii) Bids by a Corporation/Company must be signed with the legal name of the Corporation/Company i.e by the President/Managing Director/Secretary or other person or persons authorised to Bid on behalf of such Corporation/Company. A certified copy of the board resolution/power of attorney authorizing such partner or representative shall also be submitted.
- (iv) The Bidder's name stated on the proposal shall be the exact legal name of the firm.
- (v) Erasures or other changes in the Bid Documents shall be initialed by the person signing the Bid.
- (vi) Bids not conforming to the above requirements of signing shall be disqualified.

**10. MODIFICATION AND WITHDRAWAL OF BIDS**

- a. The Bidder may modify or withdraw the bid prior to the deadline prescribed for submission of bids.
- b. No Bid shall be modified subsequent to the deadline for submission of Bids.
- c. No Bid shall be withdrawn in the interval between the deadline for submission of Bids and the expiration of the period of bid validity.

**11. POLICY FOR BIDS UNDER CONSIDERATION**

- a. Bid shall be deemed to be under consideration immediately after opening of the bid and till official intimation of award/rejection made by the Company to the Bidders.
- b. While the Bids are under consideration, Bidders and / or their representative or other interested parties are advised to refrain from contacting by any means, the Company. The Engineer, if necessary, will obtain clarifications on the Bids by requesting for such information from any or all the Bidders, in writing as may be necessary. The Bidder will not be permitted to change the price or substance of the Bid after the Bid has been opened.

**12. EFFECT AND VALIDITY OF THE BID**

- a. The Bid should be kept valid for acceptance for a period of one hundred and eighty (180) calendar days from the last date of submission of Bids.
- b. The submission of any Bid along with the required documents and specifications shall constitute an agreement that the Bidder shall have no cause of action or claim, against the Company for rejection of his Bid. The Company shall always be at liberty to reject or accept any Bid or Bids at his sole discretion and any action will not be called into question and the Bidder shall have no claim in that regard against the GIPCL.

**13. OPENING OF BIDS**

13.1 The GIPCL will open the pre-qualification/Technical Bid/price Bid, as the case may be, in presence of Bidder's representatives whenever such a procedure has been specified. Otherwise the tender will be opened by the authorized officers of GIPCL.

**13.2 Preliminary Examination:**

13.2.1 The Company will examine the Bids for any computational errors, for sureties furnished by bidder, for authentication of documents submitted and completeness of the Bids.

13.2.2 Arithmetical errors will be rectified on the following basis:

- (a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price will be corrected & will be binding to the bidders
- (b) If there is a discrepancy between the Total Bid Amount and the sum of total prices, the sum of total prices shall prevail and the Total Bid Amount will be corrected & will be binding to the bidders.

**14. EVALUATION & COMPARISON OF BIDS**

- 14.1 GIPCL shall evaluate the Bids received and accepted by it to ascertain the lowest evaluated Bid in conformity with the specifications of the tender documents.
- 14.2 The Technical Bids will be examined for minor matters regarding qualification of bids. Subsequent to correspondence with the respective bidders, the decision of Tender Committee will be final.
- 14.3 All responses to requests for clarifications shall be in writing and shall be presented to the Company through e-mail or in a sealed envelope on or before the given date requested by the Company. If the Technical clarifications sought by the Company do not reach the Company on or before due date, the Bid will be rejected.
- 14.4 The comparison of all the Bids shall be carried out with reference to the scope of work as per the technical specification. Any deviation/omission shall be evaluated at highest quoted price of the deviation/omission quoted by any of the Bidder. In case a separate price (for omission) is not given by any

other Bidder, a reasonable price of the same shall be taken & the same shall be binding to the Bidders.

- 14.5 The commercial deviation, if any, shall be loaded to bring all the Bids at par. The loading shall be carried out at an interest rate of 2% above PLR of SBI.
- 14.6 A Bid to be substantially responsive shall be one which on evaluation confirms to all the terms, conditions and specifications of the Bid documents without any material deviation or reservation.
- 14.7 For the above referred purpose, a ‘material deviation’ shall be one which:
  - (a) Which affects in any substantial way the scope, quality or performance of the contract, or
  - (b) Which limits in any substantial way and in a manner inconsistent with the Bid documents, GIPCL’s right or the Bidder’s obligations, under the contract, or
  - (c) Whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

## **15. RIGHT OF REJECTION OF TENDERS**

- 15.1 GIPCL reserves the right to accept or reject any Bid or to cancel the Bidding process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders regarding the same.
- 15.2 Any Tender without EMD and Tender fee will be treated as non responsive and shall be rejected at the outset & no further correspondence shall be entertained regarding this.
- 15.3 GIPCL reserves the right to debar any Bidder from participation in future Bids if such Bidder has quoted an abnormally low rate in the Bid document/price Bid.

## **16. AWARD OF CONTRACT**

- 16.1 GIPCL will award the contract to that bidder whose quotation has been determined to be substantially responsive and evaluated as the lowest quotation in conformity with the requirements of the specifications and documents contained herein, provided further that the bidder is determined and evaluated to be qualified to perform the contract satisfactorily.
- 16.2 The successful bidder shall be intimated of his selection through the Letter of Intent or Letter of Award/ Work Order which shall be sent to him through e-mail, courier, fax or registered mail.

## **17. CONTRACT PERIOD**

- 17.1 The contract will be for a period of 02 months from the date of actual commencement of operation of the contract as stated in the Special Conditions of Contract (‘Contract Period’).
- 17.2 GIPCL reserves the right to extend the Contract Period on the same rates, terms and conditions without any price escalation and entering into any new contract.
- 17.3 The said Contract Period can be extended if mutually agreed upon by both the parties up to one year and in such a case a revised work order shall be issued at the same rates, terms & condition or at negotiated rates acceptable by both parties i.e. the Company & the Contractor.

**18. CONTRACT SECURITY DEPOSIT/ PERFORMANCE BANK GUARANTEE**

As a Contract Security, the successful Bidder, to whom the work is awarded, shall be required to furnish a Performance Bank Guarantee (PBG)/Contract security deposit in favour of Gujarat Industries Power Company Limited for guarantee amount at ten percent **(10%)** of the “Contract Price” from any Nationalized Bank including Public Sector bank-IDBI Ltd or AXIS Bank, HDFC Bank, ICICI Bank or Kotak Mahindra bank, Yes Bank, Ratnakar Bank, IndusInd Bank, Karur Vysya Bank, DCB Bank, ING Vyasya Bank or The Kalupur Commercial Co-operative Bank Ltd, Rajkot Nagrik Sahakari Bank Ltd, The Ahmedabad Mercantile Co-operative bank Ltd, The Mehsana Urban Co-operative Bank Ltd, Nutan Nagrik Sahakari Bank Ltd in the format attached in **SECTION-F (Annexure B)**, and it shall guarantee the faithful performance of the 'Contract' in accordance with the terms and conditions specified in these documents and specifications. Contract security deposit shall be submitted strictly within twenty one days from the date of Lol or work order, whichever is earlier. The guarantee shall be valid up to defect liability period/ retention period of Twelve months from the contract completion date. The Guarantee amount shall be payable to the Company in Bidder's home currency without any condition whatsoever.

The Performance Bank Guarantee (initial security deposit) will be returned to the Vendor/Contractor without any interest at the end of the 'defect liability period' after completion of contract, repairing of any defect notice during guarantee period and on fulfilling contractual obligations throughout the retention period. However, any delay in submission of initial SD will result in equivalent late release of entire SD after guarantee period

**18. ASSIGNMENT AND SUB-LETTING**

The Contractor shall not directly or indirectly assign or sub-let total/any part of the contract to any other party or agency.

**20. CONTRACTOR'S OBLIGATIONS**

**A: DEPLOYMENT & RESPONSIBILITY OF MANPOWER**

- (i) The Contractor shall deploy suitably qualified and sufficient manpower for timely & satisfactorily execution of the works under the contract.
- (ii) The Contractor shall deploy sufficient skilled, Semi-skilled and Un-skilled manpower separately to properly complete the job in given/scheduled time.
- (iii) The Contractor shall depute its own workmen/labor with proper identification to enter the plant premises after ensuring that the jobs are scheduled.
- (iv) At the time of deploying manpower, the Contractor shall strictly comply all the applicable labor laws/Acts norms including but not restricted to the age of the workers, women workers and shall also ensure that a police verification and security check for all the workmen/labor engaged at the GIPCL site is done and necessary documents regarding the same shall be submitted to the GIPCL's authorized representative/officer-in-charge. Any default in complying with the same or any misrepresentation regarding compliance of the same shall compel GIPCL to initiate appropriate civil or criminal proceedings regarding the same.
- (v) The Contractor shall also comply with the safety requirements and provide his workmen/labor with safety equipment like helmets, masks, gum boots, hand



gloves and other necessary PPEs for properly undertaking the operations involved under this contract. Following are also to be issued:

- a) Safety shoes
  - b) Goggles / face shield.
  - c) Ear plug / Ear muff.
  - d) Hand gloves like electrical hand gloves / cotton hand gloves / Chemical hand gloves
- (vi) Contractor shall nominate /authorize senior experienced person in writing as site in charge to co-ordinate with GIPCL engineer and who shall bear overall responsibility for performance of the contract. Such person shall remain always available at site or site office allotted to the contractor at SLPP site. Contractor has to submit the authority letter and documentary proof for the same.
- (vii) The Contractor shall appoint a supervisor who shall co-ordinate with GIPCL's Engineer In - Charge for daily entrusted job. They have to maintain daily records duly signed for the works carried out and duly certified by Engineer-In-Charge. The Contractor in co-ordination with the Engineer-In-Charge shall ensure the availability of adequate manpower to carry out the job satisfactorily on a daily basis. As per the instruction of Engineer-In-Charge they have to allot the work and execute the same in specified time limit.
- (viii) During execution of the works, one or more jobs may be required to be done simultaneously and the Contractor shall mobilize additional resources accordingly.

#### **B: TOOLS & TACKLES:**

- (i) All tools and tackles required to execute the contract are in the scope of the contractor. The contractor should ensure that tools and tackles are in healthy & working condition. All consumable items would be in the scope of the contractor.

**Note: If work is suffered due to want of sufficient manpower, tools & tackles, vehicles, equipments and/or required consumables then 25% of the total job cost will be levied as a penalty for each and every instance.**

- (ii) For proper execution of the work as per the scope, the contractor is required to maintain sufficient quantity of tools & tackles with mobilized and make own arrangement for WMM batching plant, drum mix plant of 80-120 TPH capacity, sensor paver machine of required width, Vibro roller minimum 10 tone capacity, water tanker, grader machine, air compressor machine, dumpers, bitumen spreader and other required tools and tackles to complete the work in stipulated time.
- (iii) In case of breakdown of equipment, the contractor should work round the clock for putting back the area in service immediately within minimum time.
- (iv) Arrangement for lighting at the work spot has to be made by the contractor. He has to arrange all lighting equipment such as power cable, hand lamps. The contractor has to take prior approval for taking electrical power supply. The contractor should keep hand lamps of 24Volt for confined space and sufficient quantity of 240 Volt and halogen lamp for other area ensuring safety at work place
- (v) Pin sockets of IS standards should be used for all connections. For any accident take place & any damage to the equipment and/or injury to human due to carelessness in loose connection, contractors will be held responsible & liable for any recovery/actions.

**21. CLARIFICATION OF BIDDING DOCUMENTS**

If any Bidder requires any further information or clarification in the Bidding Documents, may notify the Company before one week of last date of submission of online Bid, in writing or by E-mail at the GIPCL's mailing address [slppcivil@gipcl.com](mailto:slppcivil@gipcl.com) as indicated in the 'Invitation to Bids'. The GIPCL's response (including an explanation of the query) will be sent in writing or by E-mail to all prospective Bidders who have received the Bidding Documents.

**22. TIME SCHEDULE**

The basic considerations and the essence of the 'Contract' shall be the strict adherence to the time schedule for performing the specified 'Works'.

**23. UNDERSTANDING AND CLARIFICATION ON DOCUMENTS AND SPECIFICATION**

The Bidder is required to carefully examine the specifications and documents, all the conditions and matters work wise & cost wise. If any Bidder finds any discrepancies or omissions in the specifications and documents or is in doubt for any meaning of any part, he shall request in writing for an interpretation/ clarification to the GIPCL by telephonic conversation or by email.

All such interpretations and clarifications shall form a part of the Bid documents.

**24. PAYMENTS**

All the payments against the work order shall be in Indian currency and payable through cheque only.

**25. POINTS TO BE CONSIDERED DURING QUOTING ONLINE PRICE BID**

- a. The schedule of rates shall be read in conjunction with Instructions to Bidders, General conditions of contract, Special conditions of contract and Technical specifications.
- b. The quantities given in the schedule of rates are estimated and will be made as per actual work carried out as per the rates of work order.
- c. The method of measurement of completed work for payment shall be in accordance with the method of measurement specified in the Special Conditions of Contract.
- d. No separate amount shall be payable for use of auxiliary equipment incidental to or in day to day operation in the course of fulfillment of contractual obligation of the supplier.

**Note: Interested bidders are requested to submit the online tender at least two days in advance from the due date set for online submission of bid in order to avoid non participation of e-tender due to probable technical problem in e-tender system.**

**26. QUANTITIES**

The quantities specified are estimated and for tendering purpose only. Payment will be made, based on actual work done as certified by Engineer-in-charge of GIPCL.

Quantities of individual items may be revised during the course of contract period based on site requirement. Contractor shall not be entitled for any compensation on ground of such alteration in scope of work. GIPCL reserves the right to operate or increase/decrease quantities in each item or omit any item included in Schedule of Quantity at his discretion. Contractor shall have no claim, whatsoever, on grounds of loss of anticipated profit etc. on account of the same.

After commencement of the work, GIPCL, for any reason may not require to be carried out the whole/part of the work as specified in the tender, the ENGINEER-in-charge shall inform the fact for thereof to the CONTRACTOR and contractor shall have no claim for any payment or compensation whatsoever 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 full amount of the work not having been carried out nor shall he have any claim for compensation by reason of any change having been made in the original specifications and instructions which shall involve any curtailment of the work as originally contemplated.

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## **SECTION-B**

### **INSTRUCTIONS TO BIDDERS FOR ONLINE TENDERING**

**Subject:-** Surat Lignite Power Plant: 4 x 125 MW, Unit # I to IV – Repairing of lignite transport bituminous road from shah bridge to apron feeder.

- 1 Tender documents are available only in electronic format which Bidders can download free of cost from the web site: <https://www.nprocure.com> and <https://gipcl.nprocure.com> up to -----
- 2 All bids (technical and price bid) should be submitted online through the website <https://gipcl.nprocure.com> or <https://www.nprocure.com> only. No physical submission of price and technical bid will be entertained as it should be furnished on-line only. Also no fax, e-mail, letters will be entertained for the same.
- 3 Following should be submitted ‘off-line’ in sealed covers separately within the dates specified in the NIT during office hours at our office at Village Nani Naroli, Taluka Mangrol, Dist.Surat-394 110, Gujarat.  
[1] E.M.D. + Supporting Documents for Technical Bid.
- 4 Bidders who wish to participate in online tenders will have to procure / should have legally valid Digital Certificate (Class III) as per Information Technology Act-2000, using which they can sign their electronic bids. Bidders can procure the same from any of the license certifying Authority of India or can contact (n)code solutions- a division of GNFC Limited, who are licensed Certifying Authority by Government of India at address mentioned below at clause 5.
- 5 All bids should be digitally signed. The bidders are required to contact at the below mentioned address for detailed training on on-line tendering.  
(n) Code Solutions - A division of GNFC Ltd.  
402, GNFC Info tower, Bodakdev,  
Ahmedabad – 380 054 (India)  
Tel: +91 26857316 / 17 / 18  
Fax: +91 79 26857321  
E-mail: [nprocure@gnvfc.net](mailto:nprocure@gnvfc.net)  
[www.nprocure.com](http://www.nprocure.com)  
Toll Free: 1800-233-1010(Ext. 501,512,517)
- 6 Kindly note that, valid Digital Signature Certificates is must for all the interested bidders. Online tendering process is not possible without valid digital signature certificate.
- 7 Interested bidders are also requested to complete their procedure for taking digital signature certificate in respect of filling of application form, supporting documents with necessary fees at least 3 days before last date of tender submission.
- 8 (n)code solutions reserves the rights to issue digital signature certificate after verification of application forms / supporting documents submitted by bidder.  
(n)code solutions is fully authorized to issue digital signature certificate to bidders.
- 9 All the bidders who have no facility to participate in on-line tenders are requested to contact (n)code solutions for the same.

- 10 Free vendor training camp will be organized every Saturday between 4.00 to 5.00P.M. at (n) code solutions-A Division of GNFC Ltd., Bidders are requested to take benefit of the same (Advance Confirmation to (n) code is requested).
- 11 All the correspondence in respect of training, support or digital signature certificate should be addressed to (n) code solutions directly on the above mentioned address.

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## **SECTION-C GENERAL CONDITIONS OF CONTRACT**

### **1. CONTRACT SECURITY DEPOSIT/ PERFORMANCE BANK GUARANTEE**

As a Contract Security, the successful Bidder, to whom the work is awarded, shall be required to furnish a Performance Bank Guarantee (PBG)/Contract security deposit in favour of Gujarat Industries Power Company Limited for guarantee amount at ten percent **(10%)** of the “Annual Contract Price” from any Nationalized Bank including Public Sector bank-IBDI Ltd or AXIS Bank, HDFC Bank, ICICI Bank or Kotak Mahindra bank, Yes Bank, Ratnakar Bank, IndusInd Bank, Karur Vysya Bank, DCB Bank, ING Vyasya Bank or The Kalupur Commercial Co-operative Bank Ltd, Rajkot Nagrik Sahakari Bank Ltd, The Ahmedabad Mercantile Co-operative bank Ltd, The Mehsana Urban Co-operative Bank Ltd, Nutan Nagrik Sahakari Bank Ltd in the format attached in **SECTION-F (Annexure C)**, and it shall guarantee the faithful performance of the 'Contract' in accordance with the terms and conditions specified in these documents and specifications. Contract security deposit shall be submitted strictly within twenty one days from the date of Lol or work order, whichever is earlier. The guarantee shall be valid up to defect liability period/retention period of twelve months from the contract completion date. The Guarantee amount shall be payable to the Company in Bidder's home currency without any condition whatsoever.

The Performance Bank Guarantee (initial security deposit) will be returned to the Vendor/Contractor without any interest at the end of the 'Retention Period' after completion of contract and on fulfilling contractual obligations throughout the retention period. However, any delay in submission of initial SD will result in equivalent late release of entire SD after guarantee period.

### **2. RECOVERY CLAUSE**

- (i) In case of any damage of equipment/machinery/Cable/GIPCL asset due to negligence of contractor or any other reasons attributed to contractor the decision of Engineer-in-charge regarding the amount of recovery shall be final and binding subject to a maximum of 10% of contract value. Recovery will be affected from the monthly bills and/or retention money/security deposit.
- (ii) If the contractor fails to execute the work as per directions of Engineer (I/c) within the time frame given in work order and as per day to day instructions by Engineer-in-charge, GIPCL shall get the work done by third party at the risk & cost of the contractor with 15% additional overhead charges of GIPCL.

### **3. ASSIGNMENT AND SUBLETTING OF THE CONTRACT**

The contractor shall not assign or sub-let any part of the contract to any other party or agency without written permission from GIPCL.

**4. DEDUCTIONS FROM CONTRACT PRICE**

All costs, charges or expenses that GIPCL may have paid, for which, under the contract the contractor is liable, shall be recovered by the GIPCL. The contractor shall pay all such claims within 15 days of claim, failing which the same shall be deducted from the bills of contractor.

**5. TERMINATION OF CONTRACT BY GIPCL**

Contractor shall be responsible to complete the jobs within agreed time schedule and in case contractor fail to complete the job, GIPCL shall recover from his bill, Security Deposit and / or whatsoever for expenses incurred to complete the job with additional 15% overhead charges.

In case if contractor's services are not found satisfactory with respect to mobilization, time bound activities, workmanship & safety (OHSAS policy of GIPCL) then GIPCL has right to terminate the contract at any time by giving him 15 days advance notice without assigning any reason and will make the alternate arrangement at the risk & cost of contractor.

GIPCL may terminate the contract after due recoveries of pending jobs/damages after giving 15 days advance notice to the contractor if any of the following events occur –

- i. Contractor is adjudged as insolvent.
- ii. Contractor has abandoned the contract.
- iii. Contractor fails to proceed with the work with due diligence as per requirements of the contract.
- iv. Contractor has neglected or failed persistently to observe or perform any of the acts, matters or things, which as per the contract are to be observed and performed by the contractor.
- v. Contractor repetitively violating the safety norms for more than three incidents.
- vi. Any major contradiction of applicable labour laws.
- vii. Any major deviations from contractual terms and conditions including quality of job.

**6. FAILURE & TERMINATION**

If the CONTRACTOR after receipt of written notice from the GIPCL/ ENGINEER requiring compliance, with such further drawings and / or the GIPCL /ENGINEER instructions fails within seven days to comply with the same, the GIPCL /ENGINEER may employ and pay other agencies to execute any such work whatsoever as may be necessary to give effect thereto and all costs incurred in connection therewith shall be recoverable from the CONTRACTOR by the GIPCL on a certificate by the GIPCL/ENGINEER as a debt or may be deducted by him from any money due or to become due to the CONTRACTOR.

If the contractor fails to execute the work or fails to mobilize the resources and equipments as per directions of GIPCL / ENGINEER within the time frame given and/or violating the GIPCL's safety rules & regulations, ENGINEER/ GIPCL shall



get the work done by third party at the risk & cost of the CONTRACTOR with additional 15% overhead charges of GIPCL and all costs incurred in connection therewith shall be recoverable from the CONTRACTOR by the GIPCL /ENGINEER as a debt or may be deducted by him from any money due or to become due to the CONTRACTOR.

In case if contractor's services are not found satisfactory with respect to mobilization, time bound activities, workmanship & safety (OHSAS policy of GIPCL) then GIPCL has rights to terminate the contract at any time by giving you 15 days advance notice without assigning any reason and will make the alternate arrangement at cost and risk of the Contractor.

## **7. SETTLEMENT OF DISPUTES**

- a. Any disputes or difference of opinion between parties arising out of the contract to the extent possible shall be settled amicably between the parties. If amicable settlement cannot be reached all the disputed issues shall be resolved through arbitration before a Sole Arbitrator appointed by Managing Director, GIPCL according to the provisions of The Arbitration & Conciliation Act, 1996. The place of arbitration shall be at Surat/Vadodara or any other place within state of Gujarat as may be mutually agreed by the parties in consultation with the tribunal.
- b. In appointment of the Sole Arbitrator, if the dispute claim is up to a sum of Rs. 25/- Lakh, a person having a position equivalent to a Retired District Judge shall be appointed; for the claim higher than Rs. 25/- Lakh and up to Rs. 100/- Lakh, the same shall be referred to a Retired High Court Judge and for a claim exceeding Rs. 100/- Lakh, the same shall be referred to a Retired Supreme Court Judge.
- c. Work under the contract shall be continued by the contractor during arbitration proceedings unless GIPCL shall order suspension thereof or any part thereof in writing or unless the matter in such work cannot possibly be continued unless the decision of the Arbitration proceedings is obtained.

## **8. INTERPRETATION OF CLAUSE**

In case of disputes as regards interpretation of any of the clauses or specification, the decision of General Manager (Mines) - GIPCL will be final and binding on the contractor.

## **9. EMPLOYEE'S COMPENSATION INSURANCE**

Contractor shall take all risk Insurance Policy to cover all his workmen/employees, staff applicable under the Employee Compensation Act 1923 or any amendment thereof as also insurance cover for third party liability. The contractor shall keep the GIPCL indemnified from all liabilities arising out of his action in pursuance of this contract. The E. C. Policy should be obtained from Surat Jurisdiction and shall be assigned to GIPCL. EC policy should cover the specified contract period.

Contractor shall also obtain additional off-duty coverage insurance policy for all his workers as per clause no. 10 herein under.

## **10. STATUTORY REQUIREMENTS**

### **a. COMPLIANCE OF LABOUR LAWS**

1. The contractor shall at his own cost comply with the provision of labor laws, rules, orders and notifications whether central or state or local as applicable to him or to this contract from time to time. These Acts/Rules include without limitation of the followings.
2. Contractor shall be solely responsible and shall fully comply with all the provisions of all the labor laws applicable such as the Minimum Wages Act, 1948, Contract Labor (Regulation & Abolition) Act 1970, Factories Act, 1948, Payment of Bonus Act 1965, Employees Provident Fund and Miscellaneous Provision Act 1952, Industrial Dispute Act 1947, Workmen Compensation Act 1923, Payment of Gratuity 1972, Interstate Migrant Workmen Act 1979, Equal Remuneration Act with Rules, Order and Notifications issued/made there under from time to time.
3. All other Acts, Rules/Bye-Laws, Orders, Notifications etc. present of future applicable to the contractor from time to time for performing the contract job.
  - 3.1 The Contractor shall provide and be responsible for payment of Wages, Salaries, Bonus, Social charges, Insurance, Food, Accommodation, Transport, Medical and Canteen facilities and other statutory privileges and facilities to his personnel as per law/rules/regulations and orders of the Central Government, State Government, Local Authorities or other authorities as are in force from time to time. All employees of the Contractor shall be employee of the Contractor.
  - 3.2 The contractor shall have a valid license obtained from Licensing Authority under the Contract Labor (Regulation & Abolition) Act-1970 at the time of execution of the contract covering all his employees working at SLPP site and furnish the same failing which GIPCL may terminate the contract at its sole discretion.
  - 3.3. The Contractor shall at the time of execution of the contract have a EPF Code Number obtained from the Authorities concerned under the Employees Provident & Miscellaneous Provisions Act, 1972 and remit contributions in respect of the employees employed by him at SLPP Site to the P.F office concerned every month failing which GIPCL will recover from the outstanding payment to the contractor from GIPCL.PF code of Gujarat region should be taken.
  - 3.4. The Contractor shall maintain all records/registers required to be maintained by him under various labor laws mentioned above and produce the same before the Statutory Authorities whenever required.
  - 3.5 The Contractor shall also submit periodical reports / returns to the various statutory authorities such as the Contract Labour (Regulation & Abolition) Act-1970, Employees Provident Fund Act etc. Under intimation to HR&Admn.Dept.
  - 3.6 The Contractor shall not pay less than the Minimum Wages notified by the Government from time to time to his employees of corresponding categories.
  - 3.7. The Contractor shall be responsible for payment of overtime wages to his workmen, if any, in case they are required to work beyond the prescribed hours under law as per applicable rates.

- 3.8 The contractor shall take Workmen Compensation Insurance Policy for all his employees working at SLPP. The contractor shall indemnify the company against any liability due to any work injury or accident to any of its employees.
- 3.9 The Contractor shall in the event any of his workmen / employee sustains any injury or disablement due to an accident arising out of and in the course of his employment, provide necessary medical treatment and pay compensation as applicable, required under the Workmen's Compensation Act, 1923.
- 3.10 If any of the persons engaged by the Contractor misbehave with any of the officials or the Company or commit any misconduct with regard to the property of the Company or suffer from any serious communicable disease, the Contractor shall replace them immediately.
- 3.11 The Contractor shall not engage / employ persons below the age of 18 years. Employment of women shall be strictly according to applicable laws.
- 3.12 GIPCL will have right to deduct and disburse the claims of the individual / parties being a principal employer on any account whatsoever in relation to their employment with the contractor. The Security deposit will be released to the contractor at the end of the contractual tenure subject to an undertaking by the contractor that in the event any of his workmen or the heirs of workmen puts up a claim for recovery of money due to him from the contractor before the appropriate authority under the I.D.Act 1947 or under any other labor laws or for compensation under the Workmen's Compensation Act, 1923 and the appropriate authority has given a direction for making payment the contractor will meet the same or indemnify GIPCL if in the event GIPCL pays it as Principal Employer.
- 3.13 The contractor shall make payment of wages to his employees on fixed date within the period specified under the applicable Law, in presence of representative of the company. He will submit a true copy of wage sheet, attendance register and P.F. remitted challans on monthly basis to HR&A dept. for verification and record.
- 3.14 The Contractor shall provide Safety items / kits to his employees such as safety shoes, goggles, ear plugs, hand gloves, safety belts etc., if any, required under the law.
- 3.15 The contractor shall conduct pre-induction and periodic medical checkup of his workmen as per applicable laws.
4. The contractor shall be solely responsible for any accident caused to his workers and should adhere to all rules / regulations as per labor laws of Government and other statutory laws as applicable.
5. The contractor should register himself under the Contract Labor Act, Employee Compensation Act and PF Act (Code no. to be mentioned) and submit the copy of registration certificate and should possess the same from the date of commencement of work, failing which the contract is liable to be cancelled. The E.C. Policy copy should be submitted to the GIPCL before commencement of the work and Labor License should be obtained within one week from the date of issue of form-V. Contractor should apply for Form-V immediately after receipt of LOI. A copy of Labour License shall be submitted to GIPCL, HR & A Department.
6. Contractor shall have to insure his workmen /supervisors etc. under Group Insurance scheme.
7. The Contractor shall be responsible for compliance of all statutory rules, regulation, act enforced from time framed by the government such as Factory Act, Employee

Compensation Act, payment of ‘Wages Act’, Minimum Wages Act’, Provident Fund Act, All Labor Laws Act in respect of employees engaged by him for the work and shall have to maintain necessary records. In case any amount becomes due to be payable by him to his employees or to the Government under the above rules, regulation, Acts, GIPCL reserves the right to recover the same from the running bill of the contract.

8. Documentary evidence of deposit of PF paid shall have to be produced by the contractor along with the next bill.
9. Records as per the provisions of various statutory Acts will have to be maintained by the contractor and submitted as and when required.
10. All employees of contractor should maintain due discipline and respect local sentiments. GIPCL reserves the right to direct the contractor to remove any such person who does not comply with it.

The list is indicative in nature and not an exhaustive one. Any amendment/alteration/Notifications or addition to the existing Law or a new statute shall automatically and immediately become applicable.

#### **b. LEGAL ASPECTS**

1. Contractor shall maintain all register required under the Labour Laws and make the payment as per the Minimum Wages Act to the workers employed by him.
2. Contractor shall obtain requisite license to carry out this contract under the provisions of Contract Labour Act, 1970 and maintain necessary records and registers under the said Act.
3. Contractor shall submit a copy of each of the registration certificates with respect to Employees Provident Fund and Employee Compensation Act within one week time, from the date of award of this contract.
4. Contractor’s employees, agent or sub-agent shall not smoke or light anything within the premises of the GIPCL and carry match box / lighter or any other explosive and /or inflammable material inside the plant.
5. Contractor shall abide by all the statutory rules and regulations like P.F, Labour Laws etc.
6. Contractor shall issue an appointment order to each casual labourer stating therein the nature of job to be performed by him and fix time for which the concerned labourers are likely to be deployed. Contractor shall also issue a temporary identity card specifying the period for which the labourer has been deployed.
7. Contractor is fully liable for the persons engaged by him for above work; however, GIPCL reserves the right to deduct any amount legally justified towards any liability not fulfilled.
8. Contractor shall indemnify GIPCL from any liabilities arising out of the employment of the manpower.
9. If the contractor fails to complete the allocated job within specified time frame, GIPCL shall get the work done by third party at the risk and cost of contractor.

#### **11. PAYMENT OF WAGES**

Contractor shall be responsible for compliance of all statutory rules, regulation, act enforced from time framed by the government such as Factory Act, Employee Compensation Act, payment of ‘Wages Act’, Minimum Wages Act’, Provident Fund Act, Payment of Bonus Act, Labor Law Act, maternity benefit act in respect of employees engaged by him for the work and shall have to maintain necessary

records. In case any amount becomes due to be payable by him to his employees or to the Government under the above rules, regulation, Acts.

**12. ACCIDENT TO WORKMEN**

Contractor shall be fully responsible for injury or death of any of your or third party workmen due to any act omission / indiscretion on your part while undertaking the work and contractor shall fully abide by the statutory requirements of the employee's compensation act. GIPCL shall not be liable for any compensation due to accident, death or injury to any of contractor's workmen or any third party due to negligence, act or omission on your part.

**13. LIGHTING**

General area lighting will be provided by GIPCL. However, work area specific lighting should be arranged by contractor.

**14. NIGHT/SUNDAY/HOLIDAY SHIFT**

The contractor shall depute qualified and adequate resources in night shift/Sunday/holidays for any emergency job, which may come up at night/Sunday/holiday.

**15. SAFETY ASPECT**

Contractor shall observe all the safety and security rules and regulation of the GIPCL which are at present in force and which may come into force during the pendency of the contract. Any violation of any rules and regulations will entail immediate termination of the contract.

When contractor moves his lifting tools and tackles to the plant area, required test certificates as per the Factory Act 1948 and the state factories rules has to be submitted to safety Deptt. Safety Deptt. will check the certificates and if found okay, then only materials will be allowed to enter inside the plant. Material inward gate pass will be made only after certification from Safety Deptt. Security Deptt. will inform to Safety Deptt., as & when such tools and tackles brought at the gate for making entry in the maintenance site.

The contractor has to submit the list of required safety gears along with safety equipments available with him to safety Deptt. Safety Deptt will check for quantity and quality of the safety gears and then allowed permission of work. Poor quality material will not be allowed to take inside the Plant. If quantity of required safety equipments is not satisfactory, contractor will not be allowed to carry out the work using such safety gears inside the Plant for the work.

**16. GENERAL SAFETY CLAUSES :**

1. The Contractor shall observe and comply, with regard to his workmen working at the SLPP site, the safety norms as per the safety operating standards.
2. The Contractor shall ensure that his workmen are informed and trained regarding the safety standards to be adopted while operating within the SLPP Plant & Mines

- premises and the Contractor shall brief them regarding the same and use of the Personal Protective Equipment ('PPE').
3. The Contractor shall issue safety shoes and safety helmet of IS standard to all his workmen immediately on execution of the work and the contractor shall ensure that his workmen wears the protective equipments at all times during the work operation. Brand name for safety shoe & safety helmet shall be suggested by safety representative of SLPP site.
  4. Other safety gears like ear plug, dust mask, hand gloves, safety goggles, gum boots, full body safety uniform and belts, safety net etc. shall be issued and used as per the job requirements. Safety helmet shall be of YELLOW COLOUR ONLY. Contractor will procure safety shoes & safety helmet from a reputed company with at least 12 months' guarantee and shall produce the guarantee certificate and IS standard certificate to the safety department. Contractor should purchase safety shoes of reputed brands. Safety shoes will be issued every year. IS certificate and guarantee certificate must be obtained from the vendor and submitted to the Safety department. Safety shoes should be heat, water, oil and chemical resistant, having an anti-slippery sole of 15298- 2002 make.
  5. It is the duty of contractor to ensure that his workmen are wearing required PPEs as per work requirement. Contractor should ensure that their workers are wearing Safety helmet, safety shoes, dust mask, goggles, ear plug etc. at all times when they are at work throughout the contract period. The contractor has to maintain the PPE issue registers with signature of workmen.
  6. Contractor will reissue these PPEs in case of damage or misplacement of the same. Replacement shall be made immediately.
  7. The contractor shall be responsible for providing first aid or emergency medical help and treatment to his workmen in the event of any accident or injury.
  8. If it is observed that contractor is not issuing required PPEs timely and that of required quality, GIPCL will issue the required PPEs to contract workers and back charge the same with 25% overhead charges of GIPCL.
  9. All lifting tools and tackles shall be duly certified by competent person in conformity with the statutory requirements and certificate in form no. 10 as per rule 60 of Gujarat Factories Rules, 1963 and section 29 of the Factories Act, 1948 shall be submitted every year before using such tools and tackles. In case of purchase of new lifting tools and tackles, form no. 10 as per the said rules shall be submitted before they are taken into use. All lifting tools and tackles shall be of reputed make having International manufacturing standard and shall be maintained in proper and workable condition.
  10. The Contractor shall nominate one Safety Officer with required qualification for supervising the daily job/ shutdown jobs for observing and maintaining the safety aspects at site. He is solely responsible for any safety measures during maintenance work. He has to ensure that all the workmen working at site are equipped with essential PPE's and proper safety arrangement is made at the SLPP site.
  11. After mobilization of any tools & tackles to site, which includes chain pulley blocks, D-shackles, wire ropes, winch machines, Mobile crane, Hydra etc. shall be offered for inspection with all above statutory test certificate before using at site for any work. They should use all tools and tackles only after certification by GIPCL representative/safety officer.
  12. When working at height, working on ceiling or roof covered with fragile materials, full body harness safety belt, ladders and crawling boards, fall arrester, etc. shall be used to prevent accident. Further, during working on height, contractor should arrange proper scaffolding of still pipes, safety net, full body safety belt, fall arrestor system etc. Advice and instructions of engineer in charge/ safety in charge shall be strictly

- complied with in this regard. All necessary safety precautions shall be taken by the contractor to prevent accident and personnel injuries while working on height.
13. Flash back arrestors made of reputed manufacturer shall be provided on cutting torch, on DA cylinders and on O2 cylinder. Cylinder caps also required for handling the cylinders at the work at height area. Gas cylinders shall be transferred through gas cylinder trolley only with cylinder cap and stored up right (vertical) position only. All gas cylinders shall be hydro tested / certified as per gas cylinder rules 2004. Gas cylinders shall be stored, handled as per gas cylinder rules 2004.
  14. All vehicles shall be operated by licensed drivers only. All vehicles' PUC to be tested as per Government approved RTO guidelines. All Vehicles must be parked in Parking space designated by GIPCL. If any vehicle is found inside the plant premises other than the parking area such vehicles shall be handed over to Security dept. and their entry shall be cancelled for movement inside the plant premises with immediate effect.
  15. All electrical equipment shall be in good condition and free from any defect. Electrical tools & equipments i.e. welding machine, grinding and drill machine etc. may be checked by the electrical engineer of the contractors regularly, every six month at least and report to be submitted to concerned HOD and safety depts.
  16. During hot work, contractor will use fire curtains like asbestos sheets or fire blankets to prevent falling and spreading of sparks and hot material on and around the work area. Contractor will procure and use such items. ELCB / RCCB shall be provided with rating of 9-30 milli amperes on welding machine and all portable power tools.
  17. The contractor shall fill – up Incident notification form (S-I), Incident Investigation form (S-II) and near miss report within time limit as specified in forms, if any accident, Incident, near miss occurred while working at SLPP site.
  18. Major AMC / ARC contractor (Where the man power strength is more than 50 and above) should appoint / nominate one qualified safety officer and he shall be responsible for addressing all the safety related aspects of execution of contract jobs and he will in close co ordination with safety officer of SLPP and attend all safety related meeting such as safety committee, on job safety training etc. Where the contractual man power is less than 50, the site in charge of the contractor will act as a safety officer and he will perform all the duties of safety officer as mentioned above.
  19. No loose connection / joints allowed in electrical cables during performance of any kind of job.
  20. Safety shoes to be issued to female employees also.
  21. All the vehicles shall be fit as per RTO guidelines and valid fitness certificate is required as per RTO guidelines.
  22. The Contractor's nominated safety officer shall be imparted regular on-job safety training like tool-box talk etc. and submit a record of such training in safety dept, respective dept and HR&A dept.
  23. The Contractor shall comply all the new requirements related with safety as informed by the HOD / Safety department from time to time.
  24. Penalty to be imposed for Violation of safety norms is proposed as follows:-  
The Contractor & Contract workmen shall strictly adhere to Safety standards / Guidelines as per practices. The list provided below is an indicative list to explain the principles behind safety practice. If the contract workmen fail to comply with safety standards as per category A, B & C below, penalty shall be levied on the contractor as per the table mentioned below:



Category	Classification	Examples / Cases	Penalty
A	PPEs Related	Working without helmet, shoes, safety belt, gloves etc.	Rs. 100 /- per instant.
B	WI Related	Failure to adhere to HSE guidelines/plans, careless attitude in material handling, Machine being used with damaged machine guard, unsafe electrical work - workout plug top/improper electrical joints/cables lying on ground, electrical equipment working without proper earthing, machine being used without machine guard, Welding machine without ELCB / RCCB of proper rating, Gas cylinder without test certificate, Cylinder cap, NRV / Flash back arrester, Cylinder trolley etc.	<ul style="list-style-type: none"> <li>Rs. 500 /- per instant.</li> <li>After three incidence, Per incidence Rs. 2500/-</li> <li>Continuous unsafe acts will disqualify the contractor from further participation in tender of GIPCL-SLPP.</li> </ul>
		Unsafe working practices at height more than 3 meters	
		Working without permit or non-compliance with permit conditions like hot work, height work etc. as applicable, lifting tools and tackles being used without third party inspection certificates in form no. 9/10 as per Factory Act – 1948 etc..	
C	Unsafe Practices	Breach of safe practices by a particular person repeatedly for three times.	<p>Suspend the entry gate pass for one week.</p> <p><input type="checkbox"/> After two suspensions his gate pass will be cancelled.</p>

Penalty so levied against the contractors and company employees will be used during the observation of National Safety Day.

**The contractor, workmen following good safety practices in their work area continuously will be rewarded / honored on National safety day.**

**17. REJECTION OF WORK:**

If, as a result of inspection, examination or testing, the GIPCL's Representative/Engineer decides that any materials, work or workmanship is defective or otherwise not in accordance with the Contract, the GIPCL/Engineer/ GIPCL's Representative may reject such plant, materials, work or workmanship and shall notify the CONTRACTOR promptly, stating his reasons. The CONTRACTOR shall then promptly make good the defect and ensure that the rejected item complies with the Contract. If Contractor failed to rectify the rejected work or workmanship, GIPCL/Engineer reserves the right to deduct or withhold amount against rejected work or Workmanship. CONTRACTOR shall not entitle for any claim or release of hold payment until rectify the defect up to satisfactory of GIPCL. If Contractor failed to rectify any such defective work or workmanship, GIPCL reserve the right to rectify at risk and cost of the CONTRACTOR and deducted by the GIPCL from any amount due, or to become due, to the CONTRACTOR's dues.

If the GIPCL/Engineer/GIPCL's Representative requires such materials, work or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If such rejection and retesting cause the GIPCL additional costs for the traveling and lodging costs of GIPCL/Engineer's personal for attending the retest, such costs shall be recoverable from the CONTRACTOR by the GIPCL and may be deducted by the GIPCL from any amount due, or to become due, to the CONTRACTOR.

**18. GENERAL TERMS AND CONDITIONS:**

1. All materials, tools & tackles, equipments, machineries, labours, etc... required to execute the contract are in the scope of the contractor. The contractor should ensure that tools & equipments are in healthy condition.
2. Contractor should be able to arrange required resources in case of emergencies within 08 hrs.
3. If any equipments or part are found damaged due to negligent of the contractor, the cost of such damages shall be recovered from the contractors bill/retention money/security deposit.
4. The contractor shall have to submit daily reports showing work carried out.
5. Contractor shall depute one full time Resident Engineer and one site supervisor at site. They shall co-ordinate with GIPCL engineer and shall bear overall responsibility of contract including receiving instructions, requirements, issue of material, joint measurement, billing etc. Such person shall function from site office of contractor at SLPP.
6. The decision of the Engineer-in-charge shall be final and binding on the contractor for defining the terms and condition included in this contract.

7. Engineer-in-charge or his authorized representative may do inspection of work at any time. If the work is not found satisfactory, Engineer-in-charge reserves the right to take suitable action.
8. The time schedule given is the standard time required for respective activities of work, as mentioned.
9. Contractor shall not be eligible for any compensation for demobilization and remobilization.
10. In case your firm is registered under the Micro, Small and Medium Enterprises Development Act, 2006, please enclose a copy of the registration certificate issued by the concerned Govt. department along with Part-1 of the bid.
11. Arrangement for lighting at the work spot has to be made by the contractor. He has to arrange all lighting equipments such as power cable, hand lamps etc. The contractor has to take prior approval for taking electrical power supply.
12. The contractor has to do quality job and maintain our quality control plan as per mentioned in Volume II (Technical specification). GIPCL shall not compromise in quality. In case of poor quality of work the contractor may be asked to rework the job at their cost.
13. The contractor has to take group insurance policy for their workmen. The contractor has to submit labour license and PF account number to the Engineer-in-charge before start the work.
14. One or more jobs may be required to be done simultaneously and contractor shall mobilize additional resources accordingly.
15. Contractor shall mobilize the resources as per need within the period of 08 hours. If the contractor fails to mobilize sufficient resources to complete the job in time, GIPCL will execute the job through other agency at the risk and cost of the contractor.
16. Contractor must fulfill all the safety regulations and to take safety measures to avoid hazards. Contractor has to arrange sufficient standard safety helmets (Yellow colour only), safety shoes, dust masks, ear plugs etc. and same shall be issued to his workers. All the workers, Supervisors of Contractors are required to wear above safety gears during working in Plant premises or outside plant. Contractor has to ensure that their workers are using the provided safety gears. It is also to be confirmed that the provided safety equipments are in good condition, and if not, the same shall be replaced immediately. If the contractor repeatedly violates safety rules/regulations, Engineer-in-charge may take necessary action against the contractor.
17. **Defect liability period:** The defect liability period shall be 01 (One) year from the date of virtual completion of work as certified by Engineer-in-charge. During defect liability period, if any defect arises in jobs which have been already executed, shall be rectified by the contractor free of cost.
18. To carry out any extra items other than the listed in work order shall be executed by the contractor only after written instruction from Engineer-in-charge. The rate of extra item shall be finalized before carrying out the work considering 10% overhead & profit of contractor over expenditure.
19. The total contract price/ unit rate quoted will remain same during the period of contract. No escalation whatsoever shall be permitted.
20. Price and rates quoted, shall include cost of all consumables, Material, labour, supervision, tools and tackles, machineries, equipments, transport, taxes including VAT, octroi, (except service tax, if applicable), local taxes and levies if any etc. and any such other costs as are not specifically mentioned herein, but may be incurred by the contractor for the satisfactory and timely completion of the work.

21. Contractor should mobilize all resources for efficient & smooth execution of contract within 07 days from the date of issue of Letter of Intent.
22. Wherever any dispute regarding mode of measurement arise, the decision of the Engineer in-charge shall be final and binding to you.
23. All the scrap generated should be disposed off to the scrap yard or any other designated place as instructed by Engineer-in-charge for which no separate payment will be made by GIPCL.
24. Contractor must fulfill all the safety regulations and to take safety measures to avoid hazards. Contractor shall arrange all standard adequate healthy safety PPEs like but not limited to approved quality safety shoes& safety helmets, standard dust masks, safety goggles, etc... as required and shall use exclusively under this contract for all the time during working at specified locations failing which, the Engineer-in-charge may hold the work and will take necessary action including penalty as decided. If the contractor repeatedly violates safety rules/regulations (more than three successive incidents), Engineer-in-charge may take necessary action against the contractor, including appropriate financial penalty (Maximum of Rs. 1,000/- per incident per man-day and as per above clause no. 16) and/or termination of contract.
25. One or more jobs may be required to be done simultaneously and contractor shall mobilize additional resources accordingly.
26. Timely completion of all jobs and works shall be the essence of this Contract. Contractor should closely monitor each activities and complete the jobs as per the time given by and under the supervision of the Engineer-In-charge and shall ensure that sufficient manpower is deployed for the same.
27. The contractor has to complete the works as per the planning schedule and their respective supervisor has to interact with Engineer-In-Charge for PTW (Permit to work), work instruction, Return of permit.
28. The contractor has to submit daily reports showing work carried out with details of available manpower, tractors etc.
29. Any job other than the listed jobs in work order shall be executed by the contractor on instruction from GIPCL and payment shall be made to the contractor on respective item rate only.
30. The Government of India has enacted the Micro, Small and Medium Enterprises Development Act, 2006 (the “Act”) and the Act has come into force from October 2, 2006. The Bidder shall confirm whether your organization is registered under the Micro, Small and Medium Enterprises Development Act, 2006. If your organization is registered under the Act, please specify the category i.e., Micro Enterprise, Small Enterprise or Medium Enterprise under which it is registered and kindly attach a copy of your registration certificate.
31. The Bidder shall provide details of registration along with copy of the registration certificate issued by the District Industries Centre/Department of Industries, etc of the respective State Government. It is to be noted that large scale industries and trading firms have been excluded from the purview of the Act.
32. GIPCL is an ISO 9001, ISO 14001, OHSAS 18001 & ISO 50001:2011 (EnMS) certified company, and GIPCL gives extreme importance to maintain these global standards. Contractor shall be required to observe these standards while working with GIPCL. Contractor should ensure that his workmen/labour work in accordance with them.

**19. CONTRACTOR’S SUPERVISION**

The contractor shall, during the whole time the work is in progress, employ a qualified experienced site-in-charge of the works with adequate experience in handing of jobs of this nature and with the prior approval of the GIPCL / ENGINEER. Such in-charge shall be constantly in attendance at the site during working hours. During CONTRACTOR'S supervisory engineer absence during working hours, if unavoidable, and also beyond working hours, when it may be necessary to give directions, orders may be given by the ENGINEER / GIPCL and shall be received and obeyed by the CONTRACTOR'S superintendent or Foreman who may have charge of the particular part of the work in reference to which orders are given. If requested to do so, the ENGINEER /GIPCL shall confirm such orders in writing. Any directions, instructions or notices given by the ENGINEER / GIPCL to him, shall be deemed to have been given to the CONTRACTOR. The representative of the CONTRACTOR shall have all necessary powers to receive materials from the GIPCL, issue valid receipts for the same, engage labour or purchase materials and proceed with the work as required for speedy execution.

None of the CONTRACTOR'S Superintendents, engineers, supervisors or labour should be withdrawn from the work without due notice being given to the GIPCL / ENGINEER; further no such withdrawals shall be made if in the opinion of the GIPCL / ENGINEER such withdrawals will jeopardize the required pace of progress / successful completion of the work.

The CONTRACTOR shall employ in or about execution of the work only such persons as area careful, skilled and experienced in their respective trades, and the GIPCL shall be at liberty to object to and require the CONTRACTOR to remove any person employed by the CONTRACTOR in or about execution of works who in the opinion of the ENGINEER misconducts himself or is incompetent or negligent in the proper performance of his duties and all such persons shall not again be employed upon the works without the prior permission of the GIPCL.

Neither the CONTRACTOR and the PURCHASER nor the ENGINEER shall hire or employ any employee of the other party except by mutual consent.

**20. CONTRACTOR TO REMOVE ALL OFFENSIVE MATTER IMMEDIATELY AND CLEAN-UP.**

All loose materials, wastage, packing materials, cut pieces or other matter of an offensive nature shall not be deposited on the surface, but shall at once be carted away by the CONTRACTOR to some pit or place provided by him away from the site of work and approved by local authorities.

As a part of the work included in this contract, the CONTRACTOR shall completely remove and satisfactorily dispose of all temporary works to the extent directed. He shall tear down and dispose of all temporary works, shall remove or grade, to the extent directed, all plant and equipment, shall satisfactorily dispose off all rubbish resulting from the operations under this contract and shall do all work necessary to restore the territory embraced within the site of his operations to at least as good order and conditions as at the beginning of the work under this contract.

**21. FACILITIES TO BE PROVIDED BY GIPCL**

**A.** The Company shall provide the following facilities to the Contractor at the site:

- a. Workshop facility as available at site only. However contractor may visit the workshop to ensure the existing facility. For the facilities other than available, contractor has to carry out the job outside at their own cost.
- b. First aid facilities as available on chargeable basis.

Apart from the above, no other facilities shall be provided by GIPCL.

**B.** GIPCL shall also conduct an orientation program appraising the workmen regarding the safety norms and measures to be observed during work operations at the site.

**22. WORK MEASUREMENT/CERTIFICATION**

- a. The work to be performed being a specialized nature, the contractor should be fully conversant with modern practices and should be able to carry out works independently of bituminous road work. The contractor shall therefore be required to engage qualified/ experienced personnel to undertake the work as per specifications and requirement.
- b. Contractor should maintain one computer with printer for keeping daily records and maintain the data.
- c. The Contractor shall be required to furnish satisfactory job completion report to GIPCL. The submission of report should be on daily basis, the monthly bill payment shall be released based on the certified reports of the works.
- d. Inspection of work will be done by Engineer in Charge or his authorised representative. If the work is not found satisfactory engineer in charge reserves the right to take suitable action and shall be binding to the contractor.

**23. PUBLIC HOLIDAYS**

The Contractor shall be responsible for giving benefit to all his employees, employed in whatsoever capacity, 09 Public/Paid holidays and the same shall be notified in advance and due communication thereof shall be made to the Management.

**24. FORCE MAJEURE**

The performance of the obligations herein contemplated may be suspended without incurring the penalty in the event of the subsistence of Force Majeure conditions.

If a Force Majeure situation arises, the affected Party shall promptly notify the other Party in writing of such conditions and the performance shall be suspended as per mutual agreement.

For the purposes of this clause, ‘Force Majeure’ means an event beyond the control of the Party and not foreseeable by the Party and shall include events of floods, explosions, riots, wars, hurricane, epidemics, any other Act of God, quarantine

restrictions, terrorism, government actions and provided always that such acts result in the impossibility of the further performance of the contract.

**25. INDEMNITY**

The Contractor shall indemnify and keep harmless GIPCL from and against all actions, proceedings, claims, demands, losses, costs, damages and expenses whatsoever which may be brought against or suffered by GIPCL which it may sustain, pay or incur as a result of or in connection with the performance/ purported performance/ non-performance of the contract by the Contractor.

In case, in any litigation pertaining to labour employed through contractor if any direction or order is issued by court at any point of time the contractor shall comply with and implement such direction or order whether passed at the time of award of contract or during the pendency of contract. Further, the Contractor shall indemnify the GIPCL against all consequences arising and affecting GIPCL owing to the compliance of the orders by the Contractor.

**26. GOVERNING LAW AND JURISDICTION**

This tender document and contract shall be governed by the laws of India and the Courts at Surat shall have jurisdiction regarding the same.

- 27.** Where any portion of the General Condition of Contract is repugnant to or at variance with any provisions of the Special Condition of Contract, then unless a different intention appears, the provision of the Special Conditions of Contract shall prevail to the extent of such repugnancy of variance.

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## **SECTION-D SPECIAL CONDITIONS OF CONTRACT**

### **1. DETAIL SCOPE OF WORK FOR BITUMINOUS WORK**

The scope of work covered by this specification, in general, comprises the general civil works for Repairing of bituminous lignite transport road i.e. Box cutting as per requirement, cleaning and disposal of debris/dust, WMM, BSG, Bituminous macadam, Bituminous concrete and asphalt painting at Surat Lignite Power Plant-GIPCL, at & Post: Nani Naroli, Taluka: Mangrol, Dist.: Surat. Scope of civil works covered under this specification includes in general excavation of box cutting, cleaning and disposal of waste materials, debris/dust etc., providing & laying 200mm thick WMM with watering, leveling and rolling, Applying primer with bitumen emulsion on wet mix surface, providing and laying 75 mm thick BSG on wet mix surface, providing and laying of 50mm thick B.M. and 25mm to 30mm thick bituminous concrete, asphalt painting as per detailed item nomenclature, technical specification and approved sketch/drawings. Repairing of road shall including repairing of pot holes, damages, wearing of surface, cracks on road surface, settlement of road etc. The scope of work shall also includes diversion of existing traffic (Lignite dumpers) safely by providing necessary sign boards, making alternate arrange for movement, making working area safe by proving barrier etc complete as directed by Engineer-in charge.

Scope of work includes providing, supplying and laying of all materials, safe storage of materials, wastage, labour, supervision, shifting, transportation, loading, unloading, plant and equipment, machinery, wastage of materials, all consumables such as, but not limited to fuel, lubricants, petrol, oil, diesel, all required tools & tackles, all leads & lifts, etc.. and all necessary auxiliary works not specified herein but which is required to carry out for satisfactory and timely completion of entire scope of work as specified and as directed by Engineer-in-charge.

The Bidder shall carry out Wet Mix Macadam work with wet mix plant of having 60-80 TPH capacity within lead of 50 Kms from work site.

The Bidder shall carry out BSG, B.M. and B.C. with drum mix plant of having 80-120 TPH capacity within lead of 50 Kms from work site.

The bidder must have to mobilized and make own arrangement for WMM batching plant, drum mix plant of 80-120 TPH capacity, sensor paver machine of required width, Vibro roller minimum 10 tone capacity, water tanker, grader machine, air compressor machine, dumpers, bitumen spreader and other required tools and tackles for the quality and timely completion of work

### **1.2 Prior to award of contract**

- 1.2.1.0 The bidder shall understand scope of work, specifications and standard etc. attached to the tender / enquiry document, before he makes an offer.
- 1.2.1.1 The bidder shall submit milestone chart showing the time required for each milestone activity and linkages between different milestone activities along with over all time period required to complete the entire scope of work.

- 1.2.1.2 The bidder shall develop and submit manpower and resource deployment chart.
- 1.2.1.3 The bidder shall submit, along with the bid, manual of equivalent document describing / indication / addressing various control / check points for the purpose of quality assurance and the responsibilities of various functions responsible for quality assurance.
- 1.2.1.4 The bidder shall submit, along with the bid, list of equipment and machinery deployment for said work.

### **1.3 After the award of contract:**

Prior to start the work, the contractor shall get approval of the samples of each and every material, which will be the part of work as a whole from GIPCL. Such materials are like, but not limited to Bitumen (60/70 grade of IOCL/approved), aggregates of required size.

Various documents submitted by the bidder shall be finalized in consultation with Company. Here, it shall be presumed that once a bidder has made an offer, he has understood the requirements given in this specification and agrees to comply with them in totality unless otherwise categorically so indicated during pre-award stage through agreed deviation / exception request.

### **1.4 During job execution:**

- 1.4.1 During job execution, the bidder shall fully comply with all quality requirements of this specification and contractor has to maintain quality control plan mentioned in Volume II (Technical specification).
- 1.4.2 Bidder shall produce sufficient quality records on controlled / agreed forms such that requirements given in this specification are objectively demonstrable.
- 1.4.3 Bidder shall facilitate Company during quality / technical audits at his works / sites.
- 1.4.4 Bidder shall discharge all responsibilities towards enforcement of this specification on all his sub-contractors for any part of the scope which is sub-contracted.
- 1.4.5 Bidder shall mobilize sufficient resources and equipment like but not limited to wet mix plant and Drum Mix Plant of capacity 60/80 TPH with all essential component as per direction of M.O.T.S. issued vide letter no. RW/24011/3/2000 dtd, & no. RW/24011/3/2000 (P1) 14/12/2000, Vibro roller minimum 10 ton capacity, Water Tanker, Automatic sensor paver, Motor grader, Compressor air machine, JCB, dumpers, tractors, Mechanical bitumen sprayer, Bitumen tanker with burner facility, DG sets etc. for timely completion of work.

1.4.6 Bidder shall arrange to take levels with dumpy level or theodolite or total station of existing ground level and each layer of road construction & Level register shall be maintained, if necessary.

1.4.7 Contractor shall use materials as approved by COMPANY for road works and submit test certificates for aggregates, bitumen, and bitumen emulsion used for the work time to time. Quality of material shall be tested on site or in authentic laboratory as directed by Engineer In Charge.

## **1.5 SITE CLEANING**

1.5.0 The contractor shall clean and keep clean the work site from time to time to the satisfaction of the Engineer-in-charge for easy access to work site and to ensure safe passage, movement and working.

1.5.2 The contractor shall be the custodian of the wastage materials till the engineer-in-charge takes charge thereof.

**1.6** Work covered under this specification includes in general all civil construction works required for the work as per the items prepared by GIPCL inclusive of material, labour, supervision, tools & tackles, consumables, transportation, loading, unloading, storage, equipments etc... as directed by Engineer-in-charge.

**1.7** Some of the important items of work covered are as listed below:-  
Contractor shall adopt all safety measures / provide necessary protection to work place / structures irrespective of the sequence of work planning.

The scope of work is deemed to include all other items of work not specifically mentioned above, but indicated in the schedule of quantities and other auxiliary works which are necessary for the completion of the contract work as a whole. However payment will be made for certified measurements against item nomenclature in Schedule of Quantity at the accepted rates.

It is not the intent to specify completely herein, all details of works covered under this enquiry. All works shall conform in all respects to high standards of engineering, design and workmanship and shall fulfill the anticipated performance during the CONTRACTOR's guarantee period in a manner acceptable to the COMPANY who shall have the power to reject any works or materials which in his judgment are not in full accordance with the specification requirements. In case of any conflict regarding the interpretation of the intent or meaning of the specifications or drawings, COMPANY shall interpret such intent or meaning, which will be final and binding on the CONTRACTOR.

**1.8** Contractor shall rectify and make good any defective work or replace with new one if required during the defects liability period as specified in the Conditions of Contract.

**1.9** The Contractor / Bidder shall have to attend meetings at Company's office or any other place as fixed by COMPANY / ENGINEER as and when required for review, discussions, coordination etc...

**1.10** The GIPCL reserves the right to increase or decrease or delete scope of this specification by adding / omitting any item of work as deemed necessary at the time of allotment of work and / or during the course of execution of work.

**1.11** The scope also includes cost of all materials, transporting the same to the site, unloading, storing them in the contractor's own covered storage area in a neat and systematic manner and providing necessary fencing and security to ensure the proper utilization of such material exclusively for this contract.  
from Engineer-in-charge along with final bill.

## **1.6 SCOPE OF CONTRACTOR**

1. All tools & tackles, tractors, required vehicles to execute the contract will be in the scope of the contractor. The contractor should ensure for healthiness/working conditions of tools, tackles & vehicles.
2. All consumable items like bituminous, primer, aggregate, dust powder, cotton waste, kerosene, gas, diesel, lubricants, etc will be in the scope of the contractor.
3. All safety/PPEs required during work at site are to be arranged by the contractor.
4. The Contractor shall have to provide necessary facilities including accommodation for their labour at their own cost.
5. The contractor has to arrange transportation for lifting/shifting the materials at their own.
6. Contractor has to depute their full time experienced site-in-charge & supervisors for work execution as per specification and for day to day work planning & coordination with respective department's Engineer-in-charge, to obtain day to day work permits, to get daily supervision, to record joint work done reports/measurements/trip certification, to prepare bills, to prepare & apply manpower gate pass, to maintain statutory & legal compliance records, etc...

## **1.7 TO REMEDY DEFECTIVE WORK**

If the work or any portion thereof shall be damaged in any way excepting by the acts of the GIPCL, or if defects not readily detected by proper inspection shall develop before the final completion and acceptance of the whole work, the CONTRACTOR shall forthwith make good, without compensation, such damage or defects in a manner satisfactory to the ENGINEER / GIPCL. In no case shall defective or imperfect work be retained even if contractor followed all technical specifications. GIPCL will not compromise for quality of materials, works & workmanship.

The CONTRACTOR shall remain liable under the provisions of this clause notwithstanding the passing by the GIPCL of any certificate, final or otherwise or the passing of any accounts.

## **1.8 DAILY DIARY AND PROGRESS REPORT**

A daily diary register will be kept in the ENGINEER'S office. The CONTRACTOR will supply all detailed information every day at 9:00 hours for the day preceding and the diary will be jointly signed by the ENGINEER and the CONTRACTOR'S representatives, every day in token of its correctness. A works instruction book, serially numbered will also be kept in the ENGINEER'S office and all day to day instructions will be given in that book. The CONTRACTOR'S representative shall report every day to see these instructions and sign them at the bottom in token of his having seen them.

The CONTRACTOR shall supply all information regarding procurement of materials and progress of work, as is required by the ENGINEER for compiling the weekly progress reports. This information shall be supplied by 9:00 hours on every Monday, for the preceding week.

## **2. PRICE & RATES**

This is SoR based contract and final item rates will be derived by applying contractor's quoted percentage rate on GIPCL's provided SoR item rate of respective package. The item rates so derived shall be inclusive of cost of all approved bituminous, aggregate, grit, stone dust, etc and other required materials, consumables, safe storage of materials, wastage, operators ,helpers, labour, supervision, cost of safety supervisor, shifting, transportation, loading, unloading, equipment, all tools & tackles, safety equipments & PPEs, Royalties, Rents, Excise duty, Sales Tax, Stamp Duties, Central or State Government or Local body or Municipal Taxes or Duties, Turn over Tax, Work Contract Tax, VAT, Octroi duty and / or any other duty / tax (excluding Service Tax), levied by the Central, State Government or other Public bodies etc...and such other costs that are not specifically mentioned herein but will be incurred by the contractor for the satisfactory and timely completion of the work. The item rates shall be deemed to include for everything mentioned in the specification, all leads & lifts, contractor's overheads & profits for due performance of the work under this contract and such other costs that are not specifically mentioned herein but will be incurred by the contractor for the satisfactory and timely completion of the work. The rates shall also include cost for mobilization / demobilization of manpower, equipments, materials, etc...

The rates shall be firm for entire contract period and also during extension, if required and shall not be subject to any escalation in prices, idle charges for labour, machinery, overhead expenses etc. No price escalation / idle charges shall be due to any reason whatsoever.

The prices / item rates quoted by Bidder shall remain firm till completion of the contract period and any agreed extensions thereafter and shall not be subject to any other escalation, idle charges for labour, machinery, overhead expenses etc. No price escalation / idle charges shall be payable due to delay in work by contractor or due to non-availability of work front by GIPCL or any reason whatsoever.

The price/rate quoted by CONTRACTOR shall be considering mobilization of all required manpower, tools & tackles, materials, equipment for timely and satisfactory completion of all scope of work.

The value and/or quantum of work may be increased or decreased depending upon day to day requirement. However, item rates remains unchanged and the payment shall be made as per the actual quantity executed as informed & certified by GIPCL representatives.

### **3. CONTRACT PERIOD**

Contract period will be 02 (Two months) from the date of commencement (mobilization period will be 15 days from the date of issue of Lol or Work Order whichever earlier) or from the date of commencement as mentioned in work order.

### **4. TERMS OF PAYMENT**

#### **A. Conditions of Payment:**

The contractor shall raise running invoices in duplicate (one original in physical form and soft copy in MS Excel format as directed by Engineer-in-charge) every month in respect of the work performed or completed during the month along with the documents as provided hereinafter. On receipt of the invoice complete in all respects and with all the said documents, the payment in respect of the same shall be made within 21 days of such receipt of a complete invoice as per the following terms of payment:

- (i) 100% of monthly RA bill along with 100% taxes shall be released against the work executed duly certified by GIPCL. Income Tax (IT) will be deducted at source from monthly RA bills as per the rules in force.
- (ii) Security deposit at 10% of annual contract value shall be submitted as per clause no.: 1 of Section-C. Security deposit will be returned to the Contractor without any interest after retention period of twelve months from actual contract completion date as certified by Engineer-in-charge as per clause no.: 1 of Section-C.
- (iii) Service tax shall be paid along with bills after fulfillment of following terms.
  - (a) Submission of copy of registration certificate issued by Service Tax Authority (to be furnished only once).
  - (b) Citing the service Tax Registration no. And the date of issue of registration certificate on invoices.
  - (c) Claim of Service Tax amount with percentage (%) separately shown on the invoices.
  - (d) The contractor shall be required to submit the proof of payment of service tax of previous month/quarter, as may be applicable as & when demanded by GIPCL/Owner/company.
  - (e) The Bidder shall inform the Owner in the event of its registration certificate is cancelled or discontinued for whatsoever reason.
- (iv) At the time of submission of monthly RA Bill, the Contractor shall submit test certificate of materials used during work as per quality control plan and GIPCL weigh mat slips of incoming bituminous dumpers. The Contractor shall also furnish the checklist as per **ANNEXURE-A** enclosed with the Section-F of tender document along with the RA bill of respective month.

- (v) The contractor along with monthly RA Bill shall submit copy of P.F. Challan, Photo copies of wages register of previous month, photocopies of attendance sheet of respective month & copy of ECR statement indicating the employee and employer's P.F contribution of previous month with respect of employees employed by him for the contract at GIPCL site.
- (vi) The Contractor shall submit his Final Bill within a period of three months of the expiration or earlier termination of the contract or any extensions that may be granted by GIPCL to the Contractor. GIPCL shall not entertain any bill for any work item after expiration of period of three months.
- (vii) The Contractor shall include all his claims in the Final Bill submitted by him and accordingly the final bill submitted by the Contractor shall be deemed to be inclusive of all and whatsoever the claims that the Contractor may have from GIPCL. The Contractor shall not be entitled to claim any amounts which are not mentioned in the Final Bill and the Contractor shall be deemed to have waived any claims not mentioned in the Final Bill and shall not be entitled to recover the same from GIPCL subsequent to the submission of the Final Bill on any account and GIPCL shall stand absolved of all its liabilities in respect of any such claims not raised by the Contractor in his Final Bill.

#### **B. Validity and Uniformity of Rates**

The rates shall be valid for a entire contract period and shall remain unaltered during the Contract Period.

### **5. SUBMISSION OF TECHNICAL DOCUMENTS TO THE ENGR-IN-CHARGE**

Contractor shall submit following documents to the Engineer-in-charge for verification purpose of the bill:-

- (i) **Measurement sheet along with joint record of work done in the form of joint record/ level sheet/ weigh mat slip of incoming bituminous dumpers report** duly signed by authorized representative of contractor and GIPCL Engineer.

The bill will not be entertained without submission of above documents.

### **6. SUBMISSION OF STATUTORY COMPLIANCES WITH EACH BILL**

Contractor shall submit each RA bill of work carried out along with following documents.

- (i) Copy of statutory compliance like labour license, wages payment register, EC Policy, PF paid Challan with ECR, etc... along wage certificate pertaining to respective bill period.
- (ii) Notarized Indemnity Bond in case of Final bill.
- (iii) No claim - No arbitration certificate as per Performa (Annexure-D), after releasing final bill payment.

Bill submitted without any of the above documents shall not be processed for payment.

## **7. MEASUREMENT & DAILY REPORTS**

The quantities specified in Section-E are only estimated quantities for tendering purpose only. Payment will be made, based on actual work done, as measured at site and certified by Engineer-in-charge of GIPCL as per mode of measurement.

Quantities of individual items may be revised during the course of contract period based on the requirement or any other unavoidable circumstances .... Contractor shall have no any right for any compensation on ground of such alteration in scope of work. GIPCL reserves the right to operate or decrease quantities in each item or omit any item included in Schedule of Rate in Section-E at his discretion. Contractor shall have no claim, whatsoever, on grounds of loss of anticipated profit etc. on account of the same.

The payment of scope of work done by contractor shall be made at unit rate quoted in the bid for respective items at the actual executed quantity as jointly measured at site with contractor & GIPCL Engineer-in-charge. However, contractor shall be responsible to restrict the scope of work up to specified quantities. In any case, GIPCL will not pay extra quantity due to any reason except if advance written approval taken by the contractor from GIPCL to execute extra quantity.

The contractor shall be required to furnish satisfactory job completion report and joint record of measurement to GIPCL. In the bill, payment shall be released based on the joint measurement record of the works.

Wherever any dispute regarding mode of measurement arise, the decision of the Engineer-in-charge shall be final and binding to the contractor.

The contractor shall deploy their sufficient full time supervisors & overall site-in-charge for day to day monitoring, to check the quality of work regularly and to get the work done certification from concerned GIPCL's representatives on daily basis. Various activities related to work shall be submitted by contractor with proper planning and schedule of bar chart and shall be carried out as per the planning mentioned by GIPCL.

The work is of specialized nature and the contractor should be fully conversant with modern practices and should be able to carry out bituminous work as per morth specification and also as per technical specification mentioned in Volume II. The contractor shall therefore be required to engage qualified / experienced personnel.

## **8. MOBILIZATION AND EXECUTION**

- a) Contractor shall mobilize the resources at site within 07 days from the time of intimation given by GIPCL.
- b) Contractor shall provide sufficient nos. of supervisors who will be responsible for supervision and execution of job in specified time. The supervisors shall coordinate with the Engineer-in-charge of GIPCL for proper execution of the job.
- c) The resources required for execution of above jobs will vary from time to time, hence contractor shall mobilize the resources accordingly.



**9. QUANTITY OF WORK**

The estimated quantities of work required to be carried out by the contractor are as given in the Section-E (Schedule of Rate) estimated and shall vary according to the exigencies of work at site. However, the rates quoted by Bidder shall remain firm irrespective of any variation in estimated quantities. Contractors shall engage required nos. of labors along with required tools & tackles as per work load and emergency situations throughout the contract period to perform his contractual duties.

In case, contract quantity/amount exhausted before completion of contract period, GIPCL reserve the rights to increase the quantities or contract amount for successful completion of entire contract period. Contractor shall responsible to complete the particular job up to entire satisfaction of Engineer-in-charge. The item rates remain firm & unchanged till completion of the contract and any agreed extensions thereafter and shall not be subject to any escalation, idle charges for labor, machinery, overhead expenses etc... for any reason whatsoever. The quantum of work of individual item may be up to any extent depending upon requirement. However, item rate remains unchanged. Under this contract, contractor has to execute all work as per the Plant requirement.

**10. GENERAL CONDITIONS OF CONTRACT**

General Conditions of Contract (Section-C) and detail specification prepared by the company will be applicable for this contract. The same is enclosed herewith. Bidders are advised to go through the same.

Where any portion of the general conditions of contract is repugnant to or at variance with any provisions of the special conditions of contract, then unless a different intention appears, the provision of the special conditions of contract shall prevail to the extent of such repugnancy of variance.

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## SECTION-E SCHEDULE OF RATE

**Name of work:** Surat Lignite Power Plant: 4 x 125 MW, Unit # I to IV – Repairing of lignite transport bituminous road from shah bridge to apron feeder.

Item No	Item Description	Quantity	Unit	Rate	Amount
1	Earthwork in excavation below ground level for box cutting of road in all type of soil and also dismantling the existing bituminous road as the case may be and including the disposal of debris/excavated stuff out side plant premises, dressing of the sides and bottom, stacking of useful materials as required, levelling and dressing and compacting the surface, including disposal lead up to 1.0 Km etc. complete as directed by Engr	175	M3	65.50	11462.50
2	Preparing and cleaning of sub grade for roads by removing the soil, dust, ash, lignite layer etc on existing WBM, WMM or Bituminous surface using JCB and fine cleaning using manually by wire brush as well as with air compressor machine and disposal within lead of 01 Kms etc. complete as directed by Engineer-in charge.	2500	M2	11	27500
3	Filling of fly ash at average thickness of 300 mm for road and side shoulders including spreading, laid to proper camber and gradient not more than 300 mm depth, watering, consolidation, dressing and leveling, etc. complete as directed by Engineer in Charge. (Fly ash of required quantity shall be available from silo free of cost but transportation, loading, unloading shall be in contractor's scope). The fly ash filling shall be compacted in layer wise (not more than 300mm in each layer) with water flooding using water tanker.	50	M3	200	10000

Item No	Item Description	Quantity	Unit	Rate	Amount
4	Providing, Laying, spreading and compacting graded stone aggregate to wet mix macadam (WMM) in two layers not more than 100mm thick each layer for required depth (Compacted thickness) in box cutting of road as per detailed specification, premixing the material with water at OMC (Optimum Moisture Content) in mechanical mix plant carriage of suitable mixed material by tipper to site, laying in uniform layers in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per clause 406 and as directed by Engineer in charge.	150	M3	726	108900
5	Providing and applying hincol made or equivalent grade primer coat with emulsion SS-1 as directed by Engineer In charge on prepared surface of granular base with low porosity WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means with pressure distributor and as per relevant clause of Section-500 and as directed by Engineer In Charge.	600	M2	21.10	12660
6	Providing and laying 75 mm average consolidated thick , built up spray grout with Drum mix Plant 80 to 120 TPH capacity producing an average output of 75 tonnes per hour using 45 mm to 65 mm downgraded black trap aggregates (Proportion shall be as decided by Engr in charge), premixed with bituminous binder @ 2.50% by weight of total mix of mix and filler including applying tack coat over WMM surface at rate of 0.50 kg/m2, including mixing by Drum mix plant as case may be, transporting required hot material at site, spreading, laying & leveling the mix with paver at the specified line, level and camber, rolling with 10	100	MT	1760	176000

Item No	Item Description	Quantity	Unit	Rate	Amount
	tonne vibro roller and using 0.13 cum. of key aggregate per 10 sq. mtr. and also including cleaning of WMM surface etc complete all as per detailed technical specifications and as directed by Engineer-in-charge.				
7	Providing & Laying 37.50mm consolidated thick dense bitumen premix carpet using 20mm and 10mm downgraded black trap aggregates (Proportion shall be decided by Engineer-in charge) and using bitumen 60/70 grade as binder at 56 kg/m <sup>3</sup> of aggregates (3.70% bitumen by weight of total mix of mix) including applying tack coat over semi grouting surface at rate of 0.50 kg/m <sup>2</sup> , including mixing by Drum mix plant, transporting, spreading and leveling by paver at the specified line, level and camber, rolling with heavy duty vibro roller and also cleaning of surface using brush etc complete all as per detailed technical specifications and as directed by Engineer-in-charge etc.	400	MT	2245	898000
8	Providing & laying average 25mm to 30mm consolidated thick bituminous concrete using black trap crushed stone aggregates as per required gradation and the 60/70 VG-30 grade asphalt at 5.50% of mix and filler by total weight of mix of mix hot laid process using drum mix plant including heating and mixing asphalt & materials by drum mix process, transporting the mix and laying by paver finisher including consolidation with vibratory roller as per morth specification clause no. 509, etc... all complete as per specifications and instructions of Engineer-in-charge.	300	MT	2782	834600

Item No	Item Description	Quantity	Unit	Rate	Amount
9	Asphalt Painting with applying evenly TACK COAT on road surface with bitumen 60/70 grade @ 7.5 Kg per 10 M2 including heating the asphalt and spraying the same then spreading approved sand over the treated surfaces at the rate of 0.5 M3 per 100 M2 and also cleaning of surface using brush & disposal of dust/waste outside the premises etc... all as per specifications and instruction of Engineer-in-charge.	3000	M2	32	96000
10	Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes all complete as per Technical specifications of MORTH Clause no. 803 for Lane, centre line, edge, directional arrows and letters, etc. as directed by the Engineer-in-charge.	500	M2	296	148000
<b>Total Rs.=</b>					<b>23,23,122</b>



## 2.0 **ANNEXURE-B**

### **PROFORMA OF BANK GUARANTEE FOR ORDER PERFORMANCE**

#### **(To be Stamped in accordance with Stamp Act)**

Ref: .....

Bank Guarantee No.....

Date .....

Bank Guarantee Cover period from ..... to .....

To  
M/s. GUJARAT INDUSTRIES POWER COMPANY LTD.  
At & Post Nani Naroli  
Taluka Mangrol  
Dist. Surat  
Gujarat-394 110.

Dear Sir,

In consideration of the Gujarat Industries Power Company Limited (hereinafter referred to as the Purchaser which expression shall unless repugnant to the context/or meaning thereof include its successors, administrators, and assigns) having awarded to M/s.....having its Registered Office/Principal Office at ..... (address) ..... (hereinafter referred to as the "CONTRACTOR" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators, executors and assigns) a Order by issue of Purchaser's Letter of Intent No.....dated.....and same having been unequivocally accepted by the CONTRACTOR dated .....valued at .....for (scope of order) .....and the contractor having agreed to provide a Order Performance Guarantee for the faithful performance of the entire order including for the quality of the materials and/or workmanship, successful commissioning and satisfactory performance of the equipments/system and satisfactory services rendered during the guarantee/warranty period of ..... Months under the said LOI/Order equivalent to.....\*..... (Percent) of the said value of the order to the purchaser

(Name & address of Bank) .....

having its Head Office at ..... (hereinafter referred to as the "Bank" which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors, assigns) do hereby irrevocably guarantee and undertake to pay the Purchaser, on written demand any and all moneys payable by the CONTRACTOR to the extent of (in figures) ..... (in words) ..... as aforesaid at any time up to (days/months/year)

\*\*..... without any demur, reservations, contest, recourse or protest and/or without any reference to the CONTRACTOR. Any such demand made by the Purchaser on the bank shall be conclusive and binding notwithstanding any difference between the Purchaser and CONTRACTOR of any dispute pending before any Court, Tribunal, Arbitrator or any other Authority.

....2

(2)

It shall be conclusive and enough for enforcement of the BANK GUARANTEE on the bank if GUJARAT INDUSTRIES POWER COMPANY LIMITED invokes the BANK GUARANTEE stating only that the default has been committed by the contractor, thus far and no further. The bank undertakes not to revoke this guarantee during its currency without previous written consent of the purchaser and continue to be enforceable till the Purchaser discharges this guarantee.

The Purchaser shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee from time to time to extend the time for performance of the Order by the CONTRACTOR. The Purchaser shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the CONTRACTOR, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied in the Order between the Purchaser and the CONTRACTOR or any other course of or remedy or security available to the Purchaser. The Bank shall not be released of its obligations under these presents by any exercise by the Purchaser of its liberty with reference to the matter aforesaid or any of them or by reason or any other acts of omission or commission on the part of the Purchaser or any other indulgence shown by the Purchaser or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Bank. The Bank also agrees that the Purchaser at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the CONTRACTOR and notwithstanding any security or other guarantee that the Purchaser may have in relation to the CONTRACTOR's liabilities.

Notwithstanding anything contained herein above our liability under this Guarantee is restricted to Rs..... and it shall remain in force up to the including .....unless a written demand to enforce any claim under this Guarantee is lodged with us before expiry date, the Bank will be discharged from its liabilities under this Guarantee. This Guarantee shall be extended from time to time for such period or period as may be desired by the ..... on whose behalf this guarantee has been given.

Dates this.....day of .....20.....  
at .....

.....  
Signature

Banker's rubber stamp:

Name

Designation with  
Bank stamp:

Attorney as per power of  
Attorney No.

Dated



### 3.0 **ANNEXURE-C**

#### **PROFORMA FOR BANK GUARANTEE FOR EMD**

**(To be stamped in accordance with Stamp Act)**

Ref .....

Bank Guarantee No.....

Date .....

Guarantee cover period: From .....To .....

To  
M/s. Gujarat Industries Power Company Limited  
At & Post – Nani Naroli  
Taluka: Mangrol  
Dist.Surat-394 110

Dear Sirs,

In accordance with your “Invitation for Bids” under your Specification No.....Dated.....  
M/s..... having its  
Registered/Head office at.....  
(Herein after called the Bidder) wish to participate in the said Bid for .....

As an irrevocable bank Guarantee against Bid guarantee for an amount of Rs..... valid for one (1) year from ..... is required to be submitted by the Bidder as a condition precedent for participation in the said Bid, which amount is liable to be forfeited on the happening of any contingencies mentioned in the Bid Documents.

We, the ..... Bank at ....., having  
our Head Office at (local address)  
..... Guarantee and undertake  
to pay immediately on written demand by Gujarat Industries Power Company Limited  
(hereinafter called the “Purchaser”)  
(In figures) ..... (In words)  
..... without any reservation, protest, demur and recourse.  
Any such demand made by said “Purchaser” shall be conclusive and binding on us  
irrespective of any dispute or difference raised by the Bidder. It shall be conclusive and  
enough for enforcement of Bank Guarantee on the Bank if Purchaser invokes the Bank  
Guarantee stating only that the default has been committed by the Bidder, thus far and no  
further.

Contd....2

(2)

This Guarantee shall be irrevocable and shall remain valid up to ..... if any further extension of this guarantee is required, the same shall be extended to such required period on receiving instructions from ..... on whose behalf the guarantee is issued.

In witness there of Bank, through its authorized Officer, has set its hand and stamp on this ..... day of .....20 ..... at .....

.....  
(Signature)

.....  
(Name)

Designation with Bank

Stamp:

Attorney as per Power of  
Attorney No.

Dated .....

#### 4.0 **ANNEXURE-D**

**PERFORMA CERTIFICATE**  
(No claim, No arbitration)

To,  
General Manager (Mines)  
Gujarat Industries Power Company Limited,  
Surat Lignite Power Plant,  
Village: Nani Naroli, Ta. Mangrol,  
Dist. Surat – 394110 (Gujarat).

Dear Sir,

**Subject:**\_\_\_\_\_

**Ref:** Work Order No.:\_\_\_\_\_ **Dated**\_\_\_\_\_

We hereby confirm with free consent as under:-

1. The measurements certified in final bill is full and final. We accept all the certified measurements and no claim related to the measurement is left.
2. The payment certified in that or above referred Lol / contract is full and final. We accept this, and no claim related to payment is left.
3. The rates of the Lol / contract and its amendments are firm till completion of contract and extension period. We shall not claim any escalation against these rates.
4. Along with the contract referred, the ARBITRATION CLAUSE also perishes i.e. we will not resort to arbitration.
5. No extra items are left to be settled.
6. We do not have any claims against any item related to the Lol than those items certified in the bills.
7. We are accepting the recoveries or hold amount from our bills, if any, made by GIPCL against non compliance or as decided by GIPCL within terms & conditions of contract.
8. We have paid royalties, taxes for all the materials procured by us, for carrying out the works for above Lol and we indemnify GIPCL from any liability arising thereof.
9. In case of any disputes arising in future related to payment of royalties, all liabilities of settlement of dispute and its payment if any, will be borne by us.
10. We have paid wages to all the workmen who were deployed by us for carrying out above referred work as per prevailing Minimum wages act. We have also fulfilled all requirements of the P.F. Act. We have maintained all records necessary as per the statutory requirements. We hereby indemnify GIPCL from any disputes arising in future related to payment of labours, Provident Fund, etc.. and confirm that all liabilities of settlements of disputes and their payment is our responsibility.

The above confirmation will come into effect as soon as payment from final bill after due recoveries will be received by us.

For, M/S.\_\_\_\_\_

Signature, Stamp and date.

## 5.0 **ANNEXURE-E**

### **LIST OF REQUIRED MINIMUM EQUIPMENTS, TOOLS & TACKLES**

Sr. No.	Description	Quantity
1.	Drum Mix Plant of 80-120 t/hr capacity	1 no.
2.	Plant for WMM 60-80 TPH	1 no.
3.	Vibro Road roller minimum 10 Ton capacity	1 no.
4.	Automatic sensor paver	1 no.
5.	Auto level or theodolite or total station with staff	1 set
6.	Truck Mounted Water tanker of 12000 liters capacity	1 no.
7.	Bitumen tanker with burner facility	1 no.
8.	Mechanical Bitumen sprayer	1 no.
8.	Dumpers	10 nos.
9.	Motor Grader	1 no.
10.	JCB	1 no.
11.	Compressed air machine	1 no.
12.	DG sets	1 no.

#### **NOTE:-**

The Contractor shall note that above list is not exhaustive and if any additional tools & tackles or equipment, machinery etc., are required for proper performance of the contract, the contractor shall also arrange the same immediately without any extra cost to GIPCL. Above equipments shall be in good condition for execution of work, equipments older more than 10 years and running not properly shall not be allowed to work on site.

## **TECHNICAL SPECIFICATION**

**Name of work: Repairing of lignite transport bituminous road from shah bridge to apron feeder.**

### **Earth Work in Excavation**

Earthwork in excavation below ground level for box cutting of road in all type of soil and also dismantling the existing bituminous road as the case may be and including the disposal of debris/excavated stuff out side plant premises, dressing of the sides and bottom, stacking of useful materials as required, levelling and dressing and compacting the surface, including disposal lead up to 1.0 Km etc. complete as directed by Engr.

#### **General:**

Excavation shall be carried out in any type of soil including soft rock for sub grade of road or dismantling existing bituminous surface in required shape and size as box cutting for patch repair of road. Cutting for road shall be of correct size, shape and correct side slope and gradient as per drawing/road profile chart in proper line, level and gradient at the site as directed by Engineer In Charge.

#### **Clearing The Site:**

The site on which the structure is to be built shall be cleared, and all obstructions, loose stone, materials and rubbish of all kind, bush, wood and trees shall be removed as directed. The materials so obtained shall be the property of the GIPCL and shall be conveyed and stacked as directed up to 1.00 km lead. The roots of the trees coming in the sides shall be cut and coated with hot asphalt.

The rate of site clearance is deemed to be included in the rate of earthwork for which no extra amount will be paid.

#### **Excavation:**

Earthwork in excavation in all kinds of soil including soft rock for road in required shape and size, pipe/cable, area grading, etc including excavation below existing ground level at any depth for road of correct size, shape and correct side slope and gradient as per drawing in proper line, level and gradient at the site as directed by Engineer in charge .The site shall be left clean of all debris on completion. The excavation shall be carried out in correct line, level & profile of the Road. After completion of excavation up to required level, contractor have to compact excavated surface using water sprinkling and vibro roller before starting bituminous work on road. Rate for excavation is included all such operations. The payment shall be done considering the average thickness of excavation calculated based on level records or as per road profile provided by Site In charge or jointly measurement on site. No additional payment shall be made for excavation thickness more than specified.

#### **Disposal of Excavated Materials:**

The excavated earth shall be disposal / stacking of surplus excavated soil within radius of 1.0 kms including loading, un loading transporting, dozing, leveling and making suitable approach road as required etc complete. No materials excavated from the road or drain edge, of whatever kind they may be, are to be placed even temporarily up to 1.5 Mts. or at the distance prescribed by the Engineer, from the outer edge of excavation. All materials excavated shall remain the property of the GIPCL. Rate of excavation shall include sorting out of useful materials and stacking them separately as directed within the specified lead. Materials suitable and useful for back filling or other use shall be stacked in convenient places but not in such a way as to obstruct free movement of men, animals and vehicles or encroach upon the area required for constructional purposes.

**Mode Of Measurement And Payment:**

All excavation shall be measured net dimensions for purpose of payment shall be reckoned on the horizontal area of the excavation at the base considering road dimension required for particular patch repair in accordance with the Site In charge. Excavation in side slopes and working space will not be paid for. No over-excavation below required level given in road profile chart or drawing will be permitted. In such cases over-excavation shall be made good by the Contractor with fly ash or of the same class as for road and side drain and no payment shall be made for the same. Depth of excavation is to be measured from existing ground level. No additional *payment shall be made for excavation thickness more than specified.*

No extra payment shall be made for temporary pumping of water/sewage due to abnormal adverse conditions/climate. Sub soil water may envisage during execution of work. Rates shall deem to be included in rates.

The Plan area of road shall be measured for its length, breadth and depth as per level sheet (Difference between levels of OGL & bottom of excavation done at site) or jointly measured with Engineer In charge, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one cubic meter and including backfilling with available soil, if require.

**Providing & Laying WMM**

Providing, Laying, spreading and compacting graded stone aggregate to wet mix macadam (WMM) in two layers not more than 100mm thick each layer for required depth (Compacted thickness) in box cutting of road as per detailed specification, premixing the material with water at OMC (Optimum Moisture Content) in mechanical mix plant carriage of suitable mixed material by tipper to site, laying in uniform layers in sub- base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per clause 406 and as directed by Engineer in charge.

**Scope**

This work shall consist of laying and compacting clean, crushed, graded aggregate and granular material, premixed with water, to a dense mass on a prepared sub grade/sub-base/base or existing pavement as the case may be in accordance with the requirements of these Specifications. The material shall be laid in one or more layers as necessary to lines, grades and cross-sections shown on the approved drawings or as direction by the Engineer.

The thickness of a single compacted Wet Mix Macadam layer shall be 150 mm or 200mm thick as per requirement on site. When vibrating or other approved types of compacting equipment are used, the compacted depth of a single layer of the sub-base course shall be approved by Engineer and joint record shall be taken on site for verifying thickness of wet mix layer for patch work.

## Materials

### Aggregates

**Physical requirements:** Coarse aggregates shall be crushed stone. If crushed gravel/shingle is used, not less than 90 percent by weight of the gravel/shingle pieces retained on 4.75 mm sieve shall have at least two fractured faces. The aggregates shall conform to the physical requirements set forth in Table 1 below.

TABLE 1

PHYSICAL REQUIREMENTS OF COARSE AGGREGATES FOR WET MIX  
MACADAM FOR SUB-BASE/BASE COURSES

Test	Test Method	Requirements
* Los Angeles abrasion value or * Aggregate Impact value	IS : 2386 (Part-4)  IS : 2386 (Part-4) or IS : 5640	40 per cent (Max.)  30 per cent (Max.)
Combined Flakiness and Elongation indices (Total)	IS : 2386 (Part-1)	30 per cent (Max.)**

\* Aggregate may satisfy requirements of either of the two tests.

\*\* To determine this combined proportion, the flaky stone from a representative sample should first be separated out. Flakiness index is weight of flaky stone metal divided by weight of stone sample. Only the elongated particles be separated out from the remaining (non-flaky) stone metal. Elongation index is weight of elongated particles divided by total non-flaky particles. The value of flakiness index and elongation index so found are added up.

If the water absorption value of the coarse aggregate is greater than 2 per cent, the soundness test shall be carried out on the material delivered to site as per IS : 2386 (Part- 5).

**Grading requirements:** The aggregates shall conform to the grading given in Table 2

**TABLE 2**  
**GRADING REQUIREMENTS OF AGGREGATES FOR WET MIX MACADAM**

IS Sieve Designation	Per cent by weight passing the IS sieve
53.00 mm	100
45.00 mm	95-100
26.50 mm	-
22.40 mm	60-80
11.20 mm	40-60
4.75 mm	25-40
2.36 mm	15-30
600.00 micron	8-22
750.00 micron	0-8

Materials finer than 425 micron shall have Plasticity Index (PI) not exceeding 6.

The final gradation approved within these limits shall be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve or vice versa.

### **Construction Operations**

**Preparation of base:** Clause 404.3.1 of MORTH shall apply.

**Provision of lateral confinement of aggregates:** While constructing wet mix macadam, arrangement shall be made for the lateral confinement of wet mix. This shall be done by laying materials in adjoining shoulders along with that of wet mix macadam layer and following the sequence of operations described in Clause 407.4.1.

**Preparation of mix:** Wet Mix Macadam shall be prepared in an approved mixing plant of suitable capacity having provision for controlled addition of water and forced/positive mixing arrangement like pug mill or pan type mixer of concrete batching plant. For small quantity of wet mix work, the Engineer may permit the mixing to be done in concrete mixers.

Optimum moisture for mixing shall be determined in accordance with IS : 2720 (Part-8) after replacing the aggregate fraction retained on 22.4 mm sieve with material of 4.75 mm to 22.4 mm size. While adding water, due allowance should be made for evaporation losses. However, at the time of compaction, water in the wet mix should not vary from the optimum value by more than agreed limits. The mixed material should be uniformly wet and no segregation should be permitted.

**Spreading of mix:** Immediately after mixing, the aggregates shall be spread uniformly and evenly upon the prepared sub grade/sub-base/base in required quantities. In no case



should these be dumped in heaps directly on the area where these are to be nor shall their hauling over a partly completed stretch be permitted.

The mix may be spread either by a Paver finisher or motor grader. For portions where mechanical means cannot be used, manual means as approved by the Engineer shall be used. The motor grader shall be capable of spreading the material uniformly all over the surface. Its blade shall have hydraulic control suitable for initial adjustments and maintaining the same so as to achieve the specified slope and grade.

The Paver finisher shall be self-propelled, having the following features:

- (i) Loading hoppers and suitable distribution mechanism
- (ii) The screed shall have tamping and vibrating arrangement for initial compaction to the layer as it is spread without rutting or otherwise marring the surface profile.
- (iii) The Paver shall be equipped with necessary control mechanism so as to ensure that the finished surface is free from surface blemishes.

The surface of the aggregate shall be carefully checked with templates and all high or low spots remedied by removing or adding aggregate as may be required. The layer may be tested by depth blocks during construction. No segregation of layer and fine particles should be allowed. The aggregates as spread should be of uniform gradation with no pockets of fine materials.

**Compaction:** After the mix has been laid to the required thickness, grade and cross fall/camber the same shall be uniformly compacted, to the full depth with suitable roller. If the thickness of single compacted layer does not exceed 150 mm, smooth wheel roller of minimum 100 kN weight may be used. For a compacted single layer up to 150 mm, the compaction shall be done with the help of vibratory roller of minimum static weight of minimum 100 KN or equivalent capacity roller. The speed of the roller shall not exceed 5 km/h.

In portions having unidirectional cross fall/super elevation, rolling shall commence from the lower edge and progress gradually towards the upper edge. Thereafter, roller should progress parallel to the centre line of the road, uniformly over-lapping each preceding track by at least one third width until the entire surface has been rolled. Alternate trips of the roller shall be terminated in stops at least 1 m away from any preceding stop.

In portions in camber, rolling should begin at the edge with the roller running forward and backward until the edges have been firmly compacted. The roller shall then progress gradually towards the centre parallel to the centre line of the road uniformly overlapping each of the preceding track by at least one-third width until the entire surface has been rolled.

Any displacement occurring as a result of reversing of the direction of a roller or from any other cause shall be corrected at once as specified and/or removed and made good.

Along forms, kerbs, walls or other places not accessible to the roller, the mixture shall be thoroughly compacted with mechanical tampers or a plate compactor. Skin patching of an area without scarifying the surface to permit proper bonding of the added material shall not be permitted.

Rolling should not be done when the sub grade is soft or yielding or when it causes a wave-like motion in the sub-base/base course or sub grade. If irregularities develop

during rolling which exceed 12 mm when tested with a 3 meter straight edge, the surface should be loosened and premixed material added or removed as required before rolling again so as to achieve a uniform surface conforming to the desired grade and cross fall. In no case should the use of unmixed material be permitted to make up the depressions.

Rolling shall be continued till the density achieved is at least 98 per cent of the maximum dry density for the material as determined by the method outlined in IS : 2720 (Part-8).

After completion, the surface of any finished layer shall be well-closed, free from movement under compaction equipment or any compaction planes, ridges, cracks and loose material. All loose, segregated or otherwise defective areas shall be made good to the full thickness of the layer and re-compacted.

**Setting and drying:** After final compaction of wet mix macadam course, the road shall be allowed to dry for 24 hours.

#### **Opening to Traffic**

Preferably no vehicular traffic of any kind should be allowed on the finished wet mix macadam surface till it has dried and the wearing course laid.

#### **Surface Finish and Quality Control of Work**

**Surface evenness:** The surface finish of construction shall conform to the requirements of Clause 902 of MORTH.

**Quality control:** Control on the quality of materials and works shall exercised by the Engineer in accordance with Section 900 of MORTH.

#### **Rectification of Surface Irregularity**

Where the surface irregularity of the wet mix macadam course exceeds the permissible tolerances or where the course is otherwise defective due to sub grade soil getting mixed with the aggregates, the full thickness of the layer shall be scarified over the affected area, reshaped with added premixed material or removed and replaced with fresh premixed material as applicable and re compacted in accordance with Clause 406.3. The area treated in the aforesaid manner shall not be less than 5 m long and 2 m wide. In no case shall depressions be filled up with unmixed and ungraded material or fines.

#### **Arrangement for Traffic**

During the period of construction, arrangement of traffic shall be done as per Clause 112 of MORTH.

#### **Measurements for Payment**

Wet mix macadam shall be measured as finished work in position in cubic meters considering average 200mm thickness of WMM as per requirement on site. Levels shall be taken for Top of WMM after dressing and leveling the bottom surface of excavation. The required average thickness of WMM shall be verified based on difference between top of

WBM & bottom of excavation. The payment shall be done considering the average thickness of WMM calculated based on level records or jointly measured on site. *No additional payment shall be made for thickness more than required (i.e. 200 mm average) laid on site.*

## **Rates**

The Contract unit rate for WMM sub-base/base course shall be measured in cubic meter. The width of the WMM shall be as per drawing for actual length of Road. The thickness of WMM shall be calculated based on level record or jointly measured on site. The Contract unit rate for wet mix macadam shall be payment in full for carrying out the required operations including full compensation for all components listed in Clause 401.8 of MORTH.

## **Applying Primer coat**

Providing and applying hincol made or equivalent grade primer coat with emulsion SS-1 as directed by Engineer In charge on prepared surface of granular base with low porosity WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means with pressure distributor and as per relevant clause of Section-500 and as directed by Engineer In Charge.

## **PRIME COAT OVER GRANULAR BASE**

### **Scope**

This work shall consist of application of single coat of low viscosity liquid bituminous material to an absorbent granular surface preparatory to any superimposed bituminous treatment or construction.

### **Materials**

The choice of a bituminous primer shall depend upon the porosity characteristics of the surface to be primed as classified in IRC : 16. These are:

- (i) Surfaces of low porosity; such as wet mix macadam and water bound macadam,,
- (ii) Surfaces of medium porosity; such as cement stabilized soil base,
- (iii) Surfaces of high porosity; such as a gravel base .

The different ranges of viscosity requirements for the primers to be used for the different types of surfaces to be primed as classified in Table 3.

**TABLE 3.**

### **VISCOSITY REQUIREMENT AND QUANTITY OF BITUMINOUS PRIMER**

<b>Type of surface</b>	<b>Kinematic Viscosity of Primer at 60° C(Centistokes)</b>	<b>Quantity per 10 sq. m(kg)</b>
Low porosity	30-60	6 to 9
Medium porosity	70-140	9 to 12
High porosity	250-500	12 to 15

Unless otherwise specified prime coat shall be applied as 0.6 Kg/m<sup>2</sup> The bituminous primer shall be Medium Curing Cutback (MC) produced by fluxing, in an approved manner, bitumen of 80/100 penetration grade with kerosene. The cutback shall be free from water and shall not show any signs of separation prior to use. Slow setting Cationic emulsion as per IS: 8887 may also be used, but the particular grade to be used for the work shall be got approved by the Engineer.

Sampling and testing of bituminous primer shall be as per IS: 217; IS: 454 and IS : 8887.

#### **Weather and Seasonal Limitations**

The bituminous primer shall not be applied on a wet surface or during dust storm or when the weather is foggy, rainy or windy. The prime coat for surface treatment should not be applied when the temperature in the shade is less than 10°C.

#### **Construction**

**Equipment:** The primer distributor shall be pneumatic tyred self-propelled pressure distributor equipped for spraying the material uniformly at the specified rates and temperatures. Spraying by manual methods may be allowed for small areas at the discretion of the Engineer. Power broom and/or blowers may be supplemented by hand brooms as directed by the Engineer.

**Preparation of road surface:** The surface to be primed shall be swept clean, free from dust and shall be dry. It shall be shaped to the specified grades and section. It shall also be free from ruts, any other irregularities and segregated materials. Minor depressions and potholes may be ignored until the surface is primed, after which they shall be patched with a suitable premix material prior to the surface treatment.

**Application of bituminous primer:** The bituminous primer shall be sprayed/distributed uniformly over the dry surface, prepared as per Clause 3.2 of MORTH using self-propelled sprayer equipped with self-heating arrangement, suitable pump, adequate capacity compressor and spraying bar with nozzles having constant volume or pressure system capable of supplying primer at specified rates and temperatures so as to provide a uniformly unbroken spread of primer. If the surface to be primed is so dry or dusty as to cause freckling of bituminous material, it shall be lightly and uniformly sprinkled with water immediately prior to priming; however, the bituminous material shall not be applied till such time as no surface water is visible. The primer shall be applied at the rate as specified in clause 3.3 of MORTH.

Temperature of application of a primer need only be high enough to permit the primer to be effectively sprayed through the jets of the spray bar and to cover the granular base surface uniformly in the desired quantity.

During this period no traffic of any kind shall be permitted.

**Laying of bituminous course over primed surface:** Bituminous base course or wearing course shall be laid over the primed water bound macadam, wet mix macadam or any other granular base course, in the usual manner as per relevant Specification for the same including the requirement of tack coat as per Item No.6

#### **Quality Control of Work**

Control on the quality of materials and work shall be exercised by the Engineer in accordance with Section 900 of MORTH.

#### **Arrangement for Traffic**

During the construction operations, arrangement of traffic shall be done as per Clause 112 of MORTH.

### **Measurements for Payment**

Prime coat shall be measured in terms of surface area of application in square meters. For verification weight of empty tanker and weight of loaded tanker will be checked in weighbridge.

Company will be free to get some loaded tankers test checked at other weigh bridge. Weighbridge will be periodically got calibrated and verified from weight and measure authorities.

### **Rate**

The contract unit rate for prime coat shall be payment in full for carrying out the required operations like cleaning with wire brushes, brooming, collecting unwanted and removal of same including full compensation for all components listed in Clause 401.8 (i) to (v) and applying bituminous as applicable to the work specified in these Specifications

### **Providing & Laying built up spray grout**

Providing and laying 75 mm average consolidated thick, built up spray grout with Drum mix Plant 80 to 120 TPH capacity producing an average output of 75 tonnes per hour using 45 mm to 65 mm downgraded black trap aggregates (Proportion shall be as decided by Engr in charge), premixed with bituminous binder @ 2.50% by weight of total mix of mix and filler including applying tack coat over WMM surface at rate of 0.50 kg/m<sup>2</sup>, including mixing by Drum mix plant as case may be, transporting required hot material at site, spreading, laying & leveling the mix with paver at the specified line, level and camber, rolling with 10 tonne vibro roller and using 0.13 cum. of key aggregate per 10 sq. mtr. and also including cleaning of WMM surface etc complete all as per detailed technical specifications and as directed by Engineer-in-charge.

### **Description**

This work shall consist of a single layer composite construction of compacted crushed coarse aggregates with application of bituminous binder for layer including key aggregates accordance with requirements of these specification and in conformity with the lines grades and cross sections shown on the drawing or as directed by Engineer-in-Charge.

### **Materials**

#### **Binder**

The binder shall be straight run bitumen of a suitable grade, as directed by the Engineer-in-charge, satisfying the requirements of IS :73 or an approved cutback.

#### **Aggregates**

The aggregates shall consist of crushed stone. They shall be clean, strong, durable of fairly cubical shape and free of disintegrated pieces, organic or other deleterious matter and adherent coatings. The aggregates shall preferably be hydrophobic and of low porosity.

The aggregates shall satisfy the physical requirements set forth in Table 4

**TABLE - 4**

**PHYSICAL REQUIREMENT OF AGGREGATES FOR BITUMINOUS SPRAY GROUT**

Sr. No.	Test	Test Method	Requirements
[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]
1.	Los Angles Abrasion Value *	IS:2386 (Part-IV)	35% Maximum
2.	Aggregates Impact value *	- do -	30% Maximum
3.	Flakiness Index	IS:2386 (Part-I)	35% Maximum
4.	Stripping Value	IS : 6241	25% Maximum
5.	Water Absorption	IS:2386 (Part-III)	2% Maximum

Except that the upper for Los Angles abrasion value and aggregate Impact Value shall be 50 and 40 respectively. The coarse and key aggregate for built up spray grout shall confirm to the grading given in Table 6.

**TABLE - 5**

**GRADING REQUIREMENT OF COARSE SAND KEY AGGREGATE FOR BUILT UP SPRAY GROUT**

Sieve Designation	Percentage by weight passing the sieve	
	Coarse Aggregate	Key Aggregates
[ 1 ]	[ 2 ]	[ 3 ]
53.0 mm.	100	-
26.5 mm	40-75	-
22.4 mm	-	100
13.2 mm	00-20	40-75
5.6 mm	-	00-20
2.8 mm	0-5	0-5

**Proportioning of Materials**

The bituminous (60-70 grade) binder content for premixing shall be @ 2.5 percent by weight of the total mix, except when otherwise directed by the Engineer-in-charge. For manually laid BSG in two layers after tack coat first layer of aggregate plus binder 15kg/10m<sup>2</sup> and second layer consists of aggregate plus binder 20kg/m<sup>2</sup>.

The quantity of aggregates shall be sufficient to yield the specified thickness after compaction.

The contractor shall get the job mix formula for the mix approved by the Engineer-in-charge before starting the work.

## **Construction Operation**

### **Weather and Seasonal Limitations**

Built up spray grout shall not be laid during rainy or foggy weather or when the base course is damp or wet or during dust storm or when atmosphere temperature in shade is 15°C or less.

### **Preparation of base**

The base of wet mix or existing bit layer on which BSG is to be laid shall be prepared, shaped and conditioned to the specified lines, grades and cross section in accordance with MORTH specifications, as directed by the Engineer-in-charge. The surface shall be thoroughly swept and scrapped clean of dust and other foreign matter.

### **Tack Coat**

#### **Scope**

This work shall consist of application of a single coat of low viscosity liquid bituminous materials (80-100 grade bituminous) to an existing road surface preparatory to another bituminous construction over it as per requirement of this specification, as directed by the engineer-in-charge.

#### **Binder**

The binder used for tack coat shall be bitumen of a suitable grade appropriate to the region, traffic, rainfall and other environmental conditions as directed by the Engineer-in-charge and confirming to IS 73-217 or 454, as applicable.

## **Construction Operation**

### **Preparation of Base**

The surface on which the tack coat is to be applied shall be cleaned of dust and any extraneous materials before the application of the binder, by using a mechanical brooms or any other approved equipment/method as specified by the Engineer.

### **Application of Binder**

Binder shall be heated to the temperature appropriate to the grade of bitumen used and approved by the Engineer-in-charge and spread on the base at the rate of 5 kg. per 10 sq.mt. area. The binder shall be applied uniformly with the aid of either self propelled or towed bitumen pressure, sprayer with self heating arrangement and spraying nozzles arrangement, capable of spraying bitumen at specified rates and temperature so as to provide an uniformly, unbroken spread of bitumen.

The tack coat shall be applied just ahead of the oncoming bituminous construction at rate of 5 kg/10m<sup>2</sup>. For manually laid BSG Binder shall be 15kg/m<sup>2</sup> for first layer and 20kg/m<sup>2</sup> for second layer.

### **Preparation and Transport of mix**

Bituminous macadam mix shall be prepared in a drum mix plant of adequate capacity and capable to yield a mix of proper and uniform quality with thoroughly coated aggregates. The plant shall be drum mix type of capacity 60-90T/hrs. The plant shall have co-ordinated set of essential units capable of producing uniform mix within the job mix formula such as down in Appendix-A.

- (a) In case of drum mix plant, the cold feed system shall have variable speed belt conveyor/or other suitable devices for regulating the accurate proportion of aggregate in to an even flood flow automatically from a Control Operation / Control Cabin.

- (b) **BITUMEN CONTROL UNIT**

Capable of measuring / metering and spraying required quantity of bitumen at specified temperature with automatic synchronization of bitumen and aggregate feed.

- (c) **FILLER SYSTEM**

A fines feeder system suitable to receive bagged or bulk supply of filler materials and its incorporation to the mix in the correct quantity shall be necessary auxiliary.

- (d) **DUST CONTROL**

A suitable built in Dust Control Equipment for the dryer to contain the exhaust of fine dust into atmosphere for environmental control, wherever so specified by the Engineer.

- (e) Suitable auxiliary bitumen Boiler of adequate capacity with self-heating arrangement and temperature control device. The boiler should be fitted with temperature indicating instruments.

The temperature of binder at the time of mixing shall be in the range of 150°C to 165°C and that of the aggregate in the range of 125°C to 150°C provided that the difference in temperature between the binder and aggregate at one time shall exceeds 25°C.

Mixing shall be thorough to ensure that a homogeneous mixture is obtained in which all particles of the aggregates are coated uniformly and the discharge temperature of mix shall be between 130°C and 160°C.

The mixture shall be transported from the mixing plant to the point of use in suitable tripper vehicles employed for transport shall be clean and be covered in transit if so directed by the Engineer.

### **6.3.5 Spreading**

The mix transported from the tipper at site to the paver shall be spread immediately by means of automatic paver with suitable screeds capable of spreading, temping and



finishing the mix, true to specified grade, line and cross section. The temperature of mix at the time of laying shall be in the range of 120°C to 135°C. The paver finisher shall have the following essential features.

- a) Loading hoppers and suitable distributing mechanism.
- b) All drives having hydrostatic drive/control.
- (c) The machine shall have a hydraulically extendable screed for appropriate width requirement.
- (d) The screed shall have temping and vibrating arrangement for initial compaction to the layer as is spread shall have adjustable amplitude and infinitely variable frequency.
- (e) The automatic paver shall be equipped with necessary control mechanism so as to ensure that the finished surface is free from surface blemishes.
  - (f) (a) The paver shall be fitted with an electronic sensing device for automatic leveling and profile control within the specified tolerance. However, ordinary self propelled mechanical pavers with suitable screeds, capable of spreading, tamping and finishing the mixture in specified lines, grades and cross section may be used for specification items such as L.B.M (Type-"B"). B.M.Mix seal premix carpet and 25 mm thick semi dense bituminous concrete.
  - (b) Dense bituminous macadam (Semi dense Bituminous concrete of thickness more than 25 mm. and bituminous concrete shall however be laid only with paver finisher having essential features as split out in MORTH
  - (c) The screed shall have the internal heating arrangement.

However, in restricted location and in narrow widths, where the available plant cannot be operated in the opinion of the Engineer, who may permit manual laying of the mix. The temperature of the mix at the time of laying shall be in the range of 120°C to 135°C in multi-layer ensured. The longitudinal joints and edge shall be constructed to the delineating lines paralleled to the centre line of the road. Longitudinal joints shall be offset by at least 150 mm from those in the binder course. All joints shall be cut vertical in the full thickness of the previously laid mix and the surface painted with hot bitumen before placing fresh materials.

## Rolling

After the spreading of mix, rolling shall be done by minimum 10 Tonnes vibro power rollers of the approved equipment. Rolling should start as soon as possible after the material has been spread. Rolling shall be done with care to keep unduly roughening the pavement surface.

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 centre

longitudinally except that on super elevated portions and on carriage way with unidirectional cross slope, it shall progress from the lower to the upper edge parallel to the centre line of the pavement.

The initial or break down rolling shall be done with minimum 10 tonnes vibro roller. As soon as it is possible to roll the mix without cracking the surface of having the mix picks up on the roller wheels. The second or intermediate rolling shall follow the break down rolling as closely as possible and be done while the paving mix is still at a temperature that will result in maximum density. The final rolling shall be done while material is still workable enough for removal of roller marks with 10 tonnes vibro roller. All the compaction operations i.e. break-down rolling, intermediate rolling and final rolling can be accompanied by using a vibratory roller 10 tonne vibro roller. During the initial or break down rolling and final rolling, vibratory system shall be switched off. The joints and edges shall be rolled with 10 tonne vibro roller.

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 mix materials. The rolling shall then be continued till the entire surface has been rolled to compaction, there is no crushing of aggregate and all roller marks have been eliminated. Each pass of the roller shall uniformly overlap not less than one third of the Tack made in the preceding pass. The roller wheel shall be kept damp. If necessary to avoid bituminous material from sticking to the wheel and being picked up. In no case shall fuel, lubricating will be used for this purpose, nor excessive water poured on the wheels.

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

Roller (s) shall not stand on newly laid material while there is a risk that, it will be deformed thereby. The edges along and transverse of the bituminous macadam laid and compacted earlier shall be cut to their full depth so as to fresh surface which shall be painted with a thin surface coat of intimate binder before the new mix is placed against it.

### **Surface finish and quality control of work**

The surface finish of construction shall conform to the requirements of MORTH. Control on the quality of materials and works shall be exercised by the Engineer-in-charge in accordance standard IS practice.

The bituminous macadam shall be covered with either the next pavement course or wearing course, as the case may be without any delay. If there is to be any delay, the course shall be covered by a seal coat before allowing any traffic over it.

### **Arrangement for Traffic**

During the period of construction, arrangement of traffic shall be done as per Clause 112 of MORTH.

### **Measurements for payment**

The payment shall be made on the MT basis of weigh mat slip from company Weigh Bridge and actual area of work done at site of specified consolidated thickness. The contractor shall have to install a weigh-bridge of suitable capacity for the purpose of

weighing dumpers at suitable place at his cost as directed. For verification weight of empty dumpers and weight of loaded dumper will be recorded in bound and numbered register on plant site.

Company will be free to get some loaded dumpers test checked at other weigh bridge. Weighbridge will be periodically got calibrated and verified from weight and measure authorities.

Weight of mix materials will be done in presence of responsible person, not less than the rank of Engineer of the Company and the measurements shall be recorded by the Engineer, if so authorised. Record of each dumper will be mentioned separately in bound and numbered register which will be maintained by the Company's representatives and signed by the contractor.

*Levels shall be taken for top of WMM and top of BSG, level difference between top of WMM & top of BSG shall be consider for payment. No additional payment shall be made for thickness more than specified.*

The Contract unit rate for BSG shall be measured in MT. The width of the BSG shall be as per drawing or actual whichever in minimum for the actual length of Road. The thickness of BSG shall be verified based on level record or jointly measured on site. The actual work done shall be also verified based on actual weight of BSG from weighbridge and density of BSG. Contract unit rate for BSG shall be for carrying out the required operations including full compensation for all components. However, on cross verification of thickness and based on weight record, if any shortfall is found, the pro-rata deduction shall be made from measurement by Engineer-in charge. BSG Weight shall be considered final from GIPCL Weigh bridge only, no other weigh bridge will allow for final certification. No extra payment shall be made work done is excess quantity beyond the direction of Engineer-in charge.

### **Rate**

The contract unit rate for the work shall be paid in full for carrying out the required operations including full compensation for:-

- (a) Making arrangements for traffic to clause-112 of MORTH book of specifications for Roads and Bridges work, second edition, 1988 except for initial treatment to verge shoulders and construction of diversions.
- (b) Preparation of base including filling of pot holes.
- (c) Providing all materials to be incorporated in the work including all royalties, fees, rents, where necessary and all leads and lifts.
- (d) All labour, tools, equipments, plants and incidentals to complete the work to the specifications and
- (e) Carrying out the work in part widths of the road where directed.
- (f) Sand or dust flushed surface (if necessary) as required without any extra cost.

### **Providing & Laying Bituminous Macadam**

Providing & Laying 37.50mm consolidated thick dense bitumen premix carpet using 20mm and 10mm downgraded black trap aggregates (Proportion shall be decided by Engineer-in charge) and using bitumen 60/70 grade as binder at 56 kg/m<sup>3</sup> of aggregates (3.70% bitumen by weight of total mix of mix) including applying tack coat over semi grouting surface at rate of 0.50 kg/m<sup>2</sup>, including mixing by Drum mix plant, transporting, spreading and leveling by paver at the specified line, level and camber, rolling with heavy duty vibro roller and also cleaning of surface using brush etc complete all as per detailed technical specifications and as directed by Engineer-in-charge etc.

### **Description**

This work shall consist of construction of a single course of 50 mm thick bitumen macadam on a previously prepared, to the requirements of these specifications, and in conformity with the line, grade and cross section as directed by the Engineer-in-charge.

### **Materials Binder**

The binder shall be paving bitumen of 60/70 grade as per Indian Standard Specification for paving bitumen I.S : 73/1961.

### **Coarse aggregates**

The stone aggregates consist of crushed stones.

The coarse aggregates shall be strong, durable of fairly cubical shape, free of disintegrated pieces, organic or other deleterious matter and adherent coatings.

THE AGGREGATE MUST BE ABSOLUTELY BLACK ON IMMERSION IN WATER ALL TISSUE OF AGGREGATE SHALL BE UNIFORM IN BLACK COLOUR, NO PEDDISH OR GREEN MATERIALS WILL BE ALLOWED. The aggregates shall preferably be hydrophobic and low porosity and shall satisfy the physical requirement set forth in Table given below :-

**TABLE-6**  
**PHYSICAL REQUIREMENT OF AGGREGATES FOR BITUMINOUS MACADAM**

<b>Sr. No.</b>	<b>Test</b>	<b>Test Method</b>	<b>Requirements</b>
<b>[ 1 ]</b>	<b>[ 2 ]</b>	<b>[ 3 ]</b>	<b>[ 4 ]</b>
1.	Los Angles Abrassion Value *	IS:2386 (Part-IV)	40% Maximum
2.	Aggregates Impact value *	- do -	30% Maximum
3.	Flakiness Index	IS:2386 (Part-I)	35% Maximum
4.	Stripping Value	IS : 6241	25% Maximum
5.	Soundness :		
	(i) Loss with Sodium	5 Cycles	12% Maximum

	Sulphate		
(ii)	Loss with Magnesium Sulphate 5 cycle.	5 Cycles	18% Maximum
6.	Water Absorption	IS:2386 (Part-III)	2% Maximum

\* Aggregate may satisfy requirement of either of the two tests.

#### Aggregate gradation

Sieve Designation IS	% by Weight Passing the Sieve
26.50 MM	100
22.50 MM	75-100
11.20 MM	50-85
5.60 MM	20-40
2.80 MM	0.5

The payment shall be made at contract rate for this item.

#### Proportioning of materials

The binder content for premixing shall be 4.0 percent by weight of the total mix i.e. 40 kg. per tonne of mix, except when otherwise directed by the Engineer-in-charge.

The quantity of aggregates shall be sufficient to yield the specified thickness after compaction.

The contractor shall get the job mix formula for the mix approved by the Engineer-in-charge before starting the work.

#### Variation of proportioning of materials

The contractor shall have the responsibility for ensuring proper proportioning of materials and producing an uniform mix. A variation in binder content 0.3% by weight of total mix shall however, be permissible in individual specification taken for quality control test vide MORTH Specification Section-900.

#### Construction Operations

## **Weather and Seasonal Limitations**

Bitumen macadam shall not be laid during rainy or foggy weather or when the base course is damp or wet or during dust storm or when atmosphere temperature in shade is 15°C or less.

## **Preparation of Base**

The base on which B.M is to be laid shall be prepared, shaped and conditioned to the specified lines, grades and cross section in accordance with MORTH specifications, as directed by the Engineer-in-charge. The surface shall be thoroughly swept and scrapped clean of dust and other foreign matter.

## **Tack Coat**

### **Scope**

This work shall consist of application of a single coat of low viscosity liquid bituminous materials to an existing road surface preparatory to another bituminous construction over it as per requirement of this specification, as directed by the engineer-in-charge.

### **Binder**

The binder used for tack coat shall be bitumen of a suitable grade appropriate to the region, traffic, rainfall and other environmental conditions as directed by the Engineer-in-charge and confirming to IS 73-217 or 454, as applicable.

## **Construction Operation**

### **Preparation of Base**

The surface on which the tack coat is to be applied shall be cleaned of dust and any extraneous materials before the application of the binder, by using a mechanical brooms or any other approved equipment/method as specified by the Engineer.

### **Application of Binder**

Binder shall be heated to the temperature appropriate to the grade of bitumen used and approved by the Engineer-in-charge and spread on the base at the rate of 5 kg. per 10 sq.mt. area. The binder shall be applied uniformly with the aid of either self propelled or towed bitumen pressure, sprayer with self heating arrangement and spraying nozzles arrangement, capable of spraying bitumen at specified rates and temperature so as to provide an uniformly, unbroken spread of bitumen.

The tack coat shall be applied just ahead of the oncoming bituminous construction.

## **Preparation and Transport of mix**

Bituminous macadam mix shall be prepared in a drum mix plant of adequate capacity minimum 60 to 80 TPH and capable to yield a mix of proper and uniform quality with thoroughly coated aggregates. The plant shall be drum mix type. The plant shall have co-ordinated set of essential units capable of producing uniform mix within the job mix formula such as down in Appendix-A.

- (a) In case of drum mix plant, the cold feed system shall have variable speed belt conveyor/or other suitable devices for regulating the accurate proportion of aggregate in to an even flood flow automatically from a Control Operation / Control Cabin.

(a) **BITUMEN CONTROL UNIT**

Capable of measuring / metering and spraying required quantity of bitumen at specified temperature with automatic synchronization of bitumen and aggregate feed.

(b) **FILLER SYSTEM**

A fines feeder system suitable to receive bagged or bulk supply of filler materials and its incorporation to the mix in the correct quantity shall be necessary auxiliary.

(c) **DUST CONTROL**

A suitable built in Dust Control Equipment for the dryer to contain the exhaust of fine dust into atmosphere for environmental control, wherever so specified by the Engineer.

- (d) Suitable auxiliary bitumen Boiler of adequate capacity with self-heating arrangement and temperature control device. The boiler should be fitted with temperature indicating instruments.

The temperature of binder at the time of mixing shall be in the range of 150°C to 165°C and that of the aggregate in the range of 125°C to 150°C provided that the difference in temperature between the binder and aggregate at one time shall exceeds 25°C.

Mixing shall be thorough to ensure that a homogeneous mixture is obtained in which all particles of the aggregates are coated uniformly and the discharge temperature of mix shall be between 130°C and 160°C.

The mixture shall be transported from the mixing plant to the point of use in suitable tripper vehicles employed for transport shall be clean and be covered in transit if so directed by the Engineer.

**Spreading**

The mix transported from the tipper at site to the paver shall be spread immediately by means of self propelled mechanical paver with suitable screeds capable of spreading, temping and finishing the mix, true to specified grade, line and cross section. The temperature of mix at the time of laying shall be in the range of 120°C to 135°C. The paver finisher shall have the following essential features.

- (a) Loading hoppers and suitable distributing mechanism.

- (b) All drives having hydrostatic drive/control.
- (c) The machine shall have a hydraulically extendable screed for appropriate width requirement.
- (d) The screed shall have temping and vibrating arrangement for initial compaction to the layer as is spread shall have adjustable amplitude and infinitely variable frequency.
- (e) The paver shall be equipped with necessary control mechanism so as to ensure that the finished surface is free from surface blemishes.
- (f)
  - (a) The paver shall be fitted with an electronic sensing device for automatic leveling and profile control within the specified tolerance. However, ordinary self propelled mechanical pavers with suitable screeds, capable of spreading, tamping and finishing the mixture in specified lines, grades and cross section may be used for specification items such as L.B.M (Type-"B"). B.M.Mix seal premix carpet and 25 mm thick semi dense bituminous concrete.
  - (b) Dense bituminous macadam (Semi dense Bituminous concrete of thickness more than 25 mm. and bituminous concrete shall however be laid only with paver finisher having essential features as split out in MORTH
  - (c) The screed shall have the internal heating arrangement.

However, in restricted location and in narrow widths, where the available plant cannot be operated in the opinion of the Engineer, who may permit manual laying of the mix. The temperature of the mix at the time of laying shall be in the range of 120°C to 135°C in multi-layer ensured. The longitudinal joints and edge shall be constructed to the delineating lines paralleled to the centre line of the road. Longitudinal joints shall be offset by atleast 150 mm from those in the binder course. All joints shall be cut vertical in the full thickness of the previously laid mix and the surface painted with hot bitumen before placing fresh materials.

## Rolling

After the spreading of mix, rolling shall be done by 10 Tonnes vibro power rollers of the approved equipment. Rolling should start as soon as possible after the material has been spread. Rolling shall be done with care to keep unduly roughening the pavement surface.

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 centre longitudinally except that on super elevated portions and on carriage way with unidirectional cross slope, it shall progress from the lower to the upper edge parallel to the centre line of the pavement.

The initial or break down rolling shall be done with 10 tones vibro roller. As soon as it is possible to roll the mix without cracking the surface of having the mix picks up on the roller



wheels. The second or intermediate rolling shall follow the break down rolling as closely as possible and be done while the paving mix is still at a temperature that will result in maximum density. The final rolling shall be done while material is still workable enough for removal of roller marks with minimum 10 tonnes vibro roller. All the compaction operations i.e. break-down rolling, intermediate rolling and final rolling can be accompanied by using a vibratory roller of minimum 10 tonne vibro roller. During the initial or break down rolling and final rolling, vibratory system shall be switched off. The joints and edges shall be rolled with minimum 10 tonne vibro roller.

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 mix materials. The rolling shall then be continued till the entire surface has been rolled to compaction, there is no crushing of aggregate and all roller marks have been eliminated. Each pass of the roller shall uniformly overlap not less than one third of the Tack made in the preceding pass. The roller wheel shall be kept damp. If necessary to avoid bituminous material from sticking to the wheel and being picked up. In no case shall fuel, lubricating will be used for this purpose, nor excessive water poured on the wheels.

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

Roller (s) shall not stand on newly laid material while there is a risk that, it will be deformed thereby. The edges along and transverse of the bituminous macadam laid and compacted earlier shall be cut to their full depth so as to fresh surface which shall be painted with a thin surface coat of intimate binder before the new mix is placed against it.

### **Surface finish and Quality Control of work**

The surface finish of construction shall conform to the requirements of MORTH. Control on the quality of materials and works shall be exercised by the Engineer-in-charge in accordance standard IS practice.

The bituminous macadam shall be covered with either the next pavement course or wearing course, as the case may be without any delay. If there is to be any delay, the course shall be covered by a seal coat before allowing any traffic over it.

### **Arrangement for Traffic**

During the period of construction, arrangement of traffic shall be done as per Clause 112 of MORTH.

### **Measurement for Payment**

The payment shall be made on tonnage basis on actual area of work done at site of weight of mix aggregate plus bitumen. The contractor shall have weighing dumpers at GIPCL Weigh Bridge as directed. For verification of weight of empty dumpers and weight of loaded dumper will be recorded in bound and numbered register on plant site.

Company will be free to get some loaded dumpers test checked at other weigh bridge. Weighbridge will be periodically got calibrated and verified from weight and measure authorities.

For the purpose of application of tack coat, if actual consumption of bitumen will increase than theoretical consumption as per specified in item specification, no extra payment will be given to contractor for such extra bitumen consumption. However, Company will be free to check loaded and empty bitumen dumpers at other or company weighbridge for verification of consumption and if found actual consumption of bitumen used for tack coat is less than specified in item specification, deduction will be done from contractor's bill for such amount of less used quantity of bitumen.

Weight of mix materials will be done in presence of responsible person, not less than the rank of Engineer of the Company and the measurements shall be recorded by the Engineer, if so authorised. Record of each dumper will be mentioned separately in bound and numbered register which will be maintained by the Company's representatives and signed by the contractor.

The Contract unit rate for Carpet shall be measured in Metric Tonne for the minimum specified thickness. The width of the Carpet shall be as per drawing or actual whichever in minimum for the actual length of Road. The actual work done shall be also verified based on actual weight of Carpet from weighbridge and density of Carpet. Contract unit rate for Carpet shall be for carrying out the required operations including full compensation. However, on cross verification of thickness and based on weight record, if any shortfall is found, the pro-rata deduction shall be made from measurement by Engineer-in charge. Carpet Weight shall be considered final from GIPCL Weigh bridge only, no other weigh bridge will allow for final certification. No extra payment shall be made work done is excess quantity beyond the direction of Engineer-in charge.

#### **Rate**

The contract unit rate for the work shall be paid in full for carrying out the required operations including full compensation for :-

- (g) Making arrangements for traffic to clause-112 of MORTH book of specifications for Roads and Bridges work, second edition, 1988 except for initial treatment to verge shoulders and construction of diversions.
- (h) Preparation of base including filling of pot holes and applying tack coat.
- (i) Providing all materials to be incorporated in the work including all royalties, fees, rents, where necessary and all leads and lifts.
- (j) All labour, tools, equipments, plants and incidentals to complete the work to the specifications and
- (k) Carrying out the work in part widths of the road where directed.
- (l) Sand or dust flushed surface (if necessary) as required without any extra cost.

#### **Providing & laying average thickness of 25 mm to 30mm consolidated thick B.C.**

Providing & laying average 25mm to 30mm consolidated thick bituminous concrete using black trap crushed stone aggregates as per required gradation and the 60/70 VG-30 grade asphalt at 5.50% of mix and filler by total weight of mix of mix hot laid process using drum

mix plant including heating and mixing asphalt & materials by drum mix process, transporting the mix and laying by paver finisher including consolidation with vibratory roller as per morth specification clause no. 509, etc... all complete as per specifications and instructions of Engineer-in-charge

### **Description**

This work shall be used as a wearing coat and shall not be used directly over wet mix surface, consist of laying and compacting mix seal surfacing in single course composed of suitable aggregates premixed work, a bituminous binder on a previously prepared base in accordance with the requirement of these specification.

### **Materials**

#### **Binder**

The binder shall be paving bitumen of a suitable grade as directed by the Engineer-in-charge and satisfying the requirement of I.S: 73, 217, 454 or other approved cut back as applicable.

#### **Coarse Aggregates**

The aggregate shall consist of angular fragment, clean, hard, tough and durable rock of uniform quality throughout. The aggregate shall be obtained by crushing rock gravel or river single and be free of clangated and flaky pieces, soft disintegrated materials and vegetable or other deleterious matter. They shall preferably be hydrophobic type.

The aggregate shall satisfy the quality requirement set forth in Table 7, except that the Index shall be limited to a maximum of 30.

**TABLE - 7**  
**PHYSICAL REQUIREMENT OF AGGREGATES**

<b>Sr. No.</b>	<b>Test</b>	<b>Test Method</b>	<b>Requirements</b>
<b>[ 1 ]</b>	<b>[ 2 ]</b>	<b>[ 3 ]</b>	<b>[ 4 ]</b>
1.	Los Angles Abrasion Value *	IS:2386 (Part-IV)	35% Maximum
2.	Aggregates Impact value *	- do -	30% Maximum
3.	Flakiness Index	IS:2386 (Part-I)	35% Maximum
4.	Stripping Value	IS : 6241	25% Maximum
5.	Water Absorption	IS : 2386 (Part-III)	2% Maximum

#### **Fine Aggregates**

The fine aggregate shall consist of crusher run screenings, natural sand or a mixture of both. These shall be clean, hard, durable, uncoated, dry and free from injurious, soft or flaky pieces and organic or deleterious substances.

### **Aggregate Gradation**

The coarse sand, fine aggregate shall be so graded or combined as to conform to the grading set forth in Table-8

**TABLE - 8**

**AGGREGATE GRADATION FOR MIX SEAL SURFACING**

<b>Sieve Designation</b>	<b>Percentage by Weight Passing the Sieve Mix seal surfacing</b>
<b>13.20 MM</b>	<b>--</b>
<b>11.20 MM</b>	<b>100</b>
<b>5.60 MM</b>	<b>52-88</b>
<b>2.80 MM</b>	<b>14-38</b>
<b>90 Micron</b>	<b>0 - 05</b>

### **Proportioning of Materials**

The total quantity of the aggregates used for mix seal surfacing shall be based on design mix of bituminous concrete. The quantity of binder used for pre-mixing in terms of straight run bitumen shall be 5.50% by weight of the total mix i.e. 50KG per tonne of mix.

Before starting the work, the contractor shall get the job mix formulae for the mix approved by the Engineer-in-charge.

### **Construction Operations**

#### **Weather and Seasonal Limitation**

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

#### **Preparation of Base**

The base over which the bituminous concrete is to be laid shall be completely free from dust, caked, mud, etc. before laying the surface course. Where existing base is potholes or rutted, the irregularities shall be filled in with premixed materials and well rammed. If existing base is extremely irregular and wavy, it may be considered worthwhile to lay a

bituminous leveling course of adequate thickness to avoid an excessive use of costly surface course. A tack coat at the rate of 6 to 7.5 kg per 10m<sup>2</sup> shall be given over a bituminous base or binder course if the existing surface is dry and hungry and 5 to 5.5 kg per 10m<sup>2</sup> on a normal bituminous base.

### **Preparation and Transport of Mix**

It is imperative that the Bituminous concrete be manufacturing by using drum mix plant of adequate capacity and capable to yield a mix of proper and uniform quality with thoroughly coated aggregates. The plant shall be drum mix type. The plant shall have co-ordinated set of essential units capable of producing uniform mix within the job mix formula such as down in Appendix-A.

- (a) In case of drum mix plant, the cold feed system shall have variable speed belt conveyors/or other suitable devices for regulating the accurate proportioning of aggregate to an even flood flow automatically from a Control Operation / Control Cabin.

(b) **BITUMEN CONTROL UNIT**

Capable of measuring / metering and spraying required quantity of bitumen at specified temperature with automatic synchronization of bitumen and aggregate feed.

(c) **FILLER SYSTEM**

A fines feeder system suitable to receive bagged or bulk supply of filler materials and its incorporation to the mix in the correct quantity shall be necessary auxiliary.

(d) **DUST CONTROL**

A suitable built in Dust Control Equipment for the dryer to contain the exhaust of fine dust into atmosphere for environmental control, wherever so specified by the Engineer.

- (e) Suitable auxiliary bitumen Boiler of adequate capacity with self-heating arrangement and temperature control device. The boiler should be fitted with temperature indicating instruments.

The temperature of binder at the time of mixing shall be in the range of 160°C to 177°C and of the aggregate in the range of 155°C to 163°C provided also that at no time shall be the difference in temperature between the aggregates and the binder exceeds 14°C.

Mixing shall be thorough to ensure that a homogeneous mixture is obtained in which all particles of the mineral aggregates are coated uniformly.

The mix shall be transported from the mixing plant to the point of use in suitable vehicles. The vehicles employed for transport shall be clean and covered over the transit if so directed by the Engineer-in-charge.

### **Spreading**

The mix transported from the drum mix plant to the site shall be spread by means of a self propelled mechanical paver with suitable screeds capable of spreading temping, finishing the mix, true to specified grade, lines and cross sections. The temperature of mix at the time of laying shall be in the range of 121°C - 168°C. Before spreading of SDBC, applied tack coat of 2 kg per m<sup>2</sup> on existing bitumen surface.

Longitudinal joints and edge shall be constructed true to the delineating lines paralleled to the centre line of the road. Longitudinal joints shall be offset by at least 150 mm from those in the binder course. The joints shall be cut vertical to the thickness of the previously laid mix and the surface painted with hot bituminous before placing fresh materials.

### **Rolling**

Immediately after spreading of mix, it shall be thoroughly compacted by rolling with a set of rollers moving at a speed not exceeding 5 KM. per hours. The initial or break down rolling shall be with 10 tonne vibro rollers and the surface finished by final rolling with 10 tonne vibro rollers or suitable pneumatic rollers.

The roller wheels shall be kept damp to prevent the mix from adhering to them but in no case shall fuel, lubricating oil be used for this purpose. Rolling shall commence longitudinally from the edge and progress towards the centre, except that on super elevated portions, it shall progress from the lower to upper edge parallel to the fresh material with rear or mixed wheel loading so as to minimise the pushing of the mix and each pass of the roller shall uniformly overlap not less than one third of the Tack made in the preceding pass. Rolling shall continue until the entire surface has been rolled to compaction and all the roller marks eliminated.

### **Opening to Traffic**

The traffic may be allowed immediately after completion of the final rolling when the mix has cooled down to the surrounding temperature.

### **Surface finish and Quality Control of work**

The surface finish of construction shall conform to the requirement of MORTH specification Clause-901, control on the quality of material and works shall be exercised by the Engineer-in-charge in accordance with MORTH specification, Clause-902.

### **Arrangement for Traffic**

During the period of construction, arrangement of traffic shall be done as per Clause 112 of MORTH.

### **Measurements for Payment**

The payment shall be made on tonnage basis on actual area of work done at site of weight of mix aggregate plus bitumen. The contractor shall have to weigh mat of dumpers at GIPCL Weigh Bridge as directed. For verification weight of empty dumpers and weight of loaded dumper will be recorded in bound and numbered register on plant site.

Weighbridge will be periodically got calibrated and verified from weight and measure authorities.

Weight of mix materials will be done in presence of responsible person, not less than the rank of Engineer of the Company and the measurements shall be recorded by the Engineer, if so authorised. Record of each dumper will be mentioned separately in bound and numbered register which will be maintained by the Company's representatives and signed by the contractor.

The Contract unit rate for Bituminous concrete shall be measured in Metric Tonne for the minimum specified thickness. The width of the seal coat shall be as per drawing or actual whichever in minimum for the actual length of Road. The actual work done shall be also verified based on actual weight of Bituminous concrete from weighbridge. Bituminous concrete weight shall be considered final from GIPCL Weigh bridge only, no other weigh bridge will allow for final certification No extra payment shall be made work done is excess quantity beyond the direction of Engineer-in charge.

**SPECIAL CONDITIONS FOR BITUMINOUS SURFACE WORK WITH USE OF HOT MIX PLANT & PAVER FINISHER**

1. The drum Mix Plant and accessories to be used for the work shall be in conformity with the specifications prescribed vide Government of India, Ministry of Transport Circular No.RW/RMP/1613784 dated 01.01.87. The plant shall be equipped with all units and accessories as per latest I.S : 3066/1965, as amended from time to time.
2. The work of laying aggregate mixed with bitumen shall start on site of work only after 8.00 hours in the morning and continue upto 17.00 hours in winter season and up to 18.30 hours in summer. No work shall be done except during the period mentioned above and also on Sundays and National Holidays viz. 26<sup>th</sup> January, 15<sup>th</sup> August & 2<sup>nd</sup> October.
3. Quantity of bituminous aggregate mix to be laid shall be restricted to 500 tons per day for 80-120 t/hr capacity and may be more or less depending upon the rated capacity of the plant. The plant location shall be within 50 kms from working site.
4. The contractor shall invariably get the job mix formulae for the mix approved by the Engineer-in-charge before starting the work.

**SPECIAL CONDITIONS FOR BITUMINOUS SURFACE WORK WITH USE OF "DRUM MIX PLANT AND PAVER FINISHER"**

1. The drum mixed plant and accessories to be used for the work shall be in conformity with the specifications prescribed vide Government of India, Ministry of Transport Circular No.RW/NH/33045/1/88-DO.II dtd 03.08.1998. The plant shall be equipped with all units and accessories as per latest I.S as amended from time to time. The contractors will have to modify their plants suitably within a period of six months from the date of issue of latest I.S. Specification or codes.
2. The work shall be of laying aggregate mixed with bitumen shall start on site of work only after 8.00 hours in the morning and continue upto 17.00 hours in winter season and up to 18.30 hours in summer.

3. Quantity of bituminous aggregate mix to be laid shall be restricted to 500 tons per day for 80-120 t/hr capacity plant and may be more or less depending upon the rated capacity of the plant. The plant location shall be within 50 kms from working site.
4. The contractor shall invariably get the job mix formulae for the mix approved by the Engineer-in-charge before starting the work.
5. If any machinery i.e. plant and paver is break down and the work is kept closed for some period, the machinery shall not be shifted from the work site and other work shall be done during that period from the same machinery.
5. The contractor will collect on site of work only the materials approved as per the specifications of the work. The work can only be started after removing of materials of low quality collected from site of work.



## **APPENDIX - "A"**

### **TECHNICAL REQUIREMENTS OF DRUM MIX PLANTS**

#### **GENERAL**

The drum mix plant should be of reputed make and proven design, sturdy in structure and capable of producing desired quality of mix as per specification for laying bituminous road surface and should have following essential arrangements :-

#### **1. COLD AGGREGATE FEEDER**

The cold aggregate feeder arrangement should have minimum 3 bins of sufficient capacity capable to storing different sizes of aggregates and fines to ensure continuous uninterrupted supply of aggregate matching the capacity of the plant. Each bin should have independent belt feeder system driven by a variable speed motor and a control gate to ensure accurate aggregate feed to meet design mix formulae. It is pre-requisite that only properly screened and graded materials are fed to the bins.

There should be a gathering conveyor to receive and transport material discharged from this bins with separate drive arrangement.

There should be a suitable arrangement like baffle plate at the discharge end of gathering conveyor for rejection of any oversize metal above the permits of limit. The conveyor should be fitted with suitable electronic weigh device for weighing quantity of cold aggregate being fed to dryer drum.

The plant shall have a mineral filler arrangement with suitable control device. Proportion the flow of filler material into dryer drum at appropriate stage.

#### **2. DRYER DRUM**

It should be termodrum type with smooth rotation arrangement to give rated output and capable of reducing the moisture content of the aggregate to desirable limit of 2% to 6% and achieving hot mix temperature (up to 160°C) as per the requirement) with such design that no blue smoke is emitted from the exhaust. The drum may have optional arrangement for feeding reclaimed material. There should be arrangement to restrict burner flame up to certain length in the drum before bitumen is injected.

It should be fitted with positive displacement bitumen pump driven by variable speed motor automatically controlled from control cabin, capable of feeding desired quantity of bitumen synchronised with aggregate feed system. Thermo mix fluid system or hot oil circulation system should be an in-built feature to keep bitumen pump and pipes sufficiently hot to avoid clogging of pipes.

#### **3. BURNER**

The burner used should be capable of burning the fuel efficiently and develop the required temperature. It should be fitted with remote control system, to detect flame failure, and

also electric spark ignition system or some other suitable arrangement. Burner operation should have thermostatic control of flame within the specified temperature range.

4. **BITUMEN HEATER**

It should consist of an insulated tank of adequate capacity fitted with effective and positive control of temperature, for allowing continuous circulation of bitumen between Bitumen Heater and proportioning units. Suitable arrangements should be provided for recording the temperature at the tank and in circulation system.

5. **FUEL SYSTEM**

Fuel tanks should be of sufficient capacity and fitted with suitable type of fuel pump to receive the fuel from storage tank supply to line heater and burner.

6. **CYCLONE SYSTEM**

Cyclone unit is required to control dust discharge within the admissible standard of pollution level.

7. **OPERATING CONTROL UNIT**

The drum mix plant must have centralised control system with operation from a control cabin located adjacent to the drum mix plant. The control system should be capable of following:-

- (i) Automatic control of speed of each bin feeder conveyor and gate so as to control and regulate the flow of various grades of material to ensure constant and accurate proportion of aggregates.
- (ii) Pre-set and control the percentage of flow of aggregate and asphalt required as per design mix.
- (iii) Automatic detection of plant operation, failure, display of aggregate temperature, asphalt and mix temperature, aggregate flow etc.. Fully automatic aggregate blending, bitumen / aggregate ratio control and burner control system.
- (iv) Control for pre-setting the moisture content of aggregate display digitally.
- (v) Digital control system should be such that if desired, it would be operated manually also.

8. **SURGO SILO**

The plant may have optional arrangement to store hot mix materials for at least equivalent to 30% of rated capacity to cater for any delay in loading the tippers. Temporary storage silo should have adequate automatic hydraulic unloading arrangement operated either from the control cabin or manually with necessary safety control.

## **SPECIAL CONDITIONS**

### **1. CONSTRUCTION EQUIPMENT**

- 1.1 The methodology and equipment to be used on the project shall be furnished by the contractor to the engineer well in advance of commencement of work and approval of the engineer obtained prior to its adoption and use.
- 1.2 The contractor shall have a trial run of the equipment for establishing its capability to achieve the laid down specifications and tolerance to the satisfaction of the engineer before commencement of work, if so desired by the engineer.
- 1.3 All equipments provided shall be of proven efficiency and shall be operated and maintained at all times in a manner acceptable to the engineer.
- 1.4 No equipment or personnel will be removed from site permission of the engineer.

### **2. WORK PROGRAMME AND METHODOLOGY OR CONSTRUCTION**

The contractor shall furnish his programme of construction for execution of the work within the stipulated time schedule together with methodology of construction of work and obtain the approval of the Engineer prior to actual commencement of work.

### **3. ACTION IN CASE OF DISPROPORTIONATE PROGRESS**

In case of extremely poor progress of the work at any time at any stage of work which in the opinion of the Executive Engineer cannot be made good by the contractor considering his available resources, GIPCL will get it accelerated to make up the lost time thoroughly any other agency and recover the additional cost incurred. If any in getting the work done from the contractor after informing him in writing about the action envisaged by him.

### **4. SETTING OUT**

- 1.1 Contractor shall establish working Bench marks tied with the reference bench mark in the area soon after taking possession of the site. The working bench marks/levels should be got approved from Engineer In charge. Checks must be made on these bench marks periodically or as directed by Engineer In charge and adjustments, if any, got agreed with Engineer In charge and recorded. An up-to-date record shall be maintained by the Contractor and also copy supplied to Engineer In charge for his record.
- 1.2 The lines and levels of formation, side slopes, carriage ways and shoulders shall be carefully set out and frequently checked, care being taken to ensure that correct gradients and cross sections obtained everywhere.
- 1.3 In order to facilitate the setting out of the works, the centre lines of the carriageways must accurately established by the Contractor and approved by Engineer In charge. It must then be accurately referenced in a manner

satisfactory to the Engineer In charge, every 50m intervals in plain and rolling area and 20m intervals in all curve points as directed by Engineer In charge, with marker pegs and chainage boards set in or near the fence line, and schedule of reference dimensions shall be prepared and supplied by the Contractor to the Engineer In charge. The markers shall be maintained until the works reach finished formation level and are accepted by the Engineer In charge.

- 1.4 The Engineer In charge will provide the Contractor with the data necessary for setting out of centre line. All dimensions and levels shall be verified by the contractor on the site and he shall immediately inform to Engineer In charge of any apparent errors or discrepancies in such dimensions or levels.
- 1.5 After obtaining approval of Engineer In charge, work on wet mix macadam can commence and the profile and cross sections shall form the basis for measurements and payment. The contractor shall be responsible for ensuring that all the basis traverse points are in place at the commencements of the contract and if any are missing, or appear to have been disturbed. The contractor shall make arrangements to re establish these points. A ‘Survey file containing the necessary data will be made available for this purpose. If in the opinion of the Engineer In charge , design modifications of the centre line or grade are advisable, the Engineer In charge will issue detailed instructions to the Contractor and the Contractor shall perform the modification in the field, as required, and modify the ground levels on the cross sections accordingly as many times as required . There will be no separate payment for any survey work performed by the Contractor. The cost of these services shall be considered as being included in the cost of items of work in the Bill of Quantities.
- 1.6 The work of setting out shall be deemed to be a part of general works, preparatory to the execution of work and no separate payment shall be made for the same.
- 1.7 Precision automatic levels, having a standard deviation of  $\pm 2\text{mm}$  per Km shall be used. Setting out of the road alignment and measurement of angles shall be done by using theodolite with traversing target, having accuracy of one second.

5. **PUBLIC UTILITIES**

Action in respect of public utilities will be taken by the contractor as envisaged in Clause-110 of Ministry's specification for road and Bridge work (2<sup>nd</sup> Revision).

6. **ARRANGEMENT FOR TRAFFIC DURING CONSTRUCTION**

Action for arrangement for traffic during construction will be taken by the contractor envisaged in the contract documents and spelt out in clause-112 of Ministry's Specifications for Road and Bridge Works (2<sup>nd</sup> Revision).

7. **QUALITY CONTROL**

The norms of achieving quality of work will be on the contractor who will take action in herewith.

8. **MINISTRY'S SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (2<sup>ND</sup> REVISION)**

The Ministry's Specifications for Road and Bridge works (2<sup>nd</sup> Revision) will form part of the contract documents and the contractor will be legally bound to the various stipulations made therein unless and otherwise specifically relaxed or waived wholly or partly by any special clause in the contract document.

9. **DOCUMENTATION**

The contractor will prepare drawing (9s) of the work as constructed and will supply in original with three copies to GIPCL who will verify these drawings. After approach finally drawing (s) shall then be prepared by the contractor and supplied in triplicate along with a micro film of the same to GIPCL for record and reference purpose.

10. **APPLICABLE IN CASE OF ROAD WORKS ONLY :-**

The details of the paver, specified in the clause-504.3.5 will be relaxed in case of bituminous macadam (Clause-504) where it is going to be covered by any wearing course including 25 mm. Semi-dense concrete (clause-519) other than 40 mm. Semi dense Bituminous concrete (clause-511) / Bituminous concrete clause (clause-512) or by a base course of Dense Bituminous macadam (Clause-507) with the provision that Bituminous macadam and 25 mm. Bituminous concrete can be laid by means of self propelled mechanical paver with suitable screeds capable of spreading, tamping and finishing the mix true to the specified lines/grades and cross sections. (MORTHGOL.No.RW/ NH/ 33045/88-dO-II, dated 6.4.1990).

The use of Drum Mix Plant for mixing asphalt and aggregate is compulsory for this work. Only contractors possessing facility of drum mix plant shall be eligible to bid for this work. The tender copies shall be issued to only these contractors who are possessing drum mixed plant.

The work shall be executed with the equipment as per MORTH Specification (II<sup>nd</sup> Revision), 1988, wherein details of the types of equipment are given for various specifications. Only those bidders who supply necessary proof/document for possession of the required type of equipment in their bids shall be considered as responsive for further evaluation and award of work

### **QUALITY CONTROL PLAN**

Sr. No.	Material	Test to be conducted	IS Code	Frequency	Test Conducted by	
	Bituminous madadam (B.M.) & Bituminous concrete (B.C.)					
	a) At source- Properties of binder and aggregate	i	Gradation	IS 2720(Part 4)	As decided by Engineer In charge	Approved lab
		ii	Combined flakiness and elongation indices	IS 2386 (Part 1)	As decided by Engineer In charge	Approved lab
	b) During laying and compaction	i	Binder content	ASTM-D-2172	As decided by Engineer In charge	Approved lab
		ii	Temperature of mix at the time of mixing at plant and laying ,rolling at site.	As per technical specification	At regular interval at plant and at site	Field test