

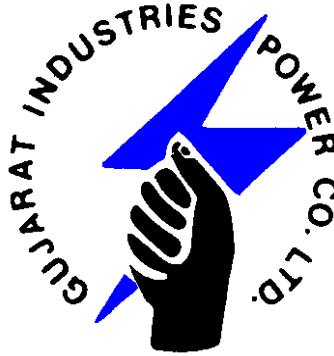
**GUJARAT INDUSTRIES POWER COMPANY LIMITED**  
**(Surat Lignite Power Plant)**

**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;

*“Surat Lignite Power Plant: 4 x 125 MW: Unit 1 to 4: Civil works for development of scrap yard at Power Plant”*

*Bid No.: SLPP/Civil/Scrap Yard/2019*



**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 (NIT)**  
**TENDER NO.: SLPP/Civil/Scrap Yard/2019**

Name of work	Surat Lignite Power Plant: 4 x 125 MW: Unit 1 to 4: Civil works for development of scrap yard at Power Plant.
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	09 Months from the date as mentioned in order.
EMD	<b>Rs. 43,000/- (Rupees Forty Three Thousand only)</b> 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	<b>Rs.2,000/- (Rupees Two Thousand only)</b> through RTGS as per details mentioned herein under clause no. 8 of Instructions to Bidders.
Site Visit	Site visit before submission of bid at GIPCL (Surat Lignite Power Plant), Village: Nani Naroli, Ta. Mangrol, Dist. Surat.
Availability of online e-Tender document	On website <a href="https://www.nprocure.com">https://www.nprocure.com</a> or <a href="https://gipcl.nprocure.com">https://gipcl.nprocure.com</a> up to <b>07.01.2020, 17:00 hrs.</b>
Last date of online submission of offer	<b>07.01.2020 up to 17:30 hrs.</b> on website: <a href="https://www.nprocure.com">https://www.nprocure.com</a> or <a href="https://gipcl.nprocure.com">https://gipcl.nprocure.com</a>
Submission of EMD, Tender fee and other supporting documents for technical Bid in physical form.	On or before <b>07.01.2020, 17:30 hrs.</b> during working days at office of Surat Lignite Power Plant, Nani Naroli, Dist. Surat.
E-Reverse Auction	E-Reverse Auction will be executed through website: <a href="https://e-auction.nprocure.com">https://e-auction.nprocure.com</a> (Schedule will be intimated later on to eligible bidders).

**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:-

E-Tender for “Surat Lignite Power Plant 4 X 125 MW, Unit # I to IV: Civil works for development of scrap yard at Power Plant”. Bid No.: SLPP/Civil/Scrap Yard/2019

**General Manager (SLPP)**

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

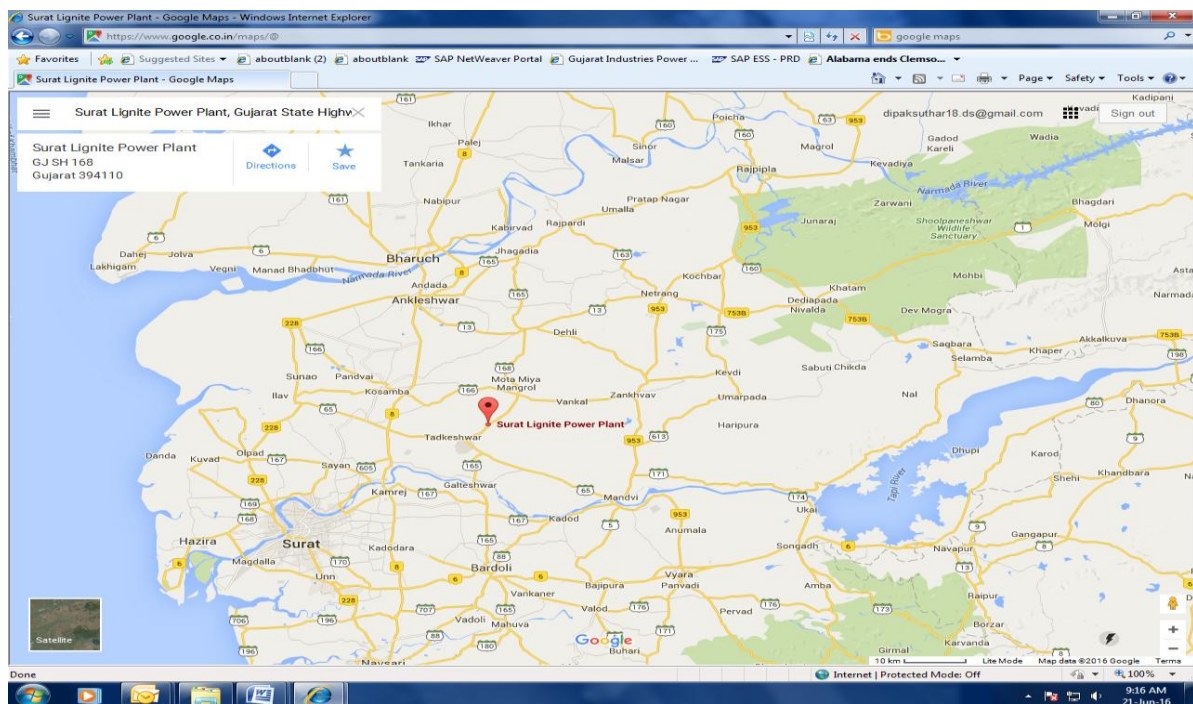
## SECTION-A INSTRUCTIONS TO BIDDERS

### 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. Recently, GIPCL has also commissioned 112.40 MW Wind Energy Farms at various locations in Gujarat, 1 MWp Distributed Solar Power Projects, each at two locations in Gujarat viz. at Village: Amrol (Dist.: Anand) & at Village: Vastan, Dist.: Surat and 80 MW Solar Power Plant at Village: Charanka (Dist.: Mehsana).

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 this contract for “Civil works for development of scrap yard at Power Plant” at Surat Lignite Power Plant and is therefore inviting open online tender offers from experienced & resourceful contractors.

## **2. SCOPE OF WORK**

The scope of work covered by this specification, in general, comprises the General Civil work for Construction of Scrap yard by fly ash & bed ash filling, boulder soling, approach road construction using fly ash filling, granular sub base, Water Bound Macadam (WBM), Water Mix Macadam (WMM), Bituminous Semi Grout (BSG), etc... and also Barbed wire fencing, M.S. Gate, Construction of one lockable room with toilet facility, other misc Civil works, etc... at Surat Lignite Power Plant-GIPCL, At & Post: Nani Naroli, Taluka: Mangrol, Dist.: Surat.

Scope of work includes excavation, back filling, boulder soiling, concreting, form work & shuttering, brick work, plastering, approach road construction by WBM, WMM, BSG, supply & fixing of barbed wire fencing, painting, supply & fixing of M.S. Gate, supply & fixing of required plumbing material, water proofing, etc... as per approved drawings and as per the item description provided in schedule of quantity (enclosed Section-E) which is inclusive of all materials (except free issue materials like Cement, Reinforcement steel, Rubble stones, Bed ash/Fly ash as per item nomenclature), labour, supervision, tools & tackles ,equipments, consumables, transportation, loading, unloading, storage and all necessary auxiliary works which are not specified herein but required to be carried out as per the time to time instructions provided by Engineer-in-charge of GIPCL.

The work shall be carried out as given in tender documents within provided time period and the works shall conform to high standards of engineering, design, workmanship, proper line & level, as per approved quality plan and as directed by Engineer-in-charge.

## **3. GENERAL INSTRUCTIONS**

- 3.1 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.
- 3.2 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.
- 3.3 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.
- 3.4 Before quoting the % above, equal or below SoR, the Bidder should go through the rate inclusions, specifications, scope of work, requirements of equipments/tools & tackles etc. and get himself fully conversant with them. The quoted price/rate should include applicable GST, cost of mobilization, legal compliances 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.
- 3.5 Bidder has to quote their % offer (above, equal or below) on total SoR amount of Price Bid and also quote applicable GST. Evaluation of tender will be done on gross total quoted amount including GST. Bidder's online quoted rate shall be applicable for all the items of SoR.
- 3.6 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.

- 3.7 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.
- 3.8 The tender documents shall not be transferable.
- 3.9 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 site visit if required.
- 3.10 Conditional offers shall not be considered and liable to be rejected.
- 3.11 The Company reserves the right to extend the deadlines for submission of the Bids by giving amendments.
- 3.12 Site visit will be organized by the Company as per details given in NIT (Notice Inviting Tender) at GIPCL - SLPP. Interested Bidders or their authorized representative with authorization letter may carry out site visit before submission of bid to understand nature of work & site conditions. Site visit may be carried out before submission of bid with prior intimation to GIPCL.
- 3.13 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.
- 3.14 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.
- 3.15 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.
- 3.16 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.
- 3.17 Timely and satisfactory completion of the work and strict adherence to the allotted time frames for jobs shall be the essence of the contract.
- 3.18 The Company reserves the right to qualify/disqualify any applicant without assigning any reason.
- 3.19 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.
- 3.20 GIPCL reserves the right to opt for e-Reverse Auction of the subject work at the sole discretion of GIPCL.**
- 3.21 To participate in e-Reverse Auction, bidders have to register on nProcure's e-Auction Portal: <https://e-auction.nprocure.com>.**
- 3.22 After e-Reverse Auction process, L1 bidder shall be decided on lowest offered rate amongst other bidders during specified e-Reverse Auction process.**
- 3.23 Schedule & other details for e-reverse Auction will be intimated later on to the eligible bidders.**

#### **4. PLANT VISIT**

**It is perquisite and necessary for all interested bidders to visit the Surat Lignite Power Plant (SLPP) after downloading the tender copy from website: <https://www.nprocure.com> or <https://gipcl.nprocure.com> or [www.gipcl.com](http://www.gipcl.com) to**

**understand the actual working conditions, compliance related to labour, safety etc... before submitting their offer. Failing which, any consequential liabilities arising will be to bidder's account.** The Bidders shall examine the site of works and its surroundings at his/her own responsibility. The bidders shall collect information 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 Bidder is deemed to have examined and understood the tender document, obtained his/her own information in all matters whatsoever that might affect the carrying out the works expressly mentioned or works which may have to be carried out to fulfill his/her contractual obligation within the scheduled rates and to have satisfied himself/herself to the sufficiency for his/her offer.

The submission of tender by a contractor implies that he/she has read these instructions, conditions of the contract etc. and has him/herself 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.

BIDDER shall inspect the site, examine and obtain all information required and satisfy him/herself regarding matters such as access to site, communication, transport, working conditions, hazardous areas, main plant areas, LHS, AHS & ELHS areas, Gate pass system, safety requirements, work permit system, right of way, flow of water during monsoon/dry season, the type & number of equipments, tools & tackles, PPEs etc and facilities required for the satisfactory & timely completion of quality works adhering to safety, the estimated quantity of various items of the work, the availability of local labour, availability & rates of material, local working conditions, uncertainties of weather, obstructions & hindrances that may arise, etc which may affect the work or cost thereof, before submission of his/her 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 rate quoted by BIDDER shall be based on his/her own knowledge and judgment of the conditions & hazards involved and shall not be based on any representations of the GIPCL Engineer.

**5. ELIGIBILITY CRITERIA (PHYSICAL COPIES OF SUPPORTING DOCUMENTS MUST BE SUBMITTED FOR EACH OF FOLLOWING 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.5.3) in similar nature of jobs like Infrastructure construction works, General civil works, Building construction works, Bituminous road construction and/or



repairing 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/executed similar works (as per clause no. 5.1) as defined hereunder during last five years ending last day of the month previous to the one in which tender is invited, satisfactory progress of ongoing works etc. secured from clients along with certified copies of documentary evidence preferably photo copies of work experience certificates. The experience should be either of the following:

a) **One similar completed/executed work each costing not less than the amount equal to Rs. 34.26 Lakhs.**

**OR**

b) **Two similar completed/executed works each costing not less than the amount equal to Rs. 21.41 Lakhs.**

**OR**

c) **Three similar completed/executed works each costing not less than the amount equal to Rs. 17.13 Lakhs.**

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 be allowed.

**5.4 Tender fee:** The tender fee shall be submitted through RTGS only as per RTGS details provided in clause no. 8 herein under.

**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 minimum average annual turnover of **Rs. 12.85 Lakh (30% of estimated value)** for last three financial years (2016-17, 2017-18 & 2018-19). 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 Net worth at the end of the last financial year should be positive. Bidder shall submit necessary evidence in the form of certificate from certified C.A.
- 5.10 The Bidder has to submit INCOME TAX Permanent Account Number (PAN), TIN/VAT no. of the firm. Copies of the same shall be submitted.
- 5.11 Bidder has to submit GSTIN number. Copy of the same shall be submitted.
- 5.12 In case Bidder is a joint venture company, the above requirements/credential of Joint Venture Company / Parent companies shall be considered.
- 5.13 Entire tender document shall be submitted duly signed & stamped by bidder on each page as a token of having acceptance of all terms & conditions, specifications, scope etc of tender document.

**5.14 ADDITIONAL PRE QUALIFICATION CRITERIA**

- 1. If Bidder or its Partner(s) or Director(s) is /are/was in any Litigation(s), Court Case(s) or Arbitration(s), either completed or under progress during last five(5) years or Black Listed / Deregistered / Stopped or banned from dealing in the past by any Govt. of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations, Bid of that party will be liable to be rejected. Bidder agrees and undertakes to accept decision of GIPCL in this regards as final and binding on the Bidder without any demur and that no further correspondence shall be done in this regard at any stage.
- 2. Bidder shall have to submit the “Declaration-cum-Undertaking for Compliance of Safety Laws and Regulations” as per Performa **Annexure-G & Annexure-H** under **Section-F**.
  - a. If any Fatal Accident / Violation of any safety law(s) / Rule(s) is / are found during the preceding Three (3) years, Bid of that party will be liable to be rejected. Bidder agrees and undertakes to accept decision of GIPCL in this regards as final and binding on the Bidder without any demur and that no further correspondence shall be done in this regard at any stage.
  - b. If any of the details submitted in the prescribed Annexure / Form to the Bid is/are found to be false, incorrect at any time in future, then the Contract awarded to that Bidder / Contractor shall be liable to be terminated forthwith without any notice / correspondence and Bidder agrees and undertakes to accept decision of GIPCL in this regards as final and binding on the Bidder without any demur and that no further correspondence shall be done in this regard at any stage. Further, Performance / Security Deposit will also be liable to be forfeited. Any dues to GIPCL from the Bidder / Contractor shall be recovered from the pending bills or any other dues payable to the Bidder / Contractor, if any or otherwise through any other recourse available under the Laws.

**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. SITE VISIT**

Site visit will be arranged at Surat Lignite Power Plant as per details given in the NIT (Notice Inviting Tender). **It is perquisite and necessary for all interested bidders to carry out site visit or bidder may send their authorized representative along with authorization letter for site visit before submission of bid.**

It is necessary to carry out site visit to understood in detail regarding actual working conditions, scope of work with respect to estimated requirements of material, manpower, supervisors, transport vehicles, tools & tackles, statutory & legal requirements, special requirements, to understand, resource & equipment requirements, approaches, plant O&M requirements, etc. Site visit may be carried out before submission of bid with prior intimation to GIPCL.

**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. 43,000/- (Rupees Forty Three Thousand only) and Non-refundable Tender fee Rs. 2,000/- (Rupees Two Thousand only) shall accompany with Bid. The EMD shall be in the form of a crossed bank Demand Draft in favor of Gujarat Industries Power Co. Ltd. as per following details:

**Bank for EMD DD**

1. Bank of Baroda
2. State Bank of India
3. Any Nationalized banks

**Payable at :**

Mosali, Dist: Surat  
Nani Naroli, Branch Code: 13423  
Surat

**The Tender fee shall be submitted through RTGS as per following details:**

**RTGS detail for Tender fee:**

- 1 Name of account holder: Gujarat Industries Power Co. Ltd.
- 2 A/c. No.: 33514692834
- 3 Name of Bank: State Bank of India
- 4 Bank address: Utility Building, Nani Naroli, Ta. Mangrol, Dist. Surat. Pin 394110.
- 5 IFSC code: SBIN0013423
- 6 MICR code: 394002513

**OR for EMD**

- 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 Vysya 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 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 8.9.
- 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 RTGS Detail and other documents to be submitted in physical form as per details mentioned in NIT.	Address for Submission: <b>General Manager (SLPP)</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</b>
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**9. SUBMISSION OF BIDS**

**A: MODE OF SUBMISSION**

The bids shall be submitted online through website: <http://etender.gipcl.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 RTGS detail and EMD shall be submitted in physical form as per NIT.**

**(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. Schedule of deviation (Annexure-F in Section-F) Technical as well as commercial, if any.
3. 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. Turnover 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 or certificate from certified chartered accountant as the case may be.
7. P.F. Number and Allotment Letter.

8. PAN Number.
9. **GSTIN number/certificate copy.**
10. User ID for e-reverse auction on website: <https://e-auction.nprocure.com>

**(b) Price Bid:**

1. Percentage Rate Price Bid shall be submitted online only.

**Note: Offered percentage rate (service charge) on GIPCL’s total estimated SoR value shall includes cost of all manpower, approved quality materials (except free issue materials by GIPCL like Cement and Reinforcement, rubble, bed ash/fly ash for specifically mentioned in item nomenclature), equipments, consumables, tools & tackles, Safety, legal & statutory compliance, mobilization-demobilization, all taxes & duties, other than GST. Bidder shall quote applicable GST separately in online price bid.**

2. The rates shall be firm for entire contract period and also during extension, if required and shall not be subject to any escalation in price, idle charges for labour, machinery, overhead expenses etc. **There will not be any escalation/compensation to the contractor against any revision in MWR (Minimum Wage Rates) and revision in materials prices.**
3. **Contractor shall not pay less than the Minimum Wages notified by the Government from time to time to his/her employees of corresponding category.**
4. Contractor shall at his/her expense comply with all labour and industrial laws and such other acts and status as may be applicable to this contract in respect to pay etc. On account of any default in respect of all liabilities and in case of non compliance of the above, the company can withhold their payments till all legal liabilities are discharged.
5. Contractor shall deploy labour/workers & supervisors in sufficient numbers and quality to ensure workmanship of the degree specified in this contract and to the satisfaction of the Company.
6. **Bidder shall have to quote their service charge on estimated cost 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. Bidder shall quote applicable GST separately in online price bid.**
7. Online quoted amount by bidder shall include applicable GST. Total amount will be derived by considering bidder’s online quoted total amount with service charge and quoted GST as per prevailing rates as declared by Central/State Government. Any statutory changes in taxes & duties will be to GIPCL’s account. In case of any reduction and/or removal of taxes, the same shall be passed on to GIPCL.
8. The quantities shown in the SoR (Section-E) are approximate for the contract period and may vary as per job requirement.
9. The Bidder shall fill the Bid documents with utmost care in consonance with the instructions contained in the Bid documents.

**(c) E-Reverse Auction:**

- 1) GIPCL reserves the right to opt for e-Reverse Auction for the subject tender at sole discretion of GIPCL.
- 2) E-Reverse Auction will be conducted on nProcure’s e-Auction Portal: <https://e-auction.nprocure.com>
- 3) For conducting e-Reverse Auction, lowest 50% out of total eligible Bidders (rounded to the next higher whole number) or up to 03 (three) nos. of eligible bidders L1 to L3 (whichever is higher) will be invited.
- 4) Original L1 price (including GST) will be declared through nProcure’s e-Auction Portal: <https://e-auction.nprocure.com> to start e-Reverse auction process and final received lowest auction price in the value by e-Reverse auction process will be the final L1 price.

- 5) Minimum decremental value for the e-Reverse auction will be set by GIPCL prior to start of e-Reverse auction and this will be applicable during each reverse bid hit.
- 6) Duration for the e-Reverse auction will be 30 Minutes with a provision of extensions for further 15 Minutes at every single reverse bid received during the last 05 minutes, till there is no further reverse bid entry (hit) by the participating Bidders.
- 7) Evaluation of tender will be done on gross total quoted amount with GST.
- 8) After e-Reverse Auction process, final L1 bidder shall be decided on lowest offered rate amongst other bidders during specified e-Reverse Auction process.
- 9) After e-Reverse Auction process, the original rates quoted by the final L1 bidder for individual items/packages shall be reduced proportionately based on total % reduction from their original quoted gross price v/s price derived after e-reverse auction, keeping GST percentage (%) rate same as originally quoted by final L1 bidder.
- 10) Prorata reduction will be applied in the quoted rates for all the items of SoR after price discovery through e-Reverse Auction.

**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 09 (Nine) months from the date of issue of LOI/Work order whichever earlier as stated in the Special Conditions of Contract ('Contract Period').
- 17.2 GIPCL reserve the right to short close the contract any time by giving one month notice period without assigning any reason.
- 17.3 GIPCL reserves the right to extend the Contract Period appropriately (if given scope of work not completed) on the same rates, terms and conditions without any price escalation and entering into any new contract.

**18. CONTRACT SECURITY DEPOSIT (PERFORMANCE 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**, 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 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 'Guarantee Period' after completion of contract and on fulfilling contractual obligations throughout the guarantee period. However, any delay in submission of initial SD will result in equivalent late release of entire SD after guarantee period..

**19. 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 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, security check, pre-employment medical fitness check-ups & induction safety training 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 safety helmets, dust masks, gum shoes/safety shoes, uniform and other necessary PPEs for properly undertaking the operations involved under this contract. Following are also to be issued:
  - a) Safety shoes (standard approved ISI make in yellow colour only) and/or gum shoes based on day to day requirements.
  - b) Safety Goggles / face shield.
  - c) Ear plug / Ear muff, standard dust mask.
  - 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 concern GIPCL engineers and who shall bear overall responsibility for performance of the contract. Such person shall remain always available at site. Contractor has to submit the authority letter and documentary proof for the same.
- (vii) The Contractor shall appoint 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.
- (ix) During emergency or similar situations the Contractor shall be required to mobilize resources as per need within the period of 04 hours as directed by GIPCL. If the contractor fails to mobilize sufficient manpower to complete the job in time, GIPCL will execute the job through other agency at the risk and cost of the contractor with 15% supervision charges & the same will be recovered from the Contractor's bill.
- (x) **Important Note: Whenever any of the Unit at SLPP remains under outage due to any reason and require to enhance the work force at site to utilize the opportunity, the contractor shall mobilize sufficient work force at site within a period of twelve hours from the time of intimation to the site-in-charge or via mail to your office.**
- (xi) During unit overhauling, the contractor has to enhance the site manpower as per the requirement to ensure the timely completion of work (During overhauling period quantum of work increases substantially). For this, enhanced work shall be completed by deploying additional manpower with separate supervisor. Payment will be made on item rate basis only. The work during the overhauling period is to be carried out round the clock. Contractor should mobilize sufficient number of manpower and execute the work in all shifts with independent manpower. Contractor should not continue the same manpower for more than 12 hours.
- (xii) The contractor shall have to arrange accommodation for their labours & supervisor at their own cost.

**B: EQUIPMENTS AND TOOLS & TACKLES:**

- (i) All equipments and tools & tackles required to execute the contract are in the scope of the contractor. Please refer list of required minimum equipments, tools & tackles as Annexure-E of Section-F. The contractor should ensure that equipments and tools & 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, equipments, tools & tackles, vehicles 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 Civil work as per the scope, the contractor is required to maintain/arrange timely sufficient quantity of equipments and tools & tackles like staging, shuttering, survey work equipments, transportation vehicles, Concrete Mixer machine, Concrete vibrators, truck mounted water tanker, JCB, dumpers, Road Vibro Roller, all consumables like but not limited to petrol, diesel, oil, gas, etc..., power cables around 1km, power supply extension boards, sockets, flash back arrestor, industrial gas, welding rods, gas cutting set, gas cylinders, welding set, hand gloves, welding helmets, tractors with standard hydraulic trolleys etc... in good working condition at site as per day to day work requirements and emergency situations 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 activities in service immediately within minimum time. In case of any emergency arising during night hours the contractor should be in a position to mobilize the manpower 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 [khmistry@gipcl.com](mailto:khmistry@gipcl.com) & [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 or during Pre-Bid site visit, 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 RTGS (online payment) system only based on submission of required documents like bank mandate form with cancelled cheque.

**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**

- 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 date & time mentioned in NIT.
- 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 at Village Nani Naroli, Taluka Mangrol, Dist.Surat-394 110, Gujarat up to the period specified in NIT  
[1] E.M.D. & Tender fee [2] 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.

## **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 “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**, 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 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 'Guarantee Period' after completion of contract and on fulfilling contractual obligations throughout the guarantee 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 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. Contractor shall mobilize required resources within 04 hrs to meet the emergency requirements and in case contractor fails to complete the emergency jobs related to plant operation, GIPCL will engage third party and will recover expenses from contractor's R.A. bills, Security Deposit and / or whatsoever for expenses incurred to complete the job along with additional 15% overhead charges.

In case if contractor's services are not found satisfactory with respect to timely mobilization to meet emergency requirements, time bound activities, workmanship & safety (OHSAS policy of GIPCL) then GIPCL has right to terminate the contract at any time by giving 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 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 as amended till date 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 (SLPP) - 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.

## **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 but not limited to the Minimum Wages Act, 1948, Contract Labor (Regulation & Abolition) Act 1970, Factories Act, 1948, Industrial Dispute Act 1947, Workmen Compensation Act 1923, Interstate Migrant Workmen Act 1979, Equal Remuneration Act as amended till date 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, 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 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 site and furnish the same failing which GIPCL may terminate the contract at its sole discretion.



- 3.3. 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, if applicable, in respect of the employees employed by him at 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 applicable 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 (if applicable) 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 site. 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 etc on monthly basis to HR&A dept. for verification and record if desired.
- 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, 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 (if applicable) 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 if asked.
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 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’, etc 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 shall keep hold the same till contractor submit evidences as desired by GIPCL in line of such 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. Following Brand name for safety shoe & safety helmet shall be issued to workmen of SLPP site.

**Helmet :**

Sr No.	Model	Company	Specifications
01.	Tough Hat, HP-TH	Sure Safety	IS : 2925 – 1984, ANSI / ISEA Z89.1-2009
02.	V-Gard	MSA	
03.	PN 521 - Shelmet	Karam	

**Safety shoes :**

Sr No.	Model	Company	Specifications
01.	Acme Fabrik plast Co.	SSTEELE (Strom) – Double Density	IS : 15298 – 2011
02.	Acme Fabrik plast Co.	TRIMAX(Adjacent) – Double Density	
03.	Worktoes Warren	Worktoes - Warren Plus	

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 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 incharge 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>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**

- a. All materials (**except free issue Cement and Reinforcement, rubble, bed ash/fly ash for specifically mentioned in item nomenclature** in SOR Section-E), tools & tackles, labours, equipments, vehicles, tractors, dumpers, etc... to execute the contract are in the scope of the contractor. The contractor should ensure that tools & equipments are in healthy condition.
- b. 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.
- c. If the work is not found satisfactory, Engineer-in-charge reserves the right to take suitable action.
- d. Contractor shall depute full time independent experienced site-in-charge and independent site supervisor at site. They shall co-ordinate with concern GIPCL engineer and shall bear overall responsibility of contract including joint measurement, billing etc. Such person shall function from site office of contractor at SLPP.
- e. Contractor shall also nominate one safety supervisor at site and shall submit nomination of safety supervisor in writing before commencement of contract. Safety supervisor shall arrange small safety talk on every day morning or whenever required with all workers working under this contract. He shall coordinate with concern department's Engineer-in-charge on daily basis and report daily observations, tool-box talk records etc. **GIPCL reserves the right to hold the work in case contractor not deployed safety supervisor and a penalty equal to Rs. 1,000/- per working day absent of safety supervisor shall be levied from Contractor.**
- f. Contractor shall strictly follow the existing work permit system of the GIPCL and any future revisions.

- g. The contractor has to take EC insurance policy for their workmen. The contractor has to submit labor license and PF account number to the Engineer-in-charge before start the work.
- h. The contractor has to do the job timely. GIPCL shall not compromise in delay. In case of delay of work without any valid reason, the GIPCL reserves the rights to carry out the work by deploying other agencies at the risk & cost of contractor with additional 15% overhead charges.
- i. Contractor shall mobilize the resources as per need within the period of four 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 with additional 15% overhead charges.
- j. Contractor should mobilize all resources for efficient & smooth execution of contract within seven days from the date of issue of Letter of Intent/Work Order.
- k. The offered prices / item rates shall remain firm 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... due to any reason whatsoever. No price escalation / idle charges shall be entertained due to delay in work on unavailability of work front, non-issue of work permit, holding of work permit for any reason, unavailability of contractor's supervisor, violation of safety rules, unsafe act by any of contractor's worker, negligence & ignorance of safety & quality instructions of GIPCL Engineer-in-charge or any other reason whatsoever.
- l. 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.
- m. One or more jobs may be required to be done simultaneously and contractor shall mobilize additional resources accordingly.
- n. 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.
- o. 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 etc.
- p. The contractor has to submit daily reports showing work carried out with details of available manpower, material & machinery etc.
- q. 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.
- r. 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.
- s. 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.

- t. 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 handling 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. Electricity & water at nearest available point. Further distribution to be done by contractor at their cost by arranging extension cable around 1km length & construction water using truck mounted water tankers.
- b. Quarter(s) for supervisor/ engineers on chargeable basis in GIPCL's township at discretion of GIPCL if available.
- c. Workshop facility as available at site only on chargeable basis. 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.
- d. 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 plant 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 effective 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 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. BENEFIT PAYABLE IN CASE OF ACCIDENT OCCURRING OUTSIDE PREMISES OR BEYOND THE COURSE OF EMPLOYMENT**

The Contractor shall provide an insurance coverage (Medical + Death Benefit) for sum of Rs. 01/-Lakh to all his workmen/labour deployed at GIPCL-SLPP site for the accident taking place anywhere outside the Company premises or at any place when the workman is not in course of his employment.

**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**

The scope of work covered by this specification, in general, comprises the General Civil work like Construction of Scrap yard using boulder soling, approach road construction using fly ash filling, granular sub base, water bound macadam, Water Mix Macadem, Bituminous semi grout, Barbed wire fencing, M.S. Gate, Construction of one lockable room with toilet facility and other misc Civil works 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:-

#### **(A) Construction of approach road & internal roads as per drawing & item nomenclature :-**

- (i) Earthwork in excavation below ground level for road.
- (ii) Transportation of required quantity of free issue fly ash & bed ash from Silo to work site using covered dumpers.
- (iii) Filling fly ash under roads.
- (iv) Compaction of fly ash/bed ash by flooding of water using water tankers, leveling of the same in required line and level.
- (v) Providing & laying Granular Sub Base & compaction using vibro roller.
- (vi) Providing, Laying, spreading and compacting graded stone aggregate to wet mix macadam (WMM) & compaction using vibro roller for main approach road.
- (vii) 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 directed by Engineer-in-charge.
- (viii) Providing, supplying and laying of average 200mm consolidated thickness water bound macadam base coarse in two layers each 100mm consolidated thickness for internal roads.
- (ix) Watering using tanker & rolling using vibro roller.
- (x) Providing and laying 75mm average consolidated thick built up spray grout.

#### **(B) Construction of scrap yard :-**

- (i) Removal of vegetation, Grass/small bushes, up routing of tree, removal of unwanted materials, debris, temporary structure (if any) and disposal of removed vegetation, bushes, trees, debris etc. outside the plant premises.
- (ii) Earthwork in excavation for area grading in proper line and level of the area in required slope.
- (iii) Compaction of the area using roller in required line and level.
- (iv) Transportation of required quantity of free issue fly ash & bed ash from Silo to work site using covered dumpers.
- (v) Filling of fly ash/bed ash for scrap yard area.
- (vi) Water flooding & compaction of backfilled ash and leveling of the same.
- (vii) Transportation of required quantities of free issue rubble from various area of Lignite Handling System to working site using JCB, dumper/tractor or manually as case may be.
- (viii) Providing & laying compacted avg. 230 mm thick boulder soling in proper line & level, filling of voids using bed ash, flooding of water for filling of voids, leveling, compaction etc. complete as directed by Engineer in charge as per drawing and item nomenclature.

- (ix) The free issue rubble shall be given from various area of Lignite handling system as per availability. Please note that rubble shall be generated periodically depending on plant running & quality of lignite. No idle charges of manpower, labours, equipments, machinery, tools & tackles etc. on the account of non availability of rubbles for scrap yard development. **For any delay in supply of free issue materials, GIPCL will extend the contract period suitably at the same rate, terms & condition without any price escalation.**

**(C) Separate boundary with barbed wire fencing :-**

- (i) Providing, Supplying, transportation, loading, unloading and fixing of barbed wire fencing with heavy duty pre-cast poles of size 100mmx100mmx2100mm high with 04 nos 3mm dia reinforcement inside the pole. The pole shall be fixed at spacing 2.50 m c/c, bracing poles at every 15 mtr. c/c and at every junction/corner inclusive excavation 300mm dia x 500mm depth, grouting of poles with concrete 1:4:8 mix, tie up 12 gauge barbed wire of TATA make, 5 nos. horizontal rows and 2 nos. cross wire between two poles with supply & fixing of G.I. J bolts, nuts, washers and also including lime painting of all poles, tools & tackles etc. complete... as per sketch/drawing.
- (ii) Providing, supplying, detailing, fabricating as per approved design, transporting to site and erecting in position structural steel gate using approved make & quality structure members conforming to IS: 2062 Grade A, provision of erection bolts, permanent bolts, nuts, washers, welding cleats, stiffeners, gussets, base plates including all operation such as cutting, straightening, grinding, welding, providing erection / permanent bolts, heavy duty hinges, handle, heavy duty aldrop, nuts, washers etc. complete, including painting of gate with two coat of minimum 40 micron DFT High Build ZP Primer and three coats of High Gloss Synthetic Enamel paint, each coat of minimum 25 micron DFT of approved colour shade on structural steel as per specifications and approved fabrication drawings or as directed by Engineer-in-charge etc all complete. The structure materials & paint for the gate shall be in the scope of contractors. The scope of work also including fixing of structure column (free issue by GIPCL) for gate, alignment of columns, fixing and welding with gate hinges, grouting of column using concrete of 1:2:4 grade etc. complete. The weight of column (without weight of free issue column) shall be considered for payment.

**(D) One lockable room with toilet facility :-**

- (i) Earthwork in excavation below ground level for foundation.
- (ii) RCC work for foundation of columns, columns, beams, lintel, chajja, slab, etc.
- (iii) Brick masonry wall.
- (iv) Plaster work.
- (v) Water proofing works.
- (vi) Plumbing works.
- (vii) Tiles works.
- (viii) Doors & windows works.
- (ix) Painting works.
- (x) Other misc. civil works.

Contractor shall carry out Construction of scrap yard using fly ash & bed ash filling, boulder soling, approach road construction using fly ash filling, granular sub base, water bound macadam, Water Mix Macadem, Bituminous semi grout, Barbed wire fencing, M.S. Gate, Construction of one lockable room with toilet facility and other misc Civil works as per approved drawing and as per the item description provided in schedule of quantity

which is inclusive of all materials (except free issue materials like Cement and Reinforcement, rubble, bed ash/fly ash as per item nomenclature), labour, supervision, tools-tackles, equipments, consumables, transportation, loading, unloading, storage, all necessary auxiliary works not specified herein etc as per the time to time instructions provided by Engineer in charge of GIPCL.

Contractor shall carryout the work as given in tender documents within provided time period and the works shall conform to high standards of engineering, design, workmanship, proper line and level and quality plan and as directed by Engineer in charge.

#### **1.1 TOOLS & TACKLES AND EQUIPMENTS**

For proper execution of the contract, the contractor is required to arrange sufficient quantity of tools & tackles and equipments in good working condition with sufficient quantity of materials at site. Contractor is required to maintain sufficient number of standard tools & tackles including shovels, wire brush, metal pan, crowbars, axe, pickaxe, pneumatic breaker, air compressor, etc. in good working condition at site.

The estimated list of such equipments, tools & tackles is provided under Annexure-E of Section-F herein under. Contractor shall note that this list is not exhaustive and if any additional tools & tackles and equipments are required for proper performance of the contract, the contractor shall also arrange the same immediately with no extra cost to GIPCL.

#### **1.2 SCHEDULE OF ACTIVITIES**

Contractor shall deploy suitable manpower along with supervisors to carry out the activities of scope of work. The contractor shall deploy their sufficient supervisors & site-in-charge for day to day monitoring, to check the site requirements regularly and to get the certification of work done on daily basis from concerned GIPCL's representatives. Various activities shall be carried out as directed 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 the works independently.

#### **1.3 DISPOSAL OF MATERIAL**

Contractor shall be responsible for removal and disposal of surplus materials, excavated stuff etc outside premises or at designated locations as per prevailing GPCB norms. GIPCL will not be held responsible for any subsequent consequences regarding improper disposal of material. Contractor shall be required to submit written undertaking along with the final bill that all the material is disposed off at outside premises or at designated location as per prevailing Government guideline and contractor shall indemnify, keep harmless the GIPCL against any future liabilities or consequences in this regard. Contractor's final bill shall be processed only after receipt of letter of undertaking by the contractor.

#### **1.4 SCOPE OF CONTRACTOR**

1. All labours, materials (except specified free issue material as per item nomenclature by GIPCL), machinery such as JCB, dumpers, tractor with trolley, truck mounted water tankers, diesel generator set, tools & tackles, Vibro Roller, chute with scaffolding, shuttering materials, Concrete mixture machine, vibrators, spreaders, iron pans, tools & tackles, equipments, etc required to execute the contract will be in the

- scope of the contractor. The contractor should ensure for healthiness/working conditions of tools, tackles & equipments.
2. All consumable items like bitumen, primer, aggregate, dust powder, cotton waste, kerosene, gas, diesel, petrol, lubricants, PVC Pipe for Curing, hose pipes, line dori, lime powder, etc will be in the scope of the contractor.
  3. Contractor has to maintain record of each and every material brought to site with material test certificate and gate entry.
  4. **Third party testing:-**  
Contractor shall arrange third party testing of materials supplied at GIPCL-SLPP for jointly collected random samples as directed by Engineer-in-charge. All cost towards testing shall be borne by the contractor. The testing laboratory shall be as decided by GIPCL.
  5. All safety/PPEs required during work at site are to be arranged by the contractor.
  6. The Contractor shall have to provide necessary facilities including accommodation for their labour at their own cost.
  7. The contractor has to arrange lifting/shifting, loading, unloading of the materials issued by GIPCL of their own.
  8. Contractor has to depute their experienced site-in-charge & independent supervisors for work execution as per specification and for day to day work planning & coordination with respective department's Engineer-in-charge, to get work 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...

#### **1.5 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.

#### **1.6 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 availability of site manpower, procurement of materials, availability of tools & tackles, equipments & machineries along with 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/offered final percentage rate on GIPCL's provided SoR item rate through e-Reverse Auction. Prorata reduction will be applied in the quoted price for all the items of SoRs after price discovery through e-Reverse Auction. The item rates so derived shall be inclusive of cost of all approved materials like bitumen, aggregate, grit, stone dust, etc and other required materials **(except free issue Cement and Reinforcement, rubble, bed ash/fly ash for specifically mentioned in item nomenclature)**, safe storage of materials, wastage, operators ,helpers, labours, supervisors, survey work, consumables like but not limited to bituminous, primer, aggregate, dust powder, cotton waste, kerosene, gas, diesel, petrol, lubricants, PVC Pipes for Curing, Hose Pipes, line dori, lime powder, etc and all the required tools & tackles, equipments (as per Annexure-E of Section-F), machineries like JCB, dumpers, tractor with trolley, truck mounted water tankers, diesel generator set, etc..., loading-unloading, transportation, mobilization & demobilization, idle charges of labours, operators, drivers, machineries, equipments during unavailability of front or due to unavoidable circumstances or any reasons whatsoever, safety equipments & PPEs, Royalties, Rents, Stamp Duties, Central or State Government or Local body or Municipal Taxes or Duties or any other duty / tax (excluding GST, applicable GST shall be quoted separately in online price bid), 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 whole 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... as per work requirement.

Any statutory changes in taxes & duties will be to GIPCL's account. In case of any reduction and/or removal of taxes, the same shall be passed on to GIPCL.

Rates will remain firm throughout the contract period and any extension thereof. There will not be any escalation/compensation to the contractor against any revision in MWR (Minimum Wage Rates). However, contractor shall not pay less than the Minimum Wages notified by the Government from time to time to his/her employees of corresponding category.

Contractor shall at his/her expense comply with all labour and industrial laws and such other acts and status as may be applicable to this contract in respect to pay etc. On account of any default in respect of all liabilities and in case of non compliance of the above, the company can withhold their payments till all legal liabilities are discharged.

Contractor shall deploy labour/workers & supervisors in sufficient numbers and quality to ensure workmanship of the degree specified in this contract and to the satisfaction of the Company.

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.

## **2.1 THE TOTAL RATE INCLUDING QUOTED % RATE OF CONTRACTOR,**

- *shall include the cost of all materials (except specified free issue materials by GIPCL), tools & tackles, equipments, machineries as per detail specifications and as per above clause no. 1, cost of labour, operators, drivers, supervision, tools, equipments, mobilizing, demobilizing, fuels, lubricants, oils, setting out, transport, royalties, temporary & permanent works, local taxes & levies (applicable GST shall be quoted separately in online price bid), duties, EC & off duty coverage policy, safety PPEs, overheads, profit, etc... all complete.*
- *shall include octroi, all other taxes like sales tax, turnover tax of Govt. of Gujarat on works contract etc... Bidder shall quote applicable GST separately.*
- *shall be deemed to cover working in adverse condition as well as supervision.*
- *shall be final and firm for the entire contract period including extension, if any, and shall not be subjected to any escalation whatsoever.*
- *Compliance of labour laws and other applicable statutory requirements is to be ensured by the contractor.*
- *The contractor will pay to laborers in line with prevailing minimum wages.*

## **3. CONTRACT PERIOD**

The contract will be for a period of 9 (Nine) months from the date of issue of LOI/Work order whichever earlier.

In any case, contractor shall not be eligible to claim any compensation or reimbursement or price escalation which attributed to poor progress, poor quality work, rework, holding the work by GIPCL in lack of decision or modification, non availability of rubble, in proposed layout or due to any whatsoever reason.

Contractor shall not have any right for time extension or compensation or price escalation on account of delay due to late handing over of particular front by the GIPCL or any other reason whatsoever. However, GIPCL at its sole discretion may grant time extension only against the justifications submitted by the contractor in writing.

GIPCL reserve the right to short close the contract at any time by giving one month notice period without assigning any reason and without any compensation.

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

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

The contractor shall raise the running invoices in duplicate every month in respect of the work performed or completed during the month along with the documents as hereinafter provided. 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 applicable 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 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 successful completion of one year defect liability period from actual contract completion date as certified by Engineer-in-charge as per clause no.: 1 of Section-C
- (iii) GST shall be paid along with bills as applicable.
  - (a) Submission of copy of registration certificate issued by GST Authority (to be furnished only once).
  - (b) Citing GIPCL's GST no. (I.e. 24AAACG7277Q1Z0) along with contractor's GST registration no. and the date of issue of registration certificate on invoices.
  - (c) Claim of GST amount with percentage (%) separately shown on the invoices.
  - (d) The contractor shall be required to submit the proof of payment of GST of previous month/quarter, as may be applicable as & when demanded by GIPCL/Owner/company.
  - (e) Contractor shall inform the Owner (GIPCL) in the event of its registration certificate is cancelled or discontinued for whatsoever reason.
  - (f) Any statutory changes (increase/decrease) in taxes & duties will be to GIPCL's account. In case of any reduction and/or removal of taxes, the same shall be passed on to GIPCL.
- (iv) At the time of submission of the first monthly RA Bill, the Contractor shall submit a certificate from Engineer-in-charge regarding availability of tools & tackles, equipments, vehicles etc at site. 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, Xerox copies of wages register of previous month, Xerox copies 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 entire Contract Period and shall remain unaltered.

**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 (as per mode of measurement) along with joint record of work done in the form of joint inspection report** duly signed by authorized representative of contractor and GIPCL Engineer.
- (ii) Jointly recorded level records.
- (iii) Authorized weighment slips of materials for respective items to be paid in MT through GIPCL's authorized weighbridge.
- (iv) Contractor's supplied material test certificate/reports as directed by Engineer-in-charge.

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, labour compliance records as applicable to this contract.
- (ii) Notarized Indemnity Bond in case of Final bill.
- (iii) No claim - No arbitration certificate as per Performa (Annexure-D) in Section-F), after releasing final bill payment.

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

**7. MEASUREMENT & DAILY REPORTS**

The measurement shall be in item wise unit mentioned in Schedule of Quantity for finished product of work done as per detailed technical specifications mentioned in schedule of quantity.

Measurements shall be in accordance with the unit of measurements specified in schedule of quantity up to three decimal place. Payment will be made for actual work done of finished product as per field joint measurements certified by Engineer-in-charge.

The measurement shall be in item wise unit mentioned in Schedule of Quantity for finished product of work done as per detailed technical specifications mentioned in schedule of quantity.

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

The measurement will be as per the unit of measurement specified in respective item description.

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.

Excavation, Fly ash & Bed ash filling, Granular sub base, Wet mix macadam, Water bound macadam, etc works shall be paid based on joint certified level records before and after completing respective activities as per scope & specifications.

To arrive at weight of the material for payment in MT basis, the Weighment slips of authorized approved weighbridge shall be required to submit with the bill.

7.1 Contractor should maintain one computer with printer for keeping daily records and maintain the data.

7.2 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.

7.3 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.

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

## **8. MOBILIZATION AND EXECUTION**

- a) Contractor shall mobilize the resources at site within 03 days from the time the intimation given by GIPCL.
- b) Contractor shall provide site supervisor who will be responsible for supervision and execution of job in specified time with respect to quality, specifications, site preparations, safety, co ordination with GIPCL, joint measurements, etc... The supervisors shall coordinate with the Engineer-in-charge of GIPCL for proper execution of the job.
- c) Contractor shall provide accommodation for the persons deployed by him for the work at his own cost.
- d) 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 quantities specified are only estimated quantities for tendering purpose only. Payment will be made, based on actual work done as per requirement, as measured at site and certified by Engineer-in-charge of GIPCL as per mode of measurement.

Quantities of individual items may likely to be revised during the course of contract period based on the requirement or any other unavoidable circumstances or due to revision in proposed concepts, etc... whatsoever reason. Contractor shall have no any right for any compensation on ground of such alteration (reduction or augment) in scope of work. The GIPCL reserves the right to operate/increase or 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.

Prices and rates quoted shall be firm for a variation in the total contract price by  $\pm 30\%$  (plus & minus thirty percent) with the provision that quantity of individual items of work may vary to any extent.

If any time after commencement of the work, GIPCL shall, for any reason whatsoever, not require the whole work thereof as specified in the tender to be carried out, the ENGINEER shall inform the fact to the CONTRACTOR, who shall have no claim to any payment of 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.

**10. DEFECT LIABILITY PERIOD**

The defect liability period of whole work shall be One year after completion of contract 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 at free of cost within seven days on receiving the intimation from Engineer-in-charge, failing which GIPCL may take suitable action and also engage third party to carry out rectification work at the risk and cost of the contractor.

**11. 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.

**12. FREE ISSUE MATERIALS BY GIPCL**

The rates are with free issue of Cement and Reinforcement, rubble, bed ash/fly ash unless otherwise specified in the items. All free issue materials shall be issued either from GIPCL store or storage area or silo area on specific request by contractor. Necessary transportation of free issue material is in the scope of Contractor.

Reinforcement steel shall be issued on weight basis and Cement shall be issued in no. of 50 kg bags from GIPCL store. The reconciliation of free issue material shall be done as under:-

- i. The contractor shall keep an up to date record of the materials issued by GIPCL and consumed on the work, in daily register. The contractor shall also submit weekly statements for actual consumption of such materials and stock position with him. The actual consumption shall be calculated based on theoretical quantities worked out from drawing issued by engineer or as jointly recorded measurements on site.
- ii. Contractor shall utilize entire reinforcement steel and structural steel issued to them by providing necessary splices / lapping. The un-avoidable cut balance up to 3% of consumed quantity shall be returned to GIPCL store by weight basis and for this no amount will be recovered.

- iii. The recovery of balance quantity reinforcement steel and structural steel above 3% will be made @ Rs. 50,000/- per MT or at market rate, whichever higher. For cement, the recovery shall be affected at the rate of Rs. 350/- per bag or at market rate, whichever higher for quantities above theoretical consumption. No unaccountable wastage will be allowed. No allowance shall be given for rolling tolerance, burning, due to cutting. Contractor shall give account for entire quantity of steel issued to him i.e. no invisible wastage will be considered / allowed.
- iv. Reconciliation of free issue cement will be made based on following item wise cement consumption factors.

Item No.	Item Descriptions	Unit	Cement Consu. Bag per Unit
1	Providing & laying plain cement concrete 1:4:8	M <sup>3</sup>	3.40
2	Providing & laying plain cement concrete 1:2:4	M <sup>3</sup>	6.80
3	Providing & laying reinforced cement concrete of M25 grade	M <sup>3</sup>	7.80
4	Providing & laying brick masonry of 230mm thick and above in cement mortar 1:5	M <sup>3</sup>	1.55
5	Providing & laying brick masonry of 115mm thick and above in cement mortar 1:5	M <sup>2</sup>	0.22
6	Providing smooth cement plaster avg. 13 mm thick in cement mortar 1:4	M <sup>2</sup>	0.12
7	Providing smooth cement plaster avg. 6 mm thick in cement mortar 1:3	M <sup>2</sup>	0.07
8	Providing smooth cement plaster avg. 20 mm thick in cement mortar 1:4	M <sup>2</sup>	0.19
9	Providing & laying avg. 40 mm thick (1:2:4) Indian Patent Stone flooring	M <sup>2</sup>	0.40
10	Tiles fixing	M <sup>2</sup>	0.12
11	Other than above		As per IS

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## SECTION-E

### PRICE BID FORMAT

Sr. No.	Description	Estimated SoR Value without GST (Rs.)	% Service charge (To be quoted by bidder)	Quoted Amount with Service charge (Rs.)	Applicable GST in % (To be quoted by bidder)	GST Amount in (Rs.)	TOTAL QUOTED AMOUNT WITH GST (Rs.)
(A)	(B)	(C)	(D)	(E) = (C) + ((C)x(D%))	(F)	(G) = (E)x(F%)	(H) = (E) + (G)
	Civil works for development of scrap yard at Power Plant.	42,81,908/-	Above/ Equal/ Below				

**Note:-** (1) Prices shall be quoted through online (n)-Procure only. Hard copy of price bid shall not be considered/accepted.

(2) Evaluation of tender will be done on gross total quoted amount with GST as per above column no. (H)

NAME OF TENDERER : \_\_\_\_\_  
 SEAL & SIGNATURE OF TENDERER : \_\_\_\_\_  
 NAME OF AUTHORISED PERSON : \_\_\_\_\_  
 ADDRESS : \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_ FAX No. \_\_\_\_\_  
 MOBILE NO. \_\_\_\_\_ Email ID. \_\_\_\_\_

## SCHEDULE OF QUANTITIES & RATES

### Civil works for development of scrap yard at Power Plant.

Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
<b>A</b>	<b>Construction of approach road:</b>				
1	Earthwork in excavation below ground level in sub grade in all class of soil and also dismantling the existing WBM road/rubble soling and disposal of debris/excavated soil/stuff outside the plant premises within lead of 10 (ten) kilometer, dressing of the sides and bottom, compacting the using roller etc. complete as directed by Engineer-in-charge.	1262.50	M <sup>3</sup>	147.25	185903.13
2	Filling fly ash under roads etc. including spreading in layers of avg. 20cm/30cm compacted thickness at all depths, watering, consolidation, dressing and properly compacted with power roller to correct line and level and slope etc. complete. Fly ash will be issued from fly ash silos. Necessary transportation by fully covered dumper/truck shall be in the scope of contractor and the remained/unused quantity of fly ash shall be removed from site by the contractor.	693.00	M <sup>3</sup>	199.50	138253.50
3	Providing, laying well-graded approved quality Granular Sub Base material at average thickness of 100mm thick (compacted thickness) over prepared sub grade including watering & compacting using roller. The material shall be laid in one or more layers as sub-base or lower sub-base and upper sub-base (termed as sub-base hereinafter) as necessary according to lines, grades and cross-sections shown on the sketch/drawings or as directed by the Engineer. (The third party testing from approved laboratory shall be arranged by contractor).	64.50	M <sup>3</sup>	950.00	61275.00
4	Providing, Laying, spreading and compacting graded stone aggregate to wet mix macadam (WMM) at average thickness of 150mm thick (Compacted thickness) and including marking of pegs for setting out 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 using loader or paver in sub- base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per clause 406 of Mohr's specification and as directed by Engineer-in-charge.	96.75	M <sup>3</sup>	950.00	91912.50
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 directed by Engineer-in-charge.	645.00	M <sup>2</sup>	33.25	21446.25



Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
6	Providing and laying 75 mm average consolidated thick built up spray grout with Batching 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 Batching Plant or manual as case may be, transporting required hot material at site, spreading, laying & leveling the mix with paver or manually 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.	101.59	MT	1947.50	197846.53
7	Providing, supplying and laying of average 200mm consolidated thickness water bound macadam base coarse in two layers, each of 100mm consolidated thickness using 40 to 63 mm size metal to the specified gradient and camber with approved quality graded stone aggregates, screenings and binding material as quarry dust, including watering using water tanker, compacting by roller etc. complete as per specifications and as directed by Engineer in charge.	376.00	M <sup>3</sup>	1000.00	376000.00
<b>B</b>	<b>Construction of yard:</b>				
8	Labour charges for cutting of Grass/small bushes/vegetation, cutting & up routing of trees and disposal of cut/removed vegetation, bushes, trees, debris etc. outside the plant premises within lead of 08 kms including cost of JCB, dumpers, tractors, consumables, labour, tools, equipment, safety precautions and incidental charges etc. complete as directed by Engineer-in charge.	11300.00	M <sup>2</sup>	5.00	56500.00
9	Earth work in excavation for area grading in all type of soil upto grade level/required level as directed by Engineer-in charge and transportation and disposal of excavated material to the dump sites within the lead of 10 (ten) kms. The quoted rate shall be also including removal of debris, temporary structure (if any), vegetations, unwanted materials and disposal of debris outside the plant premises.	3390.00	M <sup>3</sup>	85.50	289845.00
10	Filling fly ash & bed ash under platform area etc. including spreading in layers of avg. 10cm compacted thickness at all depths, flooding/watering using water tanker, consolidation, dressing, levelling and properly compaction with roller to correct line and level and slope etc. complete. Fly ash/bed ash shall be issued from fly ash & bed ash silos. Necessary transportation by fully covered dumper/truck shall be in the scope of contractor and the remained/unused quantity of fly ash/bed ash shall be removed from site by the contractor.	1130.00	M <sup>3</sup>	199.50	225435.00

Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
11	Providing & laying of compacted avg. 230 mm thick (Minimum 200mm thick) boulder soling in proper line & level with interstices filled with smaller pieces of stone & using bed material/Fly ash including filling all voids by watering/flooding, compaction using roller (if required) etc. complete. The quoted rate shall be including all labour, tools and tackles required for completing the work. Required quantities of rubble shall be given free of cost. However, necessary transportation of available size rubbles from various locations of Lignite Handling System area to work location and segregation of suitable size stone/breaking to required size stone etc. shall be in the scope of contractor. Further, Bed ash/Fly ash of required quantity shall be given free of cost from silo of GIPCL on specific request as available. The rate is including loading, unloading and necessary transportation of bed ash/fly ash up to work site and removal & disposal of remained/unused quantity of boulders, lignite, fly ash, bed ash and debris etc from the work site as per instruction and directive by Engg-in-charge.	11300.00	M <sup>2</sup>	167.15	1888795.00
<b>C</b>	<b>Fencing surrounding scrap material area:</b>				
12	Providing, Supplying, transportation, loading, unloading and fixing of barbed wire fencing with heavy duty pre-cast poles of size 100mmx100mmx2100mm high with 04 nos 3mm dia reinforcement inside the pole. The pole shall be fixed at spacing 2.50 m c/c, bracing poles at every 15 mtr. c/c and at every junction/corner inclusive excavation 300mm dia x 500mm depth, grouting of poles with concrete 1:4:8 mix, tie up 12 gauge barbed wire of TATA make, 5 nos. horizontal rows and 2 nos. cross wire between two poles with supply & fixing of G.I. J bolts, nuts, washers and also including lime painting of all poles, tools & tackles etc. complete... as per sketch/drawing. (The rate is including cost of all material except cement for grouting of pre-cast pole).	425.00	Rmt	427.50	181687.50
13	Providing, supplying, detailing, fabricating as per approved design, transporting to site and erecting in position structural steel gate using approved make & quality structure members conforming to IS: 2062 Grade A, provision of erection bolts, permanent bolts, nuts, washers, welding cleats, stiffeners, gussets, base plates including all operation such as cutting, straightening, grinding, welding, providing erection / permanent bolts, heavy duty hinges, handle, heavy duty aldrop, nuts, washers etc. complete, including painting of gate with two coat of minimum 40 micron DFT High Build ZP Primer and three coats of High Gloss Synthetic Enamel paint, each coat of minimum 25 micron DFT of Dark grey, light grey and smoke grey colour shed on structural steel as per specifications and approved fabrication drawings or as directed by Engineer-in-charge etc all complete. The structure materials & paint for the gate shall be in the scope of contractors. The scope of work also including fixing of structure column (free issue by GIPCL) for gate, alignment of columns, fixing and welding with gate hinges grouting of column	0.75	MT	61750.00	46312.50

Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
	using concrete of 1:2:4 grade etc. complete. The weight of fabricated Gate (without weight of free issue column) shall be considered for payment.				
<b>D</b>	<b>Lockable small room:</b>				
14	Earthwork in excavation below ground level upto 1.5m in foundation, trenches, pits, drains, chambers, etc. in all class of soil including dewatering, shoring, strutting, if necessary, dressing of the sides and bottom, stacking of useful materials as required, back filling with selected excavated materials, compacting the back filling, removing of surplus earth after back filling outside premises at suitable location upto lead of 3.0 kms. etc. complete as directed by Engr.	40.00	M <sup>3</sup>	161.50	6460.00
15	Same as above but for depth from 1.5 m & up to 3.0 m	20.00	M <sup>3</sup>	190.00	3800.00
16	Backfilling to proper grade & level with selected available earth within a plant area including re excavating the deposited earth earlier, breaking clods, laying at all depths and height in layers of avg. 15 cm loose thickness, watering and ramming to compaction, dressing, etc. for general site grading & plinth filling etc. complete	35.00	M <sup>3</sup>	95.00	3325.00
17	Surface dressing of the ground in ordinary soil including removing vegetation, pebbles, aggregates and stacking as directed, excavation / filling upto avg. 150mm thickness, disposal of rubbish and excavated materials to a lead of 1 Km. as directed or outside premises at suitable location, dressing, leveling to required gradient, compacting, etc. complete.	100.00	M <sup>2</sup>	11.40	1140.00
18	Filling fly ash/bed ash under floors, in foundations, plinths, roads etc. including spreading in layers of avg. 20 cm loose thickness at all depths, watering, consolidation, dressing and leveling, etc. complete. (Fly ash of required quantity shall be supplied at work site on specific request and the remained/unused quantity of fly ash shall be removed from site.)	15.00	M <sup>3</sup>	95.00	1425.00
19	Supplying & laying to proper level and slope rubble soling in any thickness as sub base for pavements, floor slabs, etc. including hand packing, wedging, binding using bed material, watering, ramming, manually compacting, dressing, etc. with all materials, labours, etc. complete. (Bed material of required quantity shall be supplied at work site on specific request and the remained/unused quantity of bed material shall be removed)	25.00	M <sup>3</sup>	1235.00	30875.00
20	Providing & laying plain cement concrete 1:4:8 with 20mm downgraded stone aggregates in foundations, floors, etc. including tamping, curing, shuttering the edges, at all depth & thickness etc. complete.(Cement shall be provided by GIPCL but necessary transportation, loading, unloading etc from ware house is in the scope of Contractor)	5.00	M <sup>3</sup>	2280.00	11400.00

Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
21	Providing anti-termite treatment and creating a chemical barrier at top surfaces of plinth, junction of wall and floor along the periphery of building, outside periphery, expansion joints, periphery of wood works, etc. with approved emulsifiable insecticides at the rates and concentrations as per IS 6313 (Part-II) including drilling of holes minimum 200 mm deep -12mm dia. at @ 300 mm c/c, filling with cement after completion of treatment, etc. complete as directed by Engr.	30.00	M <sup>2</sup>	80.75	2422.50
22	Providing & laying plain cement concrete 1:2:4 with 20 mm downgraded stone aggregate in flooring, plinth pavements, grade slab, walkways, etc. including laying in alternate panels, tamping, curing, finishing top surface as required, shuttering, etc. complete. (Cement shall be provided by GIPCL but necessary transportation, loading, unloading etc from ware house is in the scope of Contractor).	10.00	M <sup>3</sup>	2527.00	25270.00
23	Providing & laying reinforced cement concrete of M25 grade up to 1.5m from ground level with 20 mm downgraded stone aggregates in foundations, or super structures for footing, columns, beams, walls, slab, lintels, chajjas, rafts, staircase, facias, coping, auger bore or any other places including leaving pockets, openings, vibrating, curing, etc. complete (excluding cost of shuttering, cement & reinforcement) for the following: (a) For work below Ground level (i) 0.00m. to 1.50m.	3.00	M <sup>3</sup>	2631.50	7894.50
24	Same as above but for depth 1.5m. to 3.0m.	3.00	M <sup>3</sup>	2688.50	8065.50
25	Providing & laying reinforced cement concrete of M25 grade up to 1.5m from ground level with 20 mm downgraded stone aggregates in foundations, or super structures for footing, columns, beams, walls, slab, lintels, chajjas, rafts, staircase, facias, coping, auger bore or any other places including leaving pockets, openings, vibrating, curing, etc. complete (excluding cost of shuttering, cement & reinforcement) for the following: (a) For work above Ground level (i) 0.00m. to 5.00m.	11.00	M <sup>3</sup>	2631.50	28946.50
26	Providing, fixing & removing of form work for concrete works at all depth below and up to ground level for foundations, rafts, pedestals, grade beams, columns, etc. including scaffolding, centering, bracing, providing, openings/ cutouts/ pockets, dewatering etc. complete as per specifications and as directed by Engineer.	50.00	M <sup>2</sup>	213.75	10687.50
27	Providing, fixing & removing of form work for concrete works for height up to 5.0 m for column, beams, chajjas, slabs, walls, coping,, staircase, etc. including scaffolding, centering, bracing, providing, openings/ cutouts/ pockets, etc. complete as per specifications and as directed by Engineer.	100.00	M <sup>2</sup>	213.75	21375.00

Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
28	Labour charges for cutting, lapping, placing and fixing in position of reinforcement bars at all elevations including binding with 18 gauge soft annealed black wire, etc. complete shown on drawings or as directed by Engineer for Mild Steel and High yield strength deformed bars. <b>(Reinforcement steel shall be provided by GIPCL but necessary transportation, loading, unloading, shifting from ware house is in the scope of contractor)</b>	1.75	MT	8417.00	14729.75
29	Providing & laying brick masonry of 230/345 mm thick in cement mortar 1:5 using approved quality locally available bricks, including scaffolding wherever necessary, curing, raking joints, etc. complete as per specifications and drawings at all depth below plinth/grade level. (Cement shall be provided by GIPCL but necessary transportation, loading, unloading etc. from ware house is in the scope of Contractor)	12.00	M <sup>3</sup>	2280.00	27360.00
30	Same as above but for height from grade/Plinth level up to 5.0m.	20.00	M <sup>3</sup>	2470.00	49400.00
31	Providing & laying 115 mm thick brick masonry walls in cement mortar 1:5 including providing RCC mullions ,transoms, 2-10 dia. reinforcement at every fourth layer using approved quality locally available bricks, including scaffolding wherever necessary, curing, raking joints, etc. complete (reinforcement & cement shall be provided by GIPCL but necessary transportation, loading, unloading etc. from ware house is in the scope of Contractor) at all height above grade level.	15.00	M <sup>2</sup>	285.00	4275.00
32	Providing and applying smooth cement plaster avg. 13 mm thick in cement mortar 1:4 for RCC, brick work including scaffolding, curing, etc., complete as per specifications at all height above ground level). (Cement shall be provided by GIPCL but necessary transportation, loading, unloading etc from ware house is in the scope of Contractor)	125.00	M <sup>2</sup>	133.00	16625.00
33	Providing chicken wire mesh before plastering and tying properly with nails at all level as directed.	50.00	M <sup>2</sup>	180.50	9025.00
34	Providing avg. 6 mm thick cement plaster to ceiling in cement mortar 1:3 including scaffolding, curing, etc. complete. as per specifications at all height above ground level	40.00	M <sup>2</sup>	128.25	5130.00
35	Providing exterior sand faced cement plaster avg. 20 mm thick in 2 layers (first layer of 14 mm and second layer of 6mm thickness with waterproofing compound) in cement mortar 1:4 using approved quality sand for second layer finished on RCC, brick work, including scaffolding, curing, etc. complete as per specifications. at all height above ground level. ).(Cement shall be provided by GIPCL but necessary transportation, loading, unloading etc from ware house is in the scope of Contractor)	110.00	M <sup>2</sup>	171.00	18810.00

Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
36	Providing & laying avg. 40mm thick (1:2:4) Indian Patent Stone flooring with cement concrete 1:2:4 using 10mm downgraded black trap aggregates at various elevations, in alternate panels including preparation of base, finishing to line levels & camber, rounding junctions and corners, curing, edge shuttering etc., complete as per specifications and as directed by Engineer. (Cement shall be provided by GIPCL but necessary transportation, loading, unloading etc from ware house is in the scope of Contractor)	20.00	M <sup>2</sup>	218.50	4370.00
37	Providing & laying in required size tiles of NITCO/SPARTEK/BELL /KAJARIA CERAMIC' or its equivalent quality of approved plain shade in floor/ dado over avg. 25mm thick bedding of 1:6 cement mortar, cutting chase in walls as required including pointing of the joints with white cement mixed with colour pigment to match, curing, etc. complete in floors (Basic Rate of tiles shall be Rs. 655/- per M2).	20.00	M <sup>2</sup>	883.50	17670.00
38	Providing & laying approved make approved quality glazed tiles of required size having conforming to IS:777 in floors & dado over avg. up to 25mm thick cement mortar 1:3 bedding as per site requirement directed by Engr.-in-charge including pointing the joints, cleaning, washing, etc. complete as per specification (Basic Rate of tiles shall be Rs. 700/- per M2).	20.00	M <sup>2</sup>	950.00	19000.00
39	Providing & fixing Malaysian sal wood frame from 125mmx65mm size sections for door along with 30mm thick commercial water proof flush door shutters including providing 6 Nos. of hold fasts fixed in concrete block (M-15) for make heavy duty hinges, Iron oxidized fixtures like handles, aldrops stoppers, pagstays, etc. including teakwood edge lipping, etc. with two coats of synthetic enamel paint of approved make and shade over a coat of primer, etc. complete as per design or approved make laminate on both sides as per design.	5.00	M <sup>2</sup>	4417.50	22087.50
40	Providing and fixing in position powder coated aluminum windows having sections of Jindal, Narmada, Banco or equivalent make having section with two track section 61.85 mm x 31.75 mm (weight 0.695 kg/mtr) shutter framing size 40mm x 18mm (weight 0.464 kg/mtr.) mounted on bearing to slide on tracks including 5 mm clear plain sheet glass, PVC track gasket, EPDM rubber gasket on glass of weather tightening along with locks, handle including sealing gap with marble surfaces with silicon sealants making it water proof in all manner, etc. complete at all floor levels. a) Sliding type	7.00	M <sup>2</sup>	4227.50	29592.50

Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
41	Providing and fixing in position powder coated aluminum louvered glass ventilators of adjustable type including with frames having section 50mm x 25mm (weight 0.50 kg/mtr.) glazing cleat section (weight 0.096 kg/mtr) with fixing 4 mm thick clear glass (with Modi/Saint gobain) EPDM rubber gasket on glass of weather tightening along with locks, handle including sealing gap with silicon sealants making frame and glass water tight etc. complete at all elevations as directed.	1.00	M <sup>2</sup>	3847.50	3847.50
42	Providing and painting interior surfaces with two coats of approved first quality Acrylic Distemper paint of approved manufacture, color and shade including cleaning of existing painted surface, removing dirt, dust, loose paint, filling cracks with approved crack filler, filling undulations with POP for making uniform surface (at required place only), scaffolding etc. complete at all elevation with all materials, labour, tools & tackles, safety tools & tackles, including shifting of racks, cupboards, tables etc. for painting of wall and repositioning of the same after completing the work, etc... all complete as directed by Engineer-in-charge.	75.00	M <sup>2</sup>	47.50	3562.50
43	Providing and applying to exterior surfaces two coats of first quality approved exterior emulsion paint of "Berger - Walmasta" or "Asian" make ACE exterior emulsion paint of approved color and shed over a coat of exterior sealer on existing painted surfaces as per manufacturer's recommendations including cleaning of existing surface using wire brush, removing all dirt, dust, filling of cracks with approved crack filler, preparing surface for applying painting evenly ,scaffolding etc. complete at all elevation as directed by Engineer-in-charge with all materials, labour, tools & tackles, safety tools & tackles etc... all complete as direct.	130.00	M <sup>2</sup>	66.50	8645.00
44	Providing & fixing in position 'HINDUSTAN' 'CERA' or its equivalent first quality white glazed vitreous china clay ORISSA' pattern Indian WC pan with 'P' or 'S' trap as required including cutting the wall, floor, if required and making good the same, jointing inlet & outlet connections, etc. complete as directed by Engr for the following: a) ORISSA' pattern WC pan of 580 mm size (Basic rate Rs. 2,000/-)	1.00	No.	2755.00	2755.00
45	Providing & fixing white glazed vitreous China clay HINDUSTAN' 'CERA' or its equivalent first quality wash hand basin of 550mm x 400mm size with CI brackets including grouting the C.I. bracket in wall with cement concrete, jointing inlet & outlet connections, etc. complete as directed. Basic rate of wash basin Rs. 1,000/-	1.00	No.	1900.00	1900.00
46	Providing & fixing white glazed flat back urinals HINDUSTAN' 'CERA' or its equivalent first quality of 465 x 365 x 265 mm size including CI brackets, fixing with screws in wall, inlet, outlet connections, etc. completed. Basic rate of Urinal Rs. 750/-	1.00	No.	1710.00	1710.00

Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
47	Providing & fixing mirror of Gold fish, Atul Modi or equivalent quality mirror glass of size 550 x 400 x 5 mm thick with 6 mm thick marine plywood/ pvc sheet back including PVC frame, hook for fixing on wall, with necessary rawal plugs, screws, etc. complete with all labour and materials. Basic cost of mirror with back sheet & accessories Rs. 950/-.	1.00	No.	1045.00	1045.00
48	Providing & fixing approved quality C.P. brass towel rail of 20 mm dia x 600 mm long including C.P. brass brackets, fixed with wooden cleats and CP brass screws, etc. complete.	1.00	No.	570.00	570.00
49	Providing & fixing superior quality stainless steel soap dispenser with CP brass screws, etc. complete. Basic rate Rs. 700/-	1.00	No.	912.00	912.00
50	Providing & fixing CP brass L&K, crown, prince or equivalent quality fixtures of 1/2" dia,(15 mm) including fixing of new fittings with Teflon or holdtight, removing of existing fixtures, etc. complete for the following:	1.00	No.	679.25	679.25
51	(a) Bib Tap (Basic rate Rs. 550/-)	1.00	No.	679.25	679.25
52	(b) Pillar tap (Basic rate Rs. 550/-)	1.00	No.	679.25	679.25
53	(c) Stop cock (Basic rate Rs. 400/-)	1.00	No.	522.50	522.50
54	(d) Angle cock (Basic rate Rs. 400/-)	1.00	No.	522.50	522.50
55	(e) Reinforced PVC inlet pipe up to 600mm long (Basic rate Rs. 85/-)	2.00	No.	142.50	285.00
56	(f) C P heavy duty bottle trap (Basic rate Rs. 1,000/-)	1.00	No.	1140.00	1140.00
57	(g) Cera or equivalent approved make Urinal brass Spreader (Basic rate Rs. 610/-)	1.00	No.	688.75	688.75
58	Providing & fixing PVC flushing tank of champion or its equivalent quality with necessary fittings, etc. complete (basic price Rs. 900/-).	1.00	No.	1045.00	1045.00
59	Providing & fixing 150 mm square heavy duty stainless steel jali of approved quality on floor trap etc. complete. Basic price Rs. 250/-.	2.00	No.	266.00	532.00
60	Providing & fixing Hindware or equivalent approved CP brass waste coupling for wash basins and sinks (heavy duty) 32 mm dia. etc. complete. (Basic price Rs. 250/-)	2.00	No.	332.50	665.00
61	Providing & fixing PVC spiral pipe with PVC socket for urinal / wash basin outlet. (Basic price Rs. 250/-)	2.00	No.	332.50	665.00
62	Providing & fixing approved quality heavy duty Nahni trap (Basic price Rs. 200/-) of Prince / Supreme or its equivalent quality including fixing, jointing, testing, etc. complete.	2.00	No.	332.50	665.00
63	Providing & Fixing CPVC pipes SDR-13.5 confirming to IS: 15778 of Prince/Supreme/Astral make for domestic water supply including cutting, making threads at all floor levels including fixtures like bends, tees, shoe, elbow, union, nipple etc joined with IPS WELD ON solvent cement or equivalent resin of approved brand & manufacture etc. complete for (A) concealed and Underground work: (a) Up to 15 mm dia. (Basic rate Rs. 70/- per M)	5.00	RM	145.35	726.75



Sr. no.	Item Descriptions	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
63	(b) Up to 25 mm dia (Basic rate Rs. 150/- per M).	150.00	RM	271.70	40755.00
64	Construction of manhole in 230 mm thick brick masonry in cement mortar 1:4, 75 mm thick cement concrete 1:2:4 at bottom, 15 mm- trial smooth cement plaster to inside surfaces, chamfering /vata at bottom, NECO make heavy duty CI cover including necessary excavation, backfilling, curing, pipe connections, etc. complete as per specifications & drawing. (a) For 300 x 300 mm size chamber with a gully trap.	1.00	No.	1482.00	1482.00
65	(b) For size 600 x 600 & depth up to 750 mm.	1.00	No.	2945.00	2945.00
66	(c) For 750 x 750 mm & depth 1000 mm.	1.00	No.	5890.00	5890.00
67	Providing & fixing Supreme/ prince make rigid PVC down take pipes / fittings of 150 mm dia including fixing solution, GI clamps, etc. at all elevations. clamps, etc. a) Pipes (Pipe purchase by with vat P/rmt 505.5 6 kg/smt)	10.00	RM	209.00	2090.00
68	Same as above item but for 100mm dia.size. (a) Pipes (Pipe purchase by with weight P/rmt 237.5 6 kg/smt)	10.00	RM	171.00	1710.00
69	Providing & fixing sintex tank with all fittings & fixtures, etc as per details mention below: Brand - Sintex, Sub Brand - Titus, Variant - Triple Layer, Capacity - 1000 ltrs. 100% UV stabilized, Made up of 100% virgin material, Threaded lid, Extra insert lid for protection from algae formation, ISI Marked. FDA approved as directed by Engineer in Charge	1.00	No.	10000.00	10000.00
70	Providing, supplying & applying/fixing of average 03mm thick APP (Atactic Polypropylene Polymer) modified and reinforced with Polyester matt (about 160 Gram/M2) waterproofing membrane (Min. 3.50 Kg/M2) of approved makes as specified in detail tender document, which consisting of a coat of approved low viscous bituminous primer (maximum 0.20% water content) at about 250 gms per sqm of approved make. Over the primer coat, the membrane shall be laid using torch and sealing all joints with minimum side overlap of 100mm & minimum end lap shall be 150mm and preparing the surface etc... including providing, supplying & applying two coats of Ultra Violet (UV) resistance approved make bitumen based aluminum finish anti corrosive premium quality protective coating with paint brush above the APP membrane for the UV protection and for the longer life of membrane after proper cleaning of surface etc... complete as per manufacturer's specifications for all such locations as directed by Engineer-in-charge.	50.00	M <sup>2</sup>	418.00	20900.00
	<b>Total estimated SoR value &gt;&gt;&gt;</b>				<b>4281908.15</b>

**Note:** The rates shall include all cost of manpower, materials (except free issue of rubble, bed/fly ash materials, cement and reinforcement) equipments, supervision, consumables, tools, tackles, all taxes & duties (Excluding GST).

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## SECTION-F LIST OF ANNEXURES & FORMS

### 1.0 ANNEXURE-A (Whichever is applicable)

#### CHECKLIST FOR PASSING THE BILLS

- |  |   |   |        |
|--|---|---|--------|
|  | : | For the month of :                                  |        |
| 1) Work Order / P.O. No. & Contract value                      | : |   |        |
| 2) Nature of work  | : |   |        |
| 3) Duration of Work Order                                      | : | From                      to                        |        |
| 4) Maxi. No. of manpower per day deployed in the month.        | : | M                      F                      Total |        |
| 5) Details of Labour License                                   | : | Valid up to                      for<br>Persons.    |        |
| 6) Details of E.C Policy                                       | : | Valid up to                      for<br>Persons.    |        |
| 7) Documents attached for verification for the previous month. | : | Wage & Attendance Sheets.                           | Yes/No |
|  | : | P.F Challan   | Yes/No |
| 8) Documents attached for verification (in case of Final Bill) | : | Bonus Payment Register                              | Yes/No |
|  | : | Leave wage register                                 | Yes/No |
| 9) Security Deposit / Retention Money lying with Co.           | : | Yes / No if yes, Rs.                                |        |

Date :

Signature of Contractor  
with official stamp

## 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 180 days 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 (SLPP)  
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**

### **EQUIPMENTS, TOOLS & TACKLES TO BE OWNED BY CONTRACTOR**

<b>Sr. No.</b>	<b>Descriptions</b>	<b>Minimum Quantity</b>
1.	Concrete Mixer Machine	1 no.
2.	Petrol Concrete vibrator	1 no.
3.	Vibrator needles (40 mm)	2 no.
4.	Shuttering material	50 sq.mt.
5.	Staging & Scaffolding material	As per requirement
6.	Dewatering pump with hose pipe	1 no.
7.	Concrete cube mould	6 nos.
8.	Concrete drill machine	1 no.
9.	Tractor with trolley	3 no.
10.	Dumpers	04 no.
11.	Truck mounted Water tanker	01 no.
12.	Vibro Road roller & JCB	As per requirement
13.	Earth compactor	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.



**6.0 ANNEXURE-F**



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

**SCHEDULE OF DEVIATION**

All the deviations from the general and special conditions of contract shall be filled by BIDDER clause by clause in this schedule.

Sr. No	SECTION	CLAUSE NO	AS PER TENDER DOCUMENT	DEVIATION

The bidder here by certifies that the above mentioned are the only deviations from GIPCL's General/ Special Conditions of this enquiry. The bidder further confirms that in the events any other data and information presented in the BIDDER's proposal and accompanying documents are at variance with specific requirements laid out in the GIPCL's General /Special Conditions, then the latter shall govern and will be binding on the BIDDER for quoted price.

COMPANY SEAL

SIGNATURE .....

NAME .....

DESIGNATION .....

COMPANY .....

DATE .....

## 7.0 **ANNEXURE-G**

*(To be submitted on Company's Letter Head)*

### **Declaration Cum Undertaking for Safety Laws and Regulations Compliance**

I \_\_\_\_\_ on behalf of .....Name of Party/Company.....hereby confirm, agree and undertake that all the Statutory and Safety Laws and Regulations of the applicable Authority/ies shall be strictly followed for all types of works at the site during the period of the Contract, if awarded to me.

Further, I .....Name of Party/Company..... also hereby confirm, declare and undertake that there has not been any major Safety Violation and any single Fatal Accident during the execution of the contracts awarded to me covering the scope and area of work of this Tender during the period of preceding Three years.

PLACE:

DATE:

Signed and Stamped by the  
Authorized Signatory  
Of the Bidder \

---

## 8.0 **ANNEXURE-H**

*(To be submitted on Company's Letter Head)*

### **Declaration for Contractual Disputes/ Litigations**

I \_\_\_\_\_ on behalf of ..... (Name of Party/Company) hereby confirm that I/We have not been engaged in any Industrial Dispute(S) or have invoked legal recourse e.g. Arbitration and/or litigation against any Govt. of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations for the last Five (05) years. There are no ongoing/pending legal matter(s) with any of the Govt. of Gujarat Undertakings / GoG supported Companies, including GIPCL.

I/We also confirm that M/s. .... (Name of Party/Company) have not been Blacklisted/ deregistered / listed under stop Deal by any Govt. of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations, including GIPCL for the last Five (05) years.

The above is true, as on date, to the best of my knowledge. Any breach/ false statement in this regard shall amount to disqualification of the Bid being submitted herein.

PLACE:

DATE:

Signed and Stamped by the  
Authorized Signatory of the Bidder

**9.0 Form-A**

**List of qualifying staff to be submitted with physical documents**

Sr. No.	Name of Supervisor	Qualification	Experience

Contractor / Authorized Representative's  
Signature, Company's / Organization's Seal & Date

**10.0 Form-B**

**List of Tools & Tackles to be submitted with physical documents**

Sr. No.	Description	Nos.	Status

Contractor / Authorized Representative's  
Signature, Company's / Organization's Seal & Date

## **SECTION G**

### **TECHNICAL SPECIFICATIONS**

#### **1. STANDARD MAKES FOR MATERIALS**

**(To be used and strictly followed for the work Tendered)**

- |                         |                                      |
|-------------------------|--------------------------------------|
| 1. Barbed wire          | : Tata Make                          |
| 2. Over head Tank       | : Triple Layer Sintex make           |
| 3. APP Sheet            | : 3mm thick Shalimar/Asian/Ticky Tar |
| 4. PVC/CPVC Pipes       | : SUPREME/ASTRAL/PRINCE              |
| 5. SANITARY ITEMS       | : HINDUSTHAN/CERA                    |
| 6. PAINTS AND PRIMER    | : BERGER/ASIAN                       |
| 7. ALUMINIUM SECTION    | : JINDAL/NARMADA/BANCO               |
| 8. FLOOR AND WALL TILES | : NITCO/SPARTEX/BELL/KAJARIA         |
| 9. STRUCTURE STEEL      | : TATA/SAIL/JINDAL/BALBIR            |

REST MATERIAL AS PER ITEM DESCRIPTION.

SIGNATURE AND SEAL OF THE CONTRACTOR:

NAME AND ADDRESS:

DATE:

## 2. TECHNICAL SPECIFICATIONS

### 2.1 PREAMBLE

1. In the specification “as directed” / “approved” shall be taken to mean, “as directed /approved by the Engineer-in-charge”.
2. Wherever a reference to any Indian Standard appears in the specifications, it shall be taken to mean as a reference to the latest edition of the same in force on the date of agreement.
3. In “Mode of Measurement” in the specification wherever a dispute arises in the absence of specific mention of a particular point or aspect, the provisions on these particular point or aspects in the relevant Indian Standards shall be referred to.

4. All measurements and computations, unless otherwise specified, shall be carried out nearest to the following limits:

(i)	Length, width and depth (height)	.....	0.01 Mt.
(ii)	Areas.	.....	0.01 Sq.mt.
(iii)	Cubic Contents	.....	0.01 Cu.mt.

In recording dimensions of work.

The sequence of length, width and height (depth) or thickness shall be followed.

5. The distance, which constitutes lead, shall be determined along the shortest practical route and not necessarily the route actually taken. The decision of the Engineer-in-Charge in this regard shall be taken as final.
6. Where no lead is specified, it shall mean “all leads”.
7. Definite particulars covered in the items of work, though not mentioned or elucidated in its specifications shall be deemed to be included therein.
8. Any material specified in detail specification of items shall be of quality and property as mentioned in the respective general specifications of materials mentioned in this tender.
9. Approval of the samples of various materials given by the Engineer-in-Charge shall not absolve the contractor from the responsibility of replacing defective material brought on site or materials used in the work found defective at a later date. The contractor shall have no claim to any payment or compensation whatsoever on account of any such materials being rejected by the Engineer-in-Charge.
10. The contract rate of the item of work shall be for the work completed in all respects.
11. No collection of materials shall be made before it is got approved from the Engineer-in-Charge. Collection of approved materials shall be done at site of work in a systematic manner. Materials shall be stored in such a manner as to prevent damage, deterioration or intrusion of foreign matter and to ensure the preservation of their quality and fitness for the work.

12. Materials, if and when rejected by the Engineer-in-Charge, shall be immediately removed from the site of work.
13. No materials shall be stored prior to, during and after execution of a structure in such a way as to cause or lead to damage on overloading of the various components of the structure.
14. All work shall be carried out in a workmanlike manner as per the best techniques for the particular item.
15. All tools, templates, machineries and equipments for correct execution of the work as well as for checking lines, levels, alignment of the works during execution shall be kept in sufficient numbers and in good working condition on the site of the work.
16. The mode, procedure and manner of, execution shall be such that it does not cause damage or over-loading of the various components of the structure during execution after completion of the structure.
17. Special modes of construction not adopted in general Engineering practice, if proposed to be adopted by the contractor, shall be considered only if the contractor provides satisfactory evidence that such special mode of construction is safe, sound and helps in strength and quality. Acceptance of the same by the Engineer-in-Charge shall not, however, absolve the contractor of the responsibility of any adverse effects and consequences of adopting the same in the course of execution of completion of the work.
18. All installations pertaining to water supply and fixtures thereof as well as drainage lines and sanitary fittings shall be deemed to be completed only after giving satisfactory tests by the contractor.
19. The contractor shall be responsible for observing the rules and regulations imposed under the “Minor Minerals Act” and such other laws and rules prescribed by Government from time to time.
20. All necessary safety measures and precautions (including those laid down in the various relevant Indian Standards) shall be taken as also of the work itself.
21. The testing charges of all materials shall be borne by the Contractor.
22. Approval to any or the executed items for the work does not in any way relieve the contractor of his responsibility for the correctness, soundness and strength of the structure as per the drawings and specifications.
23. All works shall be carried out strictly as per detailed technical specification provided in the tender. If not specified, the work shall be executed according to relevant applicable IS codes and standard engineering practice. In such case decision of the Engineer-in-charge shall be final and binding to the contractor and in no case the contractor will claim any extra for the same.
24. If Tenderer feels that detail technical specifications for items mentioned in Schedule “B” are not provided with the tender, he will raise such points before quoting rates and submitting the tender. No claim on the basis of such argument shall be entertained during the course of work.

25. All measurements shall be considered as mentioned in the drawings / schedule / detail specifications.
26. If Tenderers need any clarifications, they should obtain the same in writing from Owner/Engineer-in-charge.

mm	Millimetres
cm	Centimetres
mt.	Metres
Km.	Kilometres
Sqm	Square Metres
Cum .	Cubic Metres
R.Mt.	Running Metres
No.	Numbers
C.I.	Cast Iron
R.C.C.	Reinforced Cement Concrete
Wt.	Weight
Kg.	Kilogramme
M.T.	Metric Tonne
M.D.	Metre Depth
M.S.	Mild Steel
I.S.	Indian Standard

SIGNATURE AND SEAL OF THE CONTRACTOR

NAME AND ADDRESS:

DATE:

### **Item no A1**

Earthwork in excavation below ground level in sub grade in all class of soil and also dismantling the existing WBM road/rubble soling and disposal of debris/excavated soil/stuff outside the plant premises within lead of 10 (ten) kilometer, dressing of the sides and bottom, compacting the using roller etc. complete as directed by Engineer-in-charge.

#### ***Excavation :-***

##### **1.1. Excavation:**

The excavation shall be carried out in true line and level and shall have the width and depth as shown in the sketch/drawings or as directed by Engineer in charge suit to site. Earthwork in excavation or backfilling using approved soil/ash shall be carried out to make suitable profile as per sketch/drawing including removal of vegetations, bushes, shrubs, trees etc and dressing the sides and bottom in proper line and level, backfilling as requires, compaction of filled soil/ash with earth compactor etc.. as per dimensions mentioned in drawing or suit to site as directed by Engineer in charge.

##### **1.2 Disposal of excavated materials:**

Unsuitable materials obtained from clearing site and excavation shall be disposed off within a lead of 10.00 kms. as directed. Useful materials obtained from clearing site and excavation shall be stacked within lead of 3.0 Km and shall be used for backfilling after completion of work as directed.

##### **1.1.4 Mode Of Measurement And Payment:**

The measurement for payment shall be the actual work done of excavation based on initial level record and final level record. No additional measurement shall be given for cutting & removal of vegetations, bushes, shrubs, trees and site cleaning works. No separate payment for backfilling using available soil. However, backfilling shall be measured which will be done using ash by transporting. The contractor shall take into account in his rate the provision for any excess excavation, backfilling with available earth & re-filling not shown in drawing.

No extra payment shall be made for temporary pumping of water/sewage due to abnormal adverse conditions/climate. Sub soil water may envisaged during execution of work. All such activities shall deemed to be included in rates.

The contractor shall maintain detailed joint record of ground level and finished work.

### **Reinforced Cement Concrete (RCC)**

#### **2.1.0 Material:**

As approved

#### **2.2.0 Proportioning Mix:**

The mix of fine and course aggregates, cement and water shall be design by preliminary test to give the densest concrete requiring the minimum quantity of cement paste for binding the materials to give the required strength. Water content and the water cement ratio shall be determined from the results of



preliminary tests of concrete to give the specified strength with the materials proposed for actual use in the work carried out before the work is started, adopting the consistency suitable for the work and method of compaction that will be actually used on site subject to the water cement Ratio as per IS codes tabulated separately.

2.3.0 Test:

Test shall confirm to the specification laid down in I.S. 456. These test shall be got done in an approved laboratory at the cost of contractor.

2.3.1 Preliminary Tests:

In preliminary test, three separate tests shall be carried out on samples collected from different stacks, each test shall be carried out with six samples of 15cm. (about 6”) cubes and 3 of these shall be tested at 7 days and 3 at 28 days.

2.3.2 Work Test:

For each of the works test, 6 samples shall be prepared from the concrete used on the work 3 samples being tested at 7 days and the remaining 3 samples at 28 days. Works test shall be carried out on each of the first six days and subsequently once in three working days or for every 60 cu.m. of concrete whichever is less and also whenever the quality or grading of the materials is changed. When a relation between the strengths at 7 days and 28 days is established only 3 samples may be prepared and tested at 7 days only, this normal number of control specimen test may be increased if the Engineer considers it necessary.

2.4.0 Field Mix:

The actual proportions of the fine and coarse aggregates will be determined by preliminary tests. In the works tests, bulkage of sand due to moisture if any, should be allowed for different batches according to the moisture actually present at the time of mixing. This moisture will be taken into account in controlling the mixing water also. The proportions once fixed by preliminary tests shall not be changed so long as the materials are the same, subject only to the quantities of fine aggregate and water being adjusted to compensate for bulkage due to the moisture in sand and free water in fine aggregate at the time of use.

No change of materials shall be allowed unless fresh tests with new materials show satisfactory results.

Water and cement content per batch of concrete as determined by preliminary test shall be maintained constant except for suitable allowances to be made for surface moisture of the aggregate at the time of actual use.

Immediately upon the receipt of the award of the contract, the contractor shall inform the Engineer-in-charge the exact location of the sources of the acceptable materials which he proposes to use get the materials approved. The mix with the actual approved materials to be used shall be got designed in an approved laboratory by the contractor with minimum water cement ratio as specified later in this specification to give the specific strength in the preliminary tests and the proportions got approved by the Engineer-in-charge in writing. These proportions

shall be used so long as the materials contains to be of the same quality and from the same sources subject only to slight changes in the relative quantities of fine and coarse aggregates for the purpose of promoting workability provided the works tests also show the required strengths. If during the progress of the work, the contractor wishes to change the materials, the proportion shall be fixed on the basis of fresh preliminary tests to give the required strength after the Engineer-in-charge is satisfied that the materials satisfy the specifications. No adjustment of the cost shall be made for change of proportions of cement mixed in the original preliminary tests.

#### 2.5.0 Maximum Water Cement Ratio:

Sr. no.	Type of concrete	Mix Strength	Maximum water cement ratio
1.	Reinforced concrete	(a) M-250	0.50
		(b) M-200	0.55
		(c) M-150	0.60

#### 2.6.0 Proportioning of Field Mix:

The proportion of sand and coarse aggregate shall be determined by weight. The weigh-batch machine shall be used for maintaining proper control over the proportioning of aggregates as per mix design. The mix proportion shall be allowed either by volume or by weigh batcher. The decision of Engineer-in-charge shall be final

#### 2.7.0 Workmanship:

##### 2.7.1 Detail specifications for Concrete:

Concrete: Generally all concrete shall be as per IS 456

##### 2.7.2 Cement:

The cement shall be ordinary Portland Cement confirming to IS:269. Under special circumstances other cements may be used with prior approval of Engineer-in-charge.

##### 2.7.3 Aggregates:

Aggregates shall comply with the requirements of IS:383 . Generally aggregates having a nominal size of 20 mm shall be used. Coarse and Fine aggregates shall be batched separately.

##### 2.7.4 Water:

Water used for mixing and curing shall be as per Clause 4.3 of IS:456.

2.7.5 Admixtures:

Admixtures such as plasticizer/super plasticizer may be used with prior approval of the Engineer-in-charge.

2.7.6 All reinforcement shall be free from loose mill scale, loose rust, and coats of paints, oil, mud or other coatings. The Contractor shall clean the reinforcement by using wire brush, rubbing with gunny bags, light acid itching etc. as required.

2.7.7 Grades of concrete to be used shall be M10, M15, M20, M25,.

2.7.7.1 Minimum cement content for different grades of concrete shall be as follows:

Grade	Minimum cement content in Kg.
M-100	200
M-150	300
M-200	345
M-250	390

2.7.7.2 Workability of concrete shall be as per Clause 6.0 of IS:456.

2.7.7.3 Durability :- In order to provide/produce durable concrete with low permeability, it must have an adequate cement content and a low water cement ratio. By using strong, dense aggregates, sufficient low water cement ratio, ensuring through compaction and sufficient hydration of cement through proper curing methods, a sufficient low permeability is achieved. Therefore cement content shall be sufficient to provide adequate workability with a low water cement ratio so that concrete can be completely compacted with the means available.  
The permissible limits of chlorides and sulphate in concrete shall be as per Appendix A of IS 456.

2.7.8 Concrete Mix Proportioning :- The mix proportions of cement, aggregates and water for different grades of concrete shall be determined by designing the concrete mix. (Controlled concrete weigh batch). The Designed Mix Concrete when fresh shall have required workability suitable for the conditions of handling and placing so that after compaction it surrounds all reinforcements, and completely fills the formwork. When the concrete is hardened it shall have the required strength, durability and surface finish. For this purpose the Contractor shall establish a well equipped concrete testing laboratory at site. Different grades of concrete shall be designed in the laboratory. Necessary preliminary works cube tests shall be carried out by relevant Indian Standards. The results of these shall be sent to Consultant for their comments/approval/suggestion for modification of Design Mix.

2.7.8.1 Strength Requirement of Concrete:

Where ordinary portland cement conforming to IS:269 or portland blast furnace

cement conforming to IS: 455 is used, the compressive strength requirements for various grades of concrete, controlled as well as ordinary shall be as given in Table-1. Where rapid hardening portland cement is used, the 28 days compressive strength requirement specified in Table-1 shall be met at 7 days. For controlled concrete, the mix shall be so designed as to attain in preliminary tests, a strength at least 33 percent higher than that required on work tests, for concrete mix upto and including M-200 and 25 percent higher for higher strengths. Preliminary tests need not be made in case of 'ordinary concrete'.

Grade of concrete	Compressive works strength in kg/cm <sup>2</sup> on 150mm cubes as per testing conducted in accordance with IS:516	
	Min. at 7 days	Min. at 28 days
M-100	70	100
M-150	100	150
M-200	135	200
M-250	170	250

Note :-In all cases, the 28 days compressive strength specified in Table-1 shall alone be the criterion for acceptance or rejection of the concrete.

When the strength of a concrete mix, as indicated by tests, lies in between the strength for any two grades specified in Table-1, Such concrete shall be classified for all purpose as concrete belonging to the lower of the two grades between which its strength lies.

#### 2.8.0 Mixing:

For all important works concrete shall be mixed in a mechanical mixer at the site of work. Care shall be taken to see that the mixer and other accessories are in first class working condition and maintained so throughout the construction. Mixing shall be continued till there is a uniform distribution of the materials and a uniform colour is obtained and each individual particle of the coarse aggregate shall show a complete coating of mortar continuing its proportionate amount of cement. In no case mixing shall be done for less than 1 minutes. The water cement ratio shall be as tabulated in the para of water cement ratio.

#### 2.9.0 Transporting:

The concrete shall be handled from the place of mixing to the final position as quickly as practicable by methods which will prevent segregation and loss of ingredients. In no case shall be operation taken more than 15 minutes.

#### 2.10.0 Placing:

The concrete shall be placed into its final position, compacted and finished within 30 minutes of mixing the water and before setting commences. The method of placing shall be such as to avoid segregation. Placing shall be done in a balanced manner to avoid eccentric loads on formwork. 100 mm dia. PVC pipes across the width of road shall be provided at 30 meter spacing before starting concreting. The rate of M20 concrete shall include providing and laying of 100mm dia. PVC pipes at 30 meter spacing.

As far as practicable the concrete for a particular portion shall be done in one continuous operation. The construction joints when required shall be made only where located on the plans or shown in the pouring schedule unless otherwise approved by the Engineer. The joint shall be regular and vertical and shall be made by placing a bulkhead at the joint. Before commencing subsequent concreting all loose particles, laitance etc. shall be removed and the surface shall then be covered by thick cement slurry as part of placement. Care shall be taken during the placing not to disturb the forms or the reinforcement. Concrete compacted manually if permitted shall preferably be laid in layers of 15cm to 20cm (about 6” to 8”) the layers being decided by the time lapse between the successive layers. The time of laying one layer shall not exceed 30 minutes. The successive layers shall commence within 30 minutes.

Where work is to be resumed on a surface which has hardened, such a surface shall be roughened and scrubbed with brushes to remove laitance, care being taken to avoid dislodgment of coarse aggregate, swept clean, thoroughly wetted and covered with 6 mm (about ¼”) thick mortar layer composed of cement and sand in the same proportional as the cement and sand in the concrete immediately before the commencement of concrete for securing good bond.

The concrete shall be normally laid in the dry. If the area is under water it shall be pumped dry and kept so while placing concrete and till it sets. Where it is necessary to deposit concrete under water, it shall be done as per I.S. 456. No extra payment will be made for the special arrangements, plant etc. need for the purpose or for the addition 10 percent cement required to be added.

Where cold construction joint is unavoidable as agreed by Engineer in charge, contractor shall use Nito bond chemical before placing of fresh concrete over the surface, strictly as per manufacturer’s instructions.

#### 2.11.0 Compacting:

The concrete shall be thoroughly compacted during depositing to get a dense concrete by use of mechanical vibrators.

The vibrators shall have not less than 3,600 and preferably about 5,000 impulses per minutes and shall be worked at an interval of about 60cm (about 2’). It shall be worked in one place for only such time as will allow formation of dense concrete without sinking and segregation of the coarse aggregate. Over vibration shall be avoided. Vibration shall be aided by spading and rodding.

#### 2.12.0 Curing:

Immediately after compaction, concrete shall be protected against harmful effects of weather including rain, running water, shocks, vibration, traffic, rapid temperature changes, frost and drying out process. It shall be covered with wet sacking, hosing or by hesian cloth or other similar absorbent material approved, soon after the initial set and shall be kept continuously wet for a period of not less than 14 days from the date of placement. Masonry work over foundation concrete may be started after 48 hours of its laying but curing of concrete shall be

continued for a minimum period of 14 days.

2.13.0 Finishing:

Immediately after the removal of forms, any undulations, depressions, cavities, honeycombing, broken edges or corners, high spots and other defects shall be made good and finished with cement mortar 1:2, But the necessary of such finishing must be exceptional and the total surface requiring finishing shall not exceed 1 percent on an average. If the initial experience shows that this percentage is exceeded the method of working itself should be changed to get the required cast finish.

Where the concrete surface is to receive plaster, the surface shall be roughened immediately after removal of forms and within a day thereof to secure a hold for the plaster. The rate for concrete is inclusive of this roughening and finishing. Concrete after finishing shall be cured for the full period.

2.14.0 Retempering:

Concrete shall be mixed only in such quantities as are required for immediate use and any concrete which has developed initial set shall not be used. Concrete which is partially hardened shall not be retempered or remixed but shall be destroyed or thrown away.

2.15.0 Sampling And Testing:

Sampling of materials and concrete shall be done carefully by the contractor under the direct supervision of the Departmental staff as per I.S. 456 at the cost of the contractor, All necessary labour, materials, equipment etc. for sampling, preparing test cubes, curing etc. shall be provided by the contractor. Testing of the materials and concrete will be arranged by the Department in an approved laboratory at the cost of the contractor. No plea will be entertained later on the ground that casting of the test specimen was faulty and that the result of the test specimen was faulty and that the result of the test specimen did not give a correct indication of the actual quality of concrete.

After the relation between strengths at 7 days and 28 days is reliably established for the particular set of materials from the same sources, subsequent tests may be carried out only on three cubes at 7 days. If the average strength of the cubes shows ultimate compressive strength less than the above, the Engineer shall have a right to order a change in the mix or water content for the remaining concrete without extra cost. Defective concrete having strength below 80 percent of the required strength liable to be rejected. Concrete of strength upto 80 percent of the required strength may be accepted as substandard work at a reduced rate provided such weak concrete is restricted to such members and in such quantities as will not endeavor the safety of the structure.

2.16.0 FORM WORK:

2. 16.1 Materials:

The shuttering to be provided shall be of timber planks, steel plates, MS channel

or marine ply as and shall conform to required and ordered to be used by the Engineer in charge and shall conform to M:26 and relevant I.S. codes for the said materials.

The dimensions of scantlings and battens or steel shall conform to the design. The strength of the material shall not be less than that assumed in the design.

2. 16.2 Workmanship:

The dimensions of all the materials used shall conform to the design, the strength of which shall not be less than that assumed in the design.

2. 16.3 Cleaning & Treatment Of Forms:

All rubbish, particularly chippings shaving and saw dust shall be removed from the interior of the form before the concrete is placed and the form work in contact with concrete shall be cleaned and thoroughly wetted or treated. The surface shall be then coated with soap solution applied before concreting. The soap solution, for the purpose shall be prepared by dissolving yellow soap in water to get consistency of paint. Alternatively a coat of raw linseed oil/ or form oil of approved manufacturer may be applied in case steel shuttering is used, soap solution or raw linseed oil shall be applied after thoroughly cleaning the surface.

Care shall be taken that the coating does not get on construction joint surface and reinforcement bars.

2.16.4 Stripping Time:

In normal circumstances and where ordinary cement is used forms may be struck after expiry of following periods

	PERIOD
(a) Sides of walls columns and Vertical faces of beams.	24 to 48 hours.

2.16.5 Procedure When Removing The Form Work:

All form work shall be removed without such shock or vibrations as would damage the reinforced concrete surface. Before the soffit work and struts are removed, the soffits and the concrete surface shall be exposed where necessary in order to ascertain that the concrete has sufficiently hardened.

2. 16.6 Re-Use:

Before re-use all forms shall be inspected by Engineer in charge and their suitability ascertained. The forms shall be scarred, cleaned and joints gone over, peoaired where required, inside surface shall be retreated to prevent adhesion of concrete.

2.16.7 Keeping Record:

A day record authenticated by a responsible officer of the department and the representative of the contractor in the perform approved by the Engineer shall be maintained by the contractor on the work site and kept open for inspection. This shall contain important information such as receipt of cement of starting concreting and closure number of batches through the mixer, source of water, water cement ratio of concrete, slump, dates of erection of form work, passing of

form work by the competent authority, dates of striking of forms, periods and method of curing and other events worthy of note. On completion of the work, the record shall be handed over to the Department.

**2.18.0 Item to Include:**

(1) all labours, materials, use of equipments, tools and plant installing, false work and forms necessary for the satisfactory completion of the item except reinforcement.

(2) Providing cement concrete of specified proportion including transporting, placing and compacting, finishing to the dimensions and shape shown on the plans and as ordered by the Engineer.

(3) Necessary sampling and tests for materials and concrete.

(4) Compensation for injury to persons and damage to the work or property.

**2.19.0 Mode of measurement and payment:**

**2.19.1** The consolidated cubical contents of concrete work as specified in item shall be measured. The concrete laid in excess of section shown on drawings/sketch or as directed shall not be measure. No deductions shall be made for Opening upto 0.1 Sq.mt.

The volume occupied by reinforcement shall not be deducted from R.C.C. work.

**2.19.2** The rate includes cost of all materials, labor, tools and plant required for mixing, placing in position vibrating and compacting, dewatering, finishing as directed, curing and all other incidental expenses for producing concrete of specified strength. The rate includes the cost of formwork .

**2.19.3** The rate shall be for a unit of one cubic metre.

## **Reinforcement**

### **3.1 Material**

FE 500 High yield strength deformed (HSD) steel bars Thermo Mechanically Treated (TMT) steel of approved brand.

### **3.2 Workmanship**

The work shall consist of furnishing and placing reinforcement to the shape and dimensions as shown on the drawing or as directed.

Steel shall be clean and free from rust and loose mill scale at the time of fixing in positions and subsequent concreting.

Reinforcement shall be bent cold to specified shape and dimensions or/directed using a proper bar bender, operated by hand or power to attain proper radius of bends, Bars



shall not be bent or straightened in manner that will injure the material. Bars bent during transport or handling shall be straightened before being used on the work. They shall not be heated to facilitate bending, unless otherwise specified a "type hook at the end bar shall invariably be provided to main reinforcement. The radius of the bend shall not be less than twice the diameter of the end of the curve shall be at least four times the diameter of circle having an equivalent effective area. The hooks shall be suitably excised to prevent any splitting of the concrete.

All the reinforcement bars shall be accurately placed in exact position shown on the drawings, and shall be securely held in position during placing of concrete by annealed binding wire not less than 1 mm dia. in size and by using stay blocks or metal chair spacers, metal hanger supporting wires or other approved devices at sufficiently close intervals. Bars shall not be allowed to sag between supports nor displaced during concreting or any other operations of the work. All devices used for positioning shall be of non-corrodible material. Wooden and metal supports shall not extend to the surface of concrete except where shown on drawings. Placing bars on layers of freshly laid concrete, as the work progress for adjusting bar spacing shall not allowed. Pieces of broken stone or brick and wooden blocks shall not be used. Layers of bars shall be separated by spacer bars. Reinforcement after being placing position shall be maintained in a clean condition until completely embedded in concrete. Special care shall be exercised to prevent and displacement of reinforcement in concrete already placed. To prevent reinforcement from corrosion, concrete cover shall be provided as indicated on drawings. Bars crossing each other where required shall be secured by binding wires (annealed) of size not less than 1 mm dia. in such a manner that they do not slip over each other at the time of fixing and concreting.

As far as possible, bars of full length shall be used. In case this is not possible, overlapping of bars shall be done as directed. When practicable overlapping bars shall not touch each other, but be kept apart by 95 mm or 1.25 times the maximum size of the coarse aggregates whichever is greater by concrete between them.

All surfaces shall be cleaned properly. Ends of the bars shall be cleaned of all loose scale, rust grease, paint and other foreign matter before welding. Only competent welders shall be employed on the work. The M.S. electrodes used for welding conform to IS 814. Welded pieces of reinforcement shall be tested. Specimen shall be taken from the actual site and number and frequency of test shall be as directed.

Cold twisted steel bars shall be used with or without hooks at the ends. Deformed bars without hooks shall, however comply with relevant anchorage requirement.

### **3.3 Mode of measurement and payment:**

Only the actual quantity of steel embedded in concrete including laps as shown on drawings or unavoidable laps as approved by OWNER/ENGINEER shall be measured and paid for, irrespective of the level or height at which the work is done. The unit rate for reinforcement shall include all wastages, binding wires, chairs, spacer bars, avoidable laps etc. for which no separate payment shall be made.

Bar bending schedule shall be prepared by contractor from approved drawings as per IS 2502-1963 (Reaffirmed 2004) and shall be submitted to GIPCL Engineer for approval well in advance. Payment shall be based on approved bar bending schedule and as per decision of Engineer in charge. No extra payment shall be made for avoidable overlaps. No extra payment shall be made for chairs, spacer bars, supports etc. and shall deemed to be included in quoted rates.

The rate for reinforcement includes cost of steel and binding wires, its purchase, carting and stacking to work site, cutting, bending, placing, binding and fixing in position as shown on the

drawings and as directed. It shall also include all devices for keeping reinforcement in approved position, cost of joining as per approved method and all wastage and spacer bars. The rate shall be for a unit of one MT.

**Item no A3**

**GRANULAR SUB-BASE**

Providing, laying well-graded approved quality Granular Sub Base material at average thickness of 100mm thick (compacted thickness) over prepared sub grade including watering & compacting using roller. The material shall be laid in one or more layers as sub-base or lower sub-base and upper sub-base (termed as sub-base hereinafter) as necessary according to lines, grades and cross-sections shown on the sketch/drawings or as directed by the Engineer. (The third party testing from approved laboratory shall be arranged by contractor).

**1. Scope**

This work shall consist of laying and compacting well-graded material on prepared subgrade in accordance with the requirements of these Specifications. The material shall be laid in one or more layers as sub-base or lower sub-base and upper sub-base (termed as sub-base hereinafter) as necessary according to lines, grades and cross-sections shown on the drawings or as directed by the Engineer.

**2. Materials**

Granular sub-base material shall be natural sand, murrum, gravel, crushed stone, or combination thereof. Materials like crushed slag, crushed concrete, crushed brick and kankar may be allowed with the approval of the Engineer. The material shall be free from organic or other deleterious constituents and conform with the requirements in Table 1.

**TABLE -1 SPECIFICATION FOR GRANULAR SUB-BASE MATERIAL**

Grading Sieve Size (mm)	Percent by weight passing
53	100
37.5	95 - 100
19.0	70 - 100
9.5	50 - 90
4.75	35 - 85
2.36	25 - 65
0.425	10 -40
0.075	4 -25
Liquid Limit (%)	□ 25
Plasticity Index (%)	□ 6
Soaked CBR (%)*	□ 30

\* At a depth greater than 480mm below top of base course the strength requirement can be relaxed to a soaked CBR of 15 %. This material shall be termed a lower sub-base material

### 3. Strength of sub-base

It shall be ensured prior to actual execution that the material to be used in the sub-base satisfies the requirements of CBR and other physical requirements when compacted and finished.

When directed by the Engineer, this shall be verified by performing CBR tests in the laboratory as required on specimens remolded at field dry density and moisture content and any other tests for the “quality” of materials, as may be necessary.

### 4. Construction Operations

**4.1 . Preparation of subgrade:** Immediately prior to the laying of sub-base, the subgrade shall be prepared by removing all vegetation and other extraneous matter, lightly sprinkled with water if necessary and rolled with two passes of 80-100 kN smooth wheeled roller.

The existing pavement, where it is to be overlaid by a granular base and embankment of less than 500mm total thickness shall be scarified . Where the existing pavement contains multiple bituminous layers the scarification shall be to the underside of the lowest bituminous layer.

General areas within the Works where multiple bituminous layers exist will be advised by the Engineer. The Contractor will verify that all bituminous layers have been removed using appropriate methods approved by the Engineer. The bituminous surfacing material removed from the existing pavement may be used in other parts of the works provided it complies with the relevant specification clauses.

After scarification and removal to the satisfaction of the Engineer of the bitumen surface from the existing pavement to be overlaid, the existing pavement shall be lightly sprinkled with water if necessary and rolled with three passes of an 80-100kN smooth wheeled roller. The existing pavement shall then be proof rolled with a 18 tonne single drum vibrating roller in the presence of the Engineer who shall determine the suitability of the existing pavement for overlay.

After proof rolling, the surface of the existing pavement shall be lightly tined as directed by the Engineer where the overlay includes a sub-base layer but the compacted depth of the sub-base layer is less than 75mm. In other cases tining is not necessary.”

**4.2. Spreading and compacting:** Where a lower sub-base material is used the minimum compacted layer thickness shall be 100 mm. The sub-base material of grading specified in the Contract shall be spread on the prepared subgrade with the help of a motor grader of adequate capacity, its blade having hydraulic controls suitable for initial adjustment and for maintaining the required slope and grade during the operation or other means as approved by the Engineer.

When the sub-base material consists of combination of materials mixing shall be done mechanically by the mix-in-place method.

Manual mixing shall be permitted only where the width of laying is not adequate for mechanical operations, as in small-sized jobs. The equipment used for mix-in-place construction shall be a

rotavator or similar approved equipment capable of mixing the material to the desired degree. If so desired by the Engineer, trial runs with the equipment shall be carried out to establish its suitability for the work.

Moisture content of the loose material shall be checked in accordance with IS : 2720 (Part 2) and suitably by sprinkling additional water from a truck mounted or trailer mounted water tank and suitable for applying water uniformly and at controlled quantities to variable widths of surface or other means approved by the Engineer so that, at the time of compaction, it is from 1 percent above to 2 percent below the optimum moisture content corresponding to IS : 2720 (Part 8). While adding water, due allowance shall be made for evaporation losses. After water has been added, the material shall be processed by mechanical or other approved means like disc harrows, rotavators until the layer is uniformly wet.

Immediately thereafter, rolling shall start. If the thickness of the compacted layer does not exceed 100 mm, a smooth wheeled roller of 80 to 100 kN weight may be used. For a compacted single layer upto 225 mm the compaction shall be done with the help of a vibratory roller of minimum 80 to 100 kN static weight with plain drum or pad foot-drum or heavy pneumatic tyred roller of minimum 200 to 300 kN weight having a minimum tyre pressure of 0.7 MN/m<sup>2</sup> or equivalent capacity roller capable of achieving the required compaction. Rolling shall commence at the lower edge and proceed towards the upper edge longitudinally for portions having unidirectional crossfall and super elevation and shall commence at the edges and progress towards the centre for portions having crossfall on both sides.

Each pass of the roller shall uniformly overlap not less than one third of the track made in the preceding pass. During rolling, the grade and crossfall (camber) shall be checked and any high spots or depressions, which become apparent, corrected by removing or adding fresh material. The speed of the roller shall not exceed 5 km per hour.

Rolling shall be continued till the density achieved is at least 98 percent of the maximum dry density for the material determined as per IS : 2720 (Part 8). The surface of any layer of material on completion of compaction shall be well closed, free from movement under compaction equipment and from compaction planes, ridges, cracks or loose material. All loose, segregated or otherwise defective areas shall be made good to the full thickness of layer and re-compacted.

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

The surface finish of construction shall conform to the requirements of Clause 902.

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

#### **4.4. Measurements for Payment**

Granular sub-base shall be measured as finished work in position in cubic meters under the following items:

- i. Upper sub-base
- ii. Lower sub-base (greater than 480mm below top of base course).

The protection of edges of granular sub-base extended over the full formation as shown in the drawing shall be considered incidental to the work of providing granular sub-base and as such no extra payment shall be made for the same.

Preparation of the surface of the existing pavement to be overlaid shall be measured in sq.m.

#### **4.5 . Rate**

The Contract unit rate for granular sub-base shall be payment in full for carrying out the required operations including full compensation for:

- (i) furnishing all materials to be incorporated in the work including all royalties, fees, rents where necessary and all leads and lifts;
- (ii) all labour, tools, equipment and incidentals to complete the work to the Specifications;:
- (iii) carrying out the work in part widths of road where directed; and
- (iv) carrying out the required tests for quality control.

#### **Item no A7**

##### **WATER BOUND MACADAM SUB-BASE/BASE**

Providing, supplying and laying of average 200mm consolidated thickness water bound macadam base coarse in two layers, each of 100mm consolidated thickness using 40 to 63 mm size metal to the specified gradient and camber with approved quality graded stone aggregates, screenings and binding material as quarry dust, including watering using water tanker, compacting by roller etc. complete as per specifications and as directed by Engineer in charge.

#### **1. Scope**

**1.1.** This work shall consist of clean, crushed aggregates mechanically interlocked by rolling and bonding together with screening, binding material where necessary and water laid on a properly prepared subgrade/sub-base/base or existing pavement, as the case may be and finished in accordance with the requirements of these Specifications and in close conformity with the lines, grades, cross-sections and thickness as per approved plans or as directed by the Engineer.

**1.2.** It is, however, not desirable to lay water bound macadam on an existing thin black topped surface without providing adequate drainage facility for water that would get accumulated at the interface of existing bituminous surface and water bound macadam.

#### **1.3. Materials**

**1.3.1.Coarse aggregates:** Coarse aggregates shall be either crushed or broken stone, crushed slag, overburnt (Jhama) brick aggregates or any other naturally occurring aggregates such as kankar and laterite of suitable quantity. Materials other than crushed or broken stone and crushed slag shall be used in sub-base courses only. 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 requirement set forth in

Table 400-6. The type and size range of the aggregate shall be specified in the Contract or shall be as specified by the Engineer. If the water absorption value of the coarse aggregate is greater than 2 percent, the soundness test shall be carried out on the material delivered to site as per IS : 2386 (Part 5).

**1.3.2. Crushed or broken stone:** The crushed or broken stone shall be hard, durable and free from excess flat, elongated, soft and disintegrated particles, dirt and other deleterious material.

TABLE 400-6. PHYSICAL REQUIREMENTS OF COARSE AGGREGATES FOR  
WATER BOUND MACADAM FOR SUB-BASE/BASE COURSES

	Test	Test Method	Requirements
1.	* 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)
2.	Combined Flakiness and Elongation Indices (Total )  ***	IS : 2386 (Part-1)	30 per cent (Max)

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

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

\*\*\* The requirement of flakiness index and elongation index shall be enforced only in the case of crushed broken stone and crushed slag.

**1.3.3. Crushed slag:** Crushed slag shall be made from aircooled blast furnace slag. It shall be of angular shape, reasonably uniform in quality and density and generally free from thin, elongated and soft pieces, dirt or other deleterious materials. The weight of crushed slag shall not be less than 11.2 kN per m<sup>3</sup> and the percentage of glossy material shall not be more than 20. It should also comply with the following requirements:

- (i) Chemical stability : To comply with requirements of appendix of BS
- (ii) Sulphur content : Maximum 2 per cent
- (iii) Water absorption : Maximum 10 per cent

**1.3.4. Overburnt (Jhama) brick aggregates:** Jhama brick aggregates shall be made from overburnt bricks or brick bats and be free from dust and other objectionable and deleterious materials.

**1.3.5. Grading requirement of coarse aggregates:** The coarse aggregates shall conform to one of the Gradings given as specified, provided, however, the use of Grading No. 1 shall be restricted to sub-base courses only.

**TABLE . GRADING REQUIREMENTS OF COARSE AGGREGATES**

Grading No.	Size Range	IS Sieve Designation	Per cent by Weight passing
1.	90 mm to 45 mm	125 mm	100
		90 mm	90-100
		63 mm	25-60
		45 mm	0-15
		22.4 mm	0-5
2.	63 mm to 45 mm	90 mm	100
		63 mm	90-100
		53 mm	25-75
		45 mm	0-15
		22.4 mm	0-5
3.	53 mm to 22.4 mm	63 mm	100
		53 mm	95-100
		45 mm	65-90
		22.4 mm	0-10
		11.2 mm	0-5

Note : The compacted thickness for a layer with Grading 1 shall be 100 mm while for layer with other Gradings e.g 2 & 3, it shall be 75 mm.

**1.4. Screenings:** Screenings to fill voids in the coarse aggregate shall generally consist of the same material as the coarse aggregate. However, where permitted, predominantly non-plastic material such as murrum or gravel (other than rounded river borne material) may be used for this



purpose provided liquid limit and plasticity index of such material are below 20 and 6 respectively and fraction passing 75 micron sieve does not exceed 10 percent.

Screenings shall conform to the grading set forth in Table 400-8. The consolidated details of quantity of screen required for various grades of stone aggregates are given in Table 400-9. The table also gives the quantities of material (loose) required for 10 m<sup>2</sup> for sub-base/base compacted of thickness of 100/75 mm.

The use of screenings shall be omitted in the case of soft aggregates such as brick metal, kankar, laterites, etc. as they are likely to get crushed to a certain extent under rollers.

**TABLE . GRADING FOR SCREENINGS**

Grading Classification	Size of Screenings	IS Sieve Designation	Per cent by weight passing the IS Sieve
A	13.2 mm	13.2 mm	100
		11.2 mm	95-100
		5.6 mm	15-35
		180 micron	0-10
B	11.2 mm	11.2 mm	100
		5.6 mm	90-100
		180 micron	15-35

APPROXIMATE QUANTITIES OF COARSE AGGREGATES AND SCREENINGS REQUIRED FOR

**100/75 MM COMPACTED THICKNESS OF WATER BOUND  
MACADAM (WBM) SUB-BASE/BASE COURSE FOR 10M<sup>2</sup> AREA**

Classifi- cation	Size Range	Compacted thickness	Loose Qty	Screenings	
				Stone Screening	Crushable Type such as Murrum or Gravel

				Grading Classi- fication & Size	For. WBM Sub-base/ Base course (Loose quantity)	Grading Classi- fication & Size	Loose Qty.
Grading 1	90 mm to 45 mm	100 mm	1.21 to 1.43 m <sup>3</sup>	Type A 13.2 mm	0.27 to 0.30 m <sup>3</sup>	Not uniform	0.30 to 0.32 m <sup>3</sup>
Grading 2	63 mm to 45 mm	75 mm	0.91 to 1.07 m <sup>3</sup>	Type A 13.2 mm	0.12 to 0.15 m <sup>3</sup>	-do-	0.22 to 0.24 m <sup>3</sup>
-do-	-do-	-do-	-do-	Type B 11.2 mm	0.20 to 0.22 m <sup>3</sup>	-do-	-do-
Grading 3	53 mm to 22.4 mm	75 mm	-do-	-do-	0.18 to 0.21 m <sup>3</sup>	-do-	-do-

**1.5. Binding material:** Binding material to be used for water bound macadam as a filter material meant for preventing ravelling, shall comprise of a suitable material approved by the Engineer having a Plasticity Index (PI) value of less than 6 as determined in accordance with IS : 2720 (Part-5).

The quantity of binding material where it is to be used, will depend on the type of screenings. Generally, the quantity required for 75 mm compacted thickness of water bound macadam will be 0.06-0.09 m<sup>3</sup>/10m<sup>2</sup> and 0.08-0.10m<sup>3</sup>/10m<sup>2</sup> for 100 mm compacted thickness.

The above mentioned quantities should be taken as a guide only, for estimation of quantities for construction etc.

Application of binding materials may not be necessary when the screenings used are of crushable type such as murrum or gravel.

## **1.6. Construction Operations**

**1.6.1. Preparation of base:** The surface of the subgrade/sub-base/base to receive the water bound macadam course shall be prepared to the specified lines and crossfall (camber) and made free of dust and other extraneous material. Any ruts or soft yielding places shall be corrected in an approved manner and rolled until firm surface is obtained if necessary by sprinkling water. Any sub-base/base/surface irregularities, where predominant, shall be made good by providing appropriate type of profile corrective course (levelling course)

As far as possible, laying water bound macadam course over an existing thick bituminous layer may be avoided since it will cause problems of internal drainage of the pavement at the interface of two courses. It is desirable to completely pick out the existing thin bituminous wearing course where water bound macadam is proposed to be laid over it. However, where the intensity of rain is low and the interface drainage facility is efficient, water bound macadam can be laid over the existing thin bituminous surface by cutting 50 mm x 50 mm furrows at an angle of 45 degrees to the centre line of the pavement at one meter intervals in the existing road. The directions and depth of furrows shall be such that they provide adequate bondage and also serve to drain water to the existing granular base course beneath the existing thin bituminous surface.

**1.6.2 Inverted choke:** If water bound macadam is to be laid directly over the subgrade, without any other intervening pavement course, a 25 mm course of screenings (Grading B) or coarse sand shall be spread on the prepared subgrade before application of the aggregates is taken up. In case of a fine sand or silty or clayey subgrade, it is advisable to lay 100 mm insulating layer of screening or coarse sand on top of fine grained soil, the gradation of which will depend upon whether it is intended to act as a drainage layer as well. As a preferred alternative to inverted choke, appropriate geosynthetics performing functions of separation and drainage may be used over the prepared subgrade as directed by the Engineer. Section 700 shall be applicable for use of geosynthetics.

**1.6.3. Spreading coarse aggregates:** The coarse aggregates shall be spread uniformly and evenly upon the prepared sub-grade/sub-base/base to proper profile by using templates placed across the road about 6 m apart, in such quantities that the thickness of each compacted layer is not more than 100 mm for Grading 1 and 75 mm for Grading 2 and 3, as specified in Clause 404.2.5. Wherever possible, approved mechanical devices such as aggregate spreader shall be used to spread the aggregates uniformly so as to minimise the need for manual rectification afterwards. Aggregates placed at locations which are inaccessible to the spreading equipment, may be spread in one or more layers by any approved means so as to achieve the specified results.

The spreading shall be done from stockpiles along the side of the roadway or directly from vehicles. No segregation of large or fine aggregates shall be allowed and the coarse aggregate as spread shall be of uniform gradation with no pockets of fine material.

The surface of the aggregates spread shall be carefully checked with templates and all high or low spots remedied by removing or adding aggregates as may be required. The surface shall be checked frequently with a straight edge while spreading and rolling so as to ensure a finished surface as per approved drawings.

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

**1.6.4. Rolling:** Immediately following the spreading of the coarse aggregate, rolling shall be started with three wheeled power rollers of 80 to 100 kN capacity or tandem or vibratory rollers of 80 to 100 kN static weight. The type of roller to be used shall be approved by the Engineer based on trial run. Except on superelevated portions where the rolling shall proceed from inner edge to the outer, rolling shall begin from the edges gradually progressing towards the centre. First the edge/edges shall be compacted with roller running forward and backward. The roller shall then move inward parallel to the centre line of the road, in successive passes uniformly lapping preceding tracks by at least one half width.

Rolling shall be discontinued when the aggregates are partially compacted with sufficient void space in them to permit application of screenings. However, where screenings are not to be applied, as in the case of crushed aggregates like brick metal, laterite and kankar, compaction shall be continued until the aggregates are thoroughly keyed. During rolling, slight sprinkling of water may be done, if necessary. Rolling shall not be done when the subgrade is soft or yielding or when it causes a wave-like motion in the subgrade or sub-base course.

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

Material which gets crushed excessively during compaction or becomes segregated shall be removed and replaced with suitable aggregates.

It shall be ensured that shoulders are built up simultaneously along with water bound macadam courses as per Clause 407.4.1.

**1.6.5. Application of screenings:** After the coarse aggregate has been rolled, screenings to completely fill the interstices shall be applied gradually over the surface. These shall not be damp or wet the time of application. Dry rolling shall be done while the screenings are being spread so that vibrations of the roller cause them to settle into the voids of the coarse aggregate. The screenings shall not be dumped in piles but be spread uniformly in successive thin layers either by the spreading motions of hand shovels or by mechanical spreaders, or directly from tipper with suitable grit spreading arrangement. Tipper operating for spreading the screenings shall be so driven as not to disturb the coarse aggregate.

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

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

**1.6.6. Sprinkling of water and grouting:** After the screenings have been applied, the surface shall be copiously sprinkled with water, swept and rolled. Hand brooms shall be used to sweep the wet screenings into voids and to distribute them evenly. The sprinkling, sweeping and rolling operation shall be continued, with additional screenings applied as necessary until the coarse aggregate has been thoroughly keyed, well-bonded and firmly set in its full depth and a grout has been formed of screenings. Care shall be taken to see that the base or subgrade does not get damaged due to the addition of excessive quantities of water during construction.

In case of lime treated soil sub-base, construction of water bound macadam on top of it can cause excessive water to flow down to the lime treated sub-base before it has picked up enough strength (is still “green”) and thus cause damage to the sub-base layer. The laying of water bound macadam layer in such cases shall be done after the sub-base attains adequate strength, as directed by the Engineer.

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

**1.6.8. Setting and drying:** After the final compaction of water bound macadam course, the pavement shall be allowed to dry overnight. Next morning hungry spots shall be filled with screenings or binding material as directed, lightly sprinkled with water if necessary and rolled. No traffic shall be allowed on the road until the macadam has set. The Engineer shall have the discretion to stop hauling traffic from using the completed water bound macadam course, if in his opinion it would cause excessive damage to the surface.

The compacted water bound macadam course should be allowed to completely dry and set before the next pavement course is laid over it.

**1.6.8. Reconstruction of defective macadam:** The finished surface of water bound macadam shall conform to the tolerance of surface regularity as prescribed in Clause 902. However, where the surface irregularity of the course exceeds the tolerances or where the course is otherwise defective due to subgrade soil mixing with the aggregates, the course to its full thickness shall be scarified over the affected area, reshaped with added material or removed and replaced with fresh material as applicable and recompacted. In no case shall depressions be filled up with screening or binding material.

**1.6.9. Measurements for payment**

Water bound macadam shall be measurement as finished work in position in cubic meters.

**1.6.10 Rate**

The Contact unit rate for water bound macadam sub-base/base course shall be payable in full for carrying out the required operations including arrangement of water used in the work as approved by the Engineer.

**Item no A4**

**Providing & Laying WMM**

Providing, Laying, spreading and compacting graded stone aggregate to wet mix macadam (WMM) at average thickness of 150mm thick (Compacted thickness) and including marking of pegs for setting out 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 using loader or paver in sub- base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per clause 406 of Mohr's specification 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 or 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 150 mm 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. 150 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.

### **Item no A5**

#### **Providing and applying Hincol make 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 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**

Type of surface	Kinematic Viscosity of Primer at 60° C(Centistokes)	Quantity per 10 sq. m(kg)
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

#### **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.

#### **Item no A6**

#### **Providing & Laying built up spray grout. (BSG)**

Providing and laying 75 mm average consolidated thick built up spray grout with Batching 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 Batching Plant or manual as case may be, transporting required hot material at site, spreading, laying & leveling the mix with paver or manually 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



**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 5.

**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 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>.

### **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



- (a) In case of drum mix plants, 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 feed 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 variably 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, traffic routing shall be done as per site condition with required barriers to be arranged by Contractor.

### **Measurements for payment**

The payment shall be made on the MT basis of weighment slip from GIPCL operated Weigh Bridge and actual area of work done at site of specified consolidated thickness. 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 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 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) Preparation of base including filling of pot holes.
- (b) Providing all materials to be incorporated in the work including all royalties, fees, rents, where necessary and all leads and lifts.
- (c) All labour, tools, equipments, plants and incidentals to complete the work to the specifications
- (d) Carrying out the work in part widths of the road where directed.
- (e) Spreading of key aggregates on finished top as required without any extra cost.

**Specification for other items:-**

As per item description in Section E (Schedule of quantity and rate).