

ASSAM POWER GENERATION CORPORATION LIMITED

OFFICE OF THE CHIEF GENERAL MANAGER (Generation),

BIJULEE BHAWAN, GUWAHATI-781001



**E-Tender Notice No.APGCL/CGM(Gen.)-(H&C)/2022-23/KLHEP-Tunnel/16(12)
Dated: 08-12-2022**

**NAME OF THE WORK: Repair and Rehabilitation of R.C.C. lined Head Race
Tunnel (H.R.T.) at 2 X 50 MW KLHEP**

December-2022

Issued to:

Name:-

Address: -

Issued by:

Price: - ₹1200/-
(Non-Refundable)

INDEX

<u>Chapter</u>		<u>Page No</u>
Chapter-I	Tender Notice	..... 2
Chapter-II	Terminology	..... 4
Chapter-III	Instruction for bidders and special Conditions	..... 5
Chapter-IV	Safety Engineering and Safety Code	..... 11
Chapter-V	Contractor's Camp	..... 13
Chapter-VI	Declaration	..... 14
Chapter-VII	Declaration of litigation	..... 15
Chapter-VIII	Undertaking	..... 16
Chapter-IX	Schedule of work	..... 17
Chapter-X	Salient Features	..... 23

CHAPTER-I

TENDER NOTICE



ASSAM POWER GENERATION CORPORATION LIMITED

Registered Office: Bijulee Bhawan, 2nd floor, Paltanbazar, Guwahati-781 001, Assam.

Email: tikench.basumatary@apgcl.org, saurav.saikia@apgcl.org

Tiken Ch. Basumatary

Chief General Manager (Generation)

E-Tender Notice No. APGCL/CGM(Gen.)-(H&C)/2022-23/KLHEP-Tunnel/16(12) Dated: 08-12-2022

Invitee	The Chief General Manager (Generation) 3rd Floor Bijulee Bhawan, Paltanbazar, Guwahati, Assam, PIN-781001
Name of work	Repair and Rehabilitation of R.C.C. lined Head Race Tunnel (H.R.T.) at 2 X 50 MW KLHEP
Duration of work	60 (Sixty) days from handing over the site
Value of Work	Rs. 57,18,683.00 (Rupees Fifty seven lakhs eighteen thousand six hundred and eighty three) only.
Eligibility of the bidder	Reputed and financially sound Civil Engineering firms / contractors with Average Annual turnover during last three Financial Years i.e. 2019-20, 2020-21 & 2021-22 should not be less Rs. 29 lakhs (50% of the tendered amount) and Civil Engineering firms/contractors with adequate experience of having successfully completed similar works during the last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:- a. Three similar completed works costing not less than the amount equal to Rs. 22,87,473.00 (40% of the tendered amount) . or b. Two similar completed works costing not less than the amount equal to Rs. 28,59,342.00 (50% of the tendered amount) . or c. One similar completed work costing not less than the amount equal to Rs. 45,74,946.00 (80% of the tendered amount) .
Tender fee (Non-refundable)	Rs. 1200/- (Rupees one thousand two hundred only) <i>Tender processing fees must be deposited online as per instructions given vide as per OM. No. FEB. 269/2017/27 dated 21.08.2019 (copy enclosed for ready reference). Tender processing fee in any other form will not be accepted.</i>
Earnest Money Deposit (EMD)	Rs. 1,16,000.00 (for General) Rs. 58,000.00 (for SC/ST/OBC)(For Individual only) <i>EMD amount should be deposited online as per Finance Department Govt. of Assam office memorandum (OM).No. FEB.269/2017/27 dated 21.08.2019 (copy enclosed for ready reference). EMD amount in any other form will not be accepted.</i>
Start date of Tender	09.12.2022
Last date and time of online bid submission	12.00 pm on 16.12.2022
Tender Opening	03.00 pm on 16.12.2022

Bidder must download the Bidding Documents and submit the bid electronically on the portal <https://assamtenders.gov.in>

The Bidders will be required to submit the bids by using own Digital Signature Certificate with both Signing and Encryption Certificates (minimum Class-II Certificate). Prospective Bidders must procure DSC before participating in the tenders. The viewing & downloading of the bid document will be free of cost.

Bid shall be submitted electronically/ online.


The bidder must submit the requisite tender fee and EMD through online as per Finance Department Govt of Assam office memorandum (OM) No. FEB. 269/2017/27 dated: 21.08.2019.

The Bidders will be required to download the Bidding Documents from the web portals mentioned above. However, they will have to pay a non - refundable tender document fee as mentioned above online, the details of which are stipulated in the tender document. The acceptance of the bid shall be subjected to acceptance of the document fee.

The Chief General Manager (Generation), APGCL is not bound to accept the lowest rates and reserves the right to accept or reject any or all tenders without assigning any reason thereof.

Note: Any addendum/corrigendum/extension etc. in respect of this tender shall be issued on the portal <https://assamtenders.gov.in> and APGCL's website: www.apgcl.org.

Yours faithfully,


Chief General Manager (Generation)
APGCL

Memo no: APGCL/CGM (H&C)/W/2019-20/822/(part I)/20(A)

Date: 08/12/2022

C.c. to: -

- 1) The Chairman, APGCL, Bijulee Bhawan, Paltanbazar, Guwahati-781 001, for favour of kind information.
- 2) The Managing Director, APGCL, Bijulee Bhawan, Paltanbazar, Guwahati-781 001, for favour of kind information.
- 3) The Chief General Manager (F & A), APGCL, Bijulee Bhawan, Paltanbazar, Guwahati-781 001, for information.
- 4) The General Manager, KLHEP, APGCL, Lengery, Dist.-Karbi Anglong, for information and necessary action and wide circulation.
- 5) The P.R.O., APDCL, Bijulee Bhawan, Paltanbazar, Guwahati-781 001, for information with a request to publish the notice in one issue of Local Dailies in Regional and English Language on or before 09/12/2022.
- 6) Relevant File.

CHAPTER-II

1 TERMINOLOGY

- 1.01** APGCL wherever used in this document shall mean Assam Power Generation Corporation Limited incorporated vide The Companies Act 1961 in exercise of Powers conferred under the Act including subsequent amendments, if any. APGCL is a successor company of ASEB.
- 1.02** CGM (Generation) or owner or purchaser or project authority wherever used in this document shall mean the officer holding the post of the Chief General Manager (Generation) APGCL, Guwahati (Assam), who or his authorized representative will exercise authority on behalf of the Department in respect of the Tender and the works specified herein.
- 1.03** Engineer-in-Charge/or engineer shall mean the Officer holding the charge of the Departmental post of General Manager/ Assistant General Manager (Civil) pertaining to supervision of works specified in this document.
- 1.04** The term 'Contractor' wherever used in this document shall mean the individual/firm or company who shall have entered into a contract agreement with the owner or the project authority, undertaking on his behalf to carry out the works in full or in part as may be specified in contract documents, and shall include in the case of an individual/ his heirs, administrators and permitted assignees, in case of a firm, the partners of the said firm, their respective heirs, executors, administrators and permitted assignees, and in case of a Company its successors and permitted assignees.
- 1.05** Contract documents shall mean and comprise the following documents and shall be the basis of agreement between the owner and the contractor for carrying out the works in accordance with the terms and conditions, specifications, drawings and directions contained in the said documents.
- a) Bid documents duly filled in respect of rates, process & signed, the tender forms properly filled in, signed and dated by the contractor & duly submitted.
 - b) Contractor's original bid proposal and subsequent correspondences relating to clarifications and negotiations, if any, prior to award of the contract.
 - c) Equipment, specifications and drawings, so far as applicable
 - d) Approved agreement forms duly signed, dated and sealed by the contractor and the owner as specified in the said forms
- 1.06** 'Equipment' and 'Plants' shall mean and include all sorts of machineries and accessories, apparatus, instruments, components manufactured articles and parts etc. to be supplied or provided by the contractor under the terms of the contract , unless otherwise specified
- 1.07** The 'Works' shall unless be repugnant to such description shall be construed and taken to mean the works contracted, or by virtue of the contract agreement, to be executed whether temporary or permanent and whether original, altered, substituted or additional.
- 1.08** The expression 'Specifications' wherever used in this document shall mean all the pertinent terms and stipulations furnished herein in respect of the work or part thereof and/or indicated in the drawings appended hereto and to be issued for construction and shall have reference also to other relevant terms and stipulations not furnished herein, but as far as applicable.

CHAPTER-III

INSTRUCTION FOR BIDDERS AND SPECIAL CONDITIONS

E-Tender Notice No. APGCL/CGM(Gen.)-(H&C)/2022-23/KLHEP-Tunnel/16(12) Dated: 08-12-2022

BID INVITED FOR: Repair and Rehabilitation of RCC lined Head Race Tunnel (HRT) at 2 X 50 MW KLHEP

EARNEST MONEY DEPOSIT: Rs. 1,16,000.00 (for General)
Rs. 58,000.00 (for SC/ST/OBC)(For Individual only)

1. DUE DATE AND CLOSING TIME

The bid will be received up to 12.00 p.m. on 16.12.2022. The opening time of the bids will be at 3.00 p.m. on 16.12.2022 and the venue will be the office of the Chief General Manager (Gen), APGCL. Bidders or their authorized representatives will make it convenient to attend the bid opening on time.

2. TIME OF COMPLETION OF WORK

The stipulated time of completion of the work is 60 (**Sixty**) days from the date of handing over the site. **No time extension shall be granted to the contractor irrespective of size and volume of the awarded work.**

3. BID-GUARANTEE OR EARNEST MONEY DEPOSIT: (E.M.)

- 3.1 EMD amount should be deposited online as per Finance Department Govt. of Assam office memorandum (OM).No. FEB.269/2017/27 dated 21.08.2019 (copy enclosed for ready reference). EMD amount in any other form will not be accepted.
- 3.2 The E.M. is liable to be forfeited in the absolute discretion of the CGM (Gen), APGCL, if a selected bidder revokes or causes to withdraw his offer / tender before the expiry of its validity or fails after the contract is awarded to him to execute the 'Contract agreement' with the APGCL described herein after (so far as applicable) or to commence the work within the period as notified in the work order.
- 3.3 A tender is liable for outright rejection in absence of the requisite E.M. deposit.

4. PERFORMANCE –GUARANTEE OR SECURITY DEPOSIT (S.D.)

- 4.1 The security to be taken for due performance of the contract in terms of the 'contract agreement' will be a deduction of 10% (ten percent) from every ad-interim payment made on account of works performed, until the sum of these deductions becomes equal to 10 (ten) percent of the total **executed value**.
- 4.2 Such S.D. shall be forfeited or appropriated by the CGM (Gen), APGCL, BijuleeBhawan, Guwahati under authority of the owner in his discretion towards any loss, damage etc. that may be sustained by the APGCL as a result of breach of any terms, conditions of the contract by the contractor, notwithstanding other remedies open to the APGCL under the terms of the contract or law.
- 4.3 In the event of contractor's Security Deposit being appropriated towards loss, damage etc, the contractor shall forthwith recoup the amount to restore the Security Deposit to the full current value within 30 (thirty) days from the date of intimation.
- 4.4 Subject to the provisions mentioned above and the provisions of **guarantee period of one year**, the Security Deposit will be returned to the contractor on the due and satisfactory completion of the contract and after all claims of the APGCL shall have been settled. The APGCL will not pay any interest on the amount of Security Deposit of Performance Guarantee. If the work gets damaged during the guarantee period of one year due to default of the contractor or even otherwise (including due to force majeure) the CGM (Gen) reserves the right to forfeit the SD Money.

5. GST / INCOME TAX CERTIFICATE (PAN / GST):

- 5.1 The offered rates and / or prices for the work shall include all taxes, overhead charges, duties, forest royalties, monopolies etc. as may be applicable on material and labour during the tenure of the contract. There will be no reimbursement for any increase or levy of new taxes, duties etc. on materials utilized for this work or equipment furnished / supplied for completing the work or for machineries, equipment, tools and tackle, fuel and lubricants etc. used in connection with the performance of the work, unless otherwise specified or qualified by the bidder in his bid. If, however, any tax or duty is levied by the Govt. or statutory body on the finished work (after complete installation and / or delivery), such tax or duty will be to the account of the APGCL.
- 5.2 **The contractor must have a valid GST Registration No. and should submit copy of GST Certificate and attested copy of PAN Card.**
- 5.3 **Caste certificate must be produced where necessary.**
- 5.4 **The contractor must submit IT return for last three F.Y. i.e. 2021-2022, 2020-2021 and 2019-2020**

6. BIDDER'S QUALIFICATIONS:

- 6.1 The Bidder should submit a list and description of similar or comparable works previously executed by him successfully during last 7 (seven) consecutive years ending last day of month previous to the one in which applications are invited indicating the individual volume and contract price along with the name and address of the respective owner / authority.
- 6.2 All prospective bidders are hereby notified that, before any bid/quotation submitted in response to this invitation is considered for award, the CGM (Gen), APGCL may require the bidder to submit a further statement of facts in detail as to the previous experience of the bidder and financial resource available with him for performing the contemplated work. The CGM (Gen), APGCL expressly reserves the right to reject any bid or which the facts as to business, financial and other resources or business experience, compared with the work bid upon, justify such rejection.
- 6.3 The Bidder should submit valid Labour License Certificate.
- 6.4 Civil Engineering firms/contractors with adequate experience of having successfully completed **similar works during the last 7 years** ending last day of month previous to the one in which applications are invited should be either of the following:-
- a. Three similar completed works costing not less than the amount equal to **Rs. 22,87,473.00 (40% of the tendered amount)**.
- or
- b. Two similar completed works costing not less than the amount equal to **Rs. 28,59,342.00 (50% of the tendered amount)**.
- or
- c. **One similar completed work costing not less than the amount equal to Rs. 45,74,946.00 (80% of the tendered amount)**.
- 6.5 Cost overrun shall not be accepted.
- 6.6 Contractors should be financially sound to invest the amount and should submit necessary evidence on this account. **Average Annual turnover should not be less Rs. 29.00 lakhs in the last three Financial Years i.e. 2019-20, 2020-21 & 2021-22.** However; annual turnover certificate of each of the three financial years mentioned above must be submitted.
- 6.7 The Bidder should submit valid EPF account no. and ESIC Certificates.

7. BIDDER SHOULD EXAMINE & UNDERSTAND

- 7.1 All prospective bidders are required to thoroughly study and carefully examine all the terms and conditions, instructions, drawing & specifications pertaining to the work and visit the field of work to fully satisfy and acquaint themselves about the nature and location of work, the configuration of the ground. The spring level, the surface conditions, quality and quantity of materials required and their availability the type of equipment and facilities needed preliminary to and during the execution of the work and local conditions which may affect the work or cost thereof. Failure to do so will be at the bidder's risk.

8. SUBMISSION OF TENDER

- 8.1 Bidders are to quote their rates against each item in clear money (Rupees) value per unit of work (inclusive of all taxes) in the prescribed format.
- 8.2 **The rates are to be quoted on item rate basis. The rates are to be quoted in figures.**
- 8.3 **The rates quoted by the bidders will be inclusive of all taxes, overhead charges, royalties and other statutory levies as applicable.**
- 8.4 **Bidders should note that unusually low rates not feasible for execution may not be technically accepted.**
- 8.5 Bidders should note that during the time of execution of work, any item not covered by the schedule of work if required to be done as per decision of the CGM (Generation)/ Engineer-in Charge of APGCL, they have to execute such work/works as supplementary item of works, rates of which will be calculated by using the following formulae:

$$R = (T'/T) * P$$

Where, R= Rate of supplementary item of work

T'= Bid value

T= Tendered value

P= Accepted Rate for the work on PWD DSR 2021 (Vol I and II) (Civil works).

If the rate of such supplementary item/items is/are not available in the aforesaid S.O.R, the same will be analyzed by the department as per reasonable market price but in any case of dispute for rate of supplementary item/items, the decision of CGM (Generation) will be final and conclusive.

- 8.6 **The quoted rates will be firm for entire period of completion of the work. No price escalation on any component will be admissible.**
- 8.7 Firms submitting tender should enclose a certified copy of the Firm's constitution and a certified copy of Power of Attorney authorizing a person to operate the tender and contract and should furnish full address of the partners and the persons holding power of attorney on behalf of the firm.
- 8.8 **Information regarding litigation, current or during the last five years, in which the Bidder is involved with APGCL/AEGCL/APDCL, must be furnished, if any in the prescribed format (at Chapter VII).**
- 8.9 In the event of the date specified for bid receipt and opening being declared as a closed holiday for Purchaser's office, the due date for submission of bids and opening of bids will be the following working day at the appointed date and place.
- 8.10 The Corporation cannot be held responsible for non-receipt and postal delay.
- 8.11 Every page of the tender document to be duly signed by the bidder.

9. AWARD OF CONTRACT

- 9.1 The contract will be awarded to that responsible bidder whose bid, confirming to the schedule conditions of contract and specifications will be most advantageous to the Department, price and other factors considered. An award mailed (or otherwise furnished) to the successful bidder within the time for acceptance specified in the bid will result in a binding contract without further action by either party. The CGM (Generation), APGCL does not bind itself to accept the lowest bid or any bid. As the interest of the Department may require, the right is reserved to reject any or all bids and to waive any minor informality or irregularity in bids received without assigning any reason thereof. Bid which are incomplete or which contain undesirable conditions are liable to rejection.
- 9.2 **APGCL will try to make timely payment of bills, but on unavoidable circumstances cannot guarantee timely payment of bills, for which no interest on the payable amount will be entertained.**

10. CONTRACT AGREEMENT

- 10.1 The 'Contract agreement' (or Tender Agreement) for the works will be drawn up with the selected bidder/bidders within 7 (Seven) days of issue of the work order and the contract documents will comprise as described herein before.
- 10.2 The conditions of the F-2 form shall form part and parcel of the agreement. However wherever there is any contradiction or variation between the conditions of the F-2 form, the terms and conditions specified elsewhere in this document, the later will be treated as superseding the former. Terms and conditions shall be as per F-2 Form of agreement and has to follow accordingly. In the Form-F-2 all the designations appearing as Executive Engineer/Sub divisional Officer shall be read as Chief General Manager (Generation), Assam Power Generation Corporation Limited (herein after called as C.G.M (Generation), APGCL.
- 10.3 In a case where the selected bidder fails to commence the work as shall be notified in the work order or fails to execute the tender agreement with the CGM (Generation), APGCL as stipulated herein before; the CGM (Generation), APGCL reserves the right to claim loss, damage etc. and take appropriate action under the terms of this document or law including forfeiture of E.M.

11. TOOLS & PLANTS

- 11.1 The APGCL shall not furnish any tools & tackle, plants and equipment or such facilities for carrying out the work by the contractor (excluding hypothecation). The contractor shall arrange and maintain the equipment required for implementation of work all throughout the period of the contract. **The contractor must make provisions for atleast two intercom at work site to facilitate smooth communication the two ends of the tunnel.**

12. MATERIALS & LABOUR

- 12.1 All materials (this includes without limitation raw materials, parts, components etc.) and labour required for carrying out the work shall be arranged and furnished by the contractor all throughout the tenure of the contract and strictly conform to relevant IS Code (latest revision).
- 12.2 The intending tenderers should inspect the prospective sources of collection of raw materials and fully satisfy him about the quality of materials, availability of materials, lead, and mode of transportation. The Department shall not consider, after acceptance of the contract, to pay any extra charge for lead or any other reasons, in case the contractor found later on, to have misjudged, the quality/quantity of availability of such materials from the source of collection.
- 12.3 APGCL shall not issue any construction materials such as cement, reinforcement bar, scaffolding or any other materials.
- 12.4 In connection with the performance of work throughout the tenure of the contract, the engagement of labour and payment therefore by the contractor shall conform to the statute, the pertinent law or act of the Central & State Govts, as well as rules, regulations and orders of the local authorities or statutory bodies, as may be in force from time to time.
- 12.5 The materials procured for the work by the contractor shall be placed at site properly for inspection of Engineer-in charge before utilization. Any defective materials should be replaced immediately for which no extra charge will be payable to the contractor.

13. CHANGES IN QUANTITY AND ITEM

- 13.1 The CGM (Generation), APGCL may at any time, by a written order make changes within the general scope of the contract, in any one or more of the following
- i) Quantity of any item
 - ii) Alteration or omission of any item
 - iii) Addition of any item
 - iv) Alteration in drawings, designs or specifications

If any such change causes an increase or decrease in the cost of or the time required for performance of the contract, an equitable adjustment shall be made in the contract price or time schedule or both and the contract shall be modified in writing accordingly. Any claim by the contractor for adjustment under this clause must be asserted within 30 days from the date of receipt by the contractor of the notification of change: PROVIDED HOWEVER, that the CGM (Generation) if decides that the facts justify such action, may receive and act upon any such claim asserted at any time prior to final payment under the contract. Failure to agree to any

adjustment shall be a dispute concerning a question of fact within the meaning of the disputes mentioned herein after. However nothing in this clause shall excuse the contractor from proceeding with the contract as changed.

14. INSPECTION

- 14.1 All works and all supplies (this term includes without limitation raw materials, parts, components, intermediate assemblies and end products) under the contract shall be subject to inspection and test by the CGM (Generation), APGCL or his authorized person to the extent practicable at all times and places including the period of construction or manufacture and in any event prior to final acceptance.
- 14.2 In case any work or part thereof or/and any supply is found defective in material or workmanship or otherwise not in conformity with the specifications or drawings or requirements of the contract, the CGM (Generation), APGCL shall have the right either to reject them or to require their correction, as directed by the department.
- 14.3 The inspection and test by the CGM (Generation), APGCL or his authorized person of any work or any supplies does not relieve the contractor from any responsibility regarding defects or other failures to meet the contract requirements which may be discovered prior to final acceptance. Except as otherwise provided in this contract final acceptance shall be conclusive except as regards latent defects, fraud or such gross mistakes as amount to fraud.
- 14.4 The contractor shall provide and maintain an inspection system acceptable to the CGM (Generation), APGCL covering the works and/or supplies hereunder. Records of all inspection works by the contractor shall be kept complete and available to the CGM (Generation), APGCL during the performance of this contract.

15. FORCE MAJEURE

- 15.1 Force Majeure shall cover only act of God, Fire, War, Strikes, Riots and Civil Commotion, Act of Government etc. Any constraints other than those specified above will not constitute force majeure condition. In view of the other constraint beyond the control of the Contractor primarily due to statutory compulsion, extension of execution may also be considered on individual merit of the case. In case of Force Majeure condition the contractor shall notify such condition to CGM (Generation) within 15 (fifteen) days from the beginning of such delay in writing for consideration and acceptance.

16. LIQUIDITY DAMAGE

- 16.1 The liquidated damages shall be payable for delay in completion of the work @ 1 % (one percent) of the executed value per week. The liquidated damages so payable shall not exceed 10% (ten percent) of the executed value. However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the works or from any other obligations and liabilities of the Contractor under the Contract.

17. TERMS OF PAYMENT

- 17.1 Bills shall be entertained on the basis of Actual measurement of completed works as per standard procedure. Payment shall be made only after completion of work subject to the availability of fund.

18. CONTRACTUAL FAILURE:

- 18.1 In the event of Contractual Failure of any respect on the part of the successful bidder, APGCL shall be entitled to forfeit the EMD or any money received from the bidder and may take appropriate action under the terms of the Contract or Law.

19. SETTLEMENT OF DISPUTE:

- 19.1 In the event of any dispute or differences at any time arising between the parties relating to work or any other clauses or any content of the right and liabilities of the parties or other matters specified therein or with reference to anything arising out of the such dispute or differences shall be endeavored to be resolved by mutual negotiation. If, however, such negotiation is infructuous, the dispute should be finally settled through Arbitration and Conciliation Act 1996 by three arbitrators appointed in accordance with the said Act. The

decision of the arbitrator shall be final & binding upon the parties and the expense of the arbitration shall be paid as may be determined by the arbitrator in accordance with provisions of Arbitration and Conciliation Act 1996. The arbitration proceedings shall be held in Guwahati.

20. TERMINATION:

20.1 APGCL may, by not less than 7 (seven) days written notice may terminate the contract, if the contractor:

- i. Fails to remedy a failure in the performance of his obligations,
- ii. Becomes insolvent or bankrupt,
- iii. Submit to APGCL statement which has a material effect on the rights, obligations or interest of APGCL and which the contractor known to be false,
- iv. As result of force majeure, if the whole work cannot be performed for a continuous period of 90 (ninety) days. APGCL shall make payment upon termination to contractor the services performed by the contractor to the entire satisfaction of APGCL prior to date of termination.

21. DEFECT LIABILITY PERIOD: An undertaking in prescribed format (at **Chapter VIII**) must be submitted by the contractor clearly stating that if any defect arises in the repairing works executed by him/her during a period of 5 (five) years from the date of completion of the work, they will repair the same at rates mutually agreeable between APGCL and the contractor. CGM (Generation), APGCL will chair any such negotiation or discussion at his own discretion.

CHAPTER-IV

SAFETY ENGINEERING & SAFETY CODE

1. SAFETY ENGINEERING:

Accident prevention shall be an essential part of the programme of the contractor for all operations involved in performance of the contract under this invitation in order to reduce cost of construction measured in terms of:

- a) Near Miss Accidents
 - a) Accidents
 - b) Temporary injury
 - c) Permanent injury
 - d) Fatal accident
- b) Loss of materials resulting from accidents
- c) Loss of damage to equipment.
- d) The cost of work man's compensation insurance.
- e) Loss of time due to accident, ultimately leading to downtime reduction.

Suitable safety programme should be developed to cope with the particular hazard for each operation. (Operation & maintenance).

GENERAL SAFETY PROGRAMME:

The following program when vigorously promoted by the works' management may be effective in reducing the accident rate

- a) Secure full support from top management of concerned divisions or sections
- b) Publicize safety programme
- c) Develop a safety programme for each job.
- d) Maintain adequate first aid facilities
- e) Make safety practices effective.
- f) All safety ropes, **PPE (Personal Protective Equipment)**, harness, boots, gloves/insulated gloves for electrical works, helmets and First AID Box required for the work have to be supplied by the contractor at his own expense.

SAFETY CODE:

An effective measure of reducing the accident rate during various operations and maintenance works may consist in implementation of respective provisions of the following safety codes accompanied by vigorous promotion and publicity of safety programme.

- a) IS: 818 (C.P. for safety health requirements in electric & gas welding & cutting operations).
- b) IS: 3696(S.C for scaffolding & ladders)
- c) IS: 7205 (S.C for erection of structural steel work)

SAFETY EQUIPMENTS:

All necessary personnel safety equipment as considered adequate by the Engineer-in- Charge should be kept available for use of the persons employed on the site and maintain in a condition suitable for immediate use. The contractor should take adequate steps to ensure proper use of equipment by those concerned

Those engaged in welding works shall be provided with welder's protective eye-shield. Suitable protective foot ware, protective head gears, suitable face masks etc. are to be provided to

workers engaged for operation and maintenance works. The contractor shall not employ men below the age of 18 for any work.

2. INSPECTION

To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the contractor shall be open to inspect by the Engineer-in-Charge or his representative.

3. COMPENSATION

No extra charges or additional compensation will be admissible to the contractor by the department for any work done to comply with the provisions of safety Engineering and Safety Code.

CHAPTER-V

CONTRACTOR'S CAMP

1. CAMP SITES

The contractor shall provide, maintain and operate under competent direction such camp facilities convenient to the site works under this contract as are necessary for housing, feeding and accommodation of his employees. The location, construction, operation and maintenance of such camps shall be subject to the approval of the Assistant General Manager/ Engineer in charge of the site.

2. USE OF LAND FOR CONSTRUCTION PURPOSES

Such land as may be available at work- site will be allowed to be used by the contractor for construction of his camps free of charge. However, development of clearances of the land will have to be done by the contractor at his own cost. The contractor will be responsible to clear and clean the site after completion of his works and handover the land to the Engineer-in-Charge. The contractor will be liable to pay compensation for any damages done to the land or neighboring area.

3. SANITATION IN CAMP SITE:

The temporary sanitation in the campsite should be properly maintained and hygienic so that pollution can be controlled and just before completion of the work site must be cleared properly.

CHAPTER-VI

DECLARATION

I / We hereby declare that I/we shall treat the tender documents and other records connected with the works as secret/confidential and shall not communicate information derived there from to any person other than person to whom I//We/am/are authorized to communicate the same or use the information to any manner prejudicial to the safety of the state.

Signature of the tenderer

Full Name

(In Block letters)

Address

.....

.....

.....

.....

Phone/ Mobile

Date:

CHAPTER-VII

DECLARATION OF LITIGATION

Information on litigation history in which bidder is involved

Employer (APDCL/PGCL/AEGCL)	Cause of Dispute	Amount involved	Remarks showing present status

*(IF NO LITIGATION WITH THE DEPARTMENT JUST WRITE N.A)

CHAPTER-VIII

UNDERTAKING

I / We hereby declare that if any defect arises in the repairing works executed by me/us during a period of **5 (five)** years from the date of completion of the work, I/We will repair the same at rates mutually agreeable between APGCL and us. I/We am/are fully aware of the fact that CGM (Generation), APGCL will chair any such negotiation or discussion at his own discretion.

Signature of the tenderer

Full Name

(In Block letters)

Address

.....

.....

.....

Phone/ Mobile

Date:

CHAPTER-IX

SCHEDULE OF WORK

ANNEXURE-A

To,
The Chief General Manager (Generation),
APGCL, Bijulee Bhawan,
Paltanbazar, Guwahati-1

Sub: Submission of tender for the work “**Repair and Rehabilitation of R.C.C. lined Head Race Tunnel (H.R.T.) at 2 X 50 MW KLHEP**”

Ref: Your E-Tender Notice No. APGCL/CGM(Gen.)-(H&C)/2022-23/KLHEP-Tunnel/16(12)

Dear Sir,

In response to your above notice I/We am /are submitting herewith, my / our quotation for the work as mentioned below. Necessary documents, as asked for, are enclosed herewith, for your kind perusal.

Schedule of items for the work

<i>Sl No</i>	<i>Items of work</i>	<i>Qty</i>	<i>Unit</i>	<i>Rate (Rs.) (inclusive of all taxes and allowances*)</i>	<i>Amount (Rs.) (inclusive of all taxes and allowances*)</i>
1	Cleaning of exposed concrete surface of sticking material including loose and foreign material by cleaning with oil free air blast as per direction of Engineer in charge.	2253.23	Sqm		
2	Chipping of unsound/weak concrete material from R.C.C. lining of tunnel or by standard power driven percussion type or of approved make including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge. Upto 75 mm thickness	70.27	sqm		
3	Cleaning of reinforcement from rust from the reinforcing bars to give it a total rust free steel surface by using alkaline chemical rust remover of approved make with paint brush and removing loose particles after 24 hours of its application with wire brush and thoroughly washing with water and allowing it to dry, all complete as per direction of Engineer-In-Charge. Bars above 12 mm diameter	674.55	mtr		

4	Centering and shuttering including strutting, propping etc. and removal of form for Arches up to 6 m span	44.85	sqm		
5	Designing, Providing, installing and fixing factory finished customed design MS tensile steel joists placed 1.23 metre apart to support the load of slab etc as per the design & directions of Engineer-in-Charge.	1681.88	kg		
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. Thermo-Mechanically Treated bars of grade Fe-500D or more.	663.76	kg		
7	Providing and inserting 12mm dia galvanised steel injection nipple in honey comb area and along crack line including drilling of holes of required diametre (20mm to 30mm) up to required depth at required spacing and making the hole & crack dust free by blowing compressed air, sealing the distance between injection nipple with adhesive chemical of approved make and allow it to cure complete as per direction of Engineer-In-Charge.	862.00	each		
8	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. Epoxy/in concrete/RCC work of approved make	775.80	kg		
9	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area with seepage water of concrete by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. Polyurethane injection grout in concrete/RCC work of approved make	1293.00	kg		
10	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. Stirrer mixed SBR Polymer (of approved make) modified Cement slurry made with Shrinkage Compensating Cement in concrete/RCC work.	862.00	kg		

11	<p>Providing and applying crystalline mortar by mixing in the ratio of 4.5 : 1 (4.5 parts crystalline mortar : 1 part water) for the treatment of faulty construction joints, cracks, tie rod holes and spalled & honeycombed surface of RCC underground structures like tunnels to ensure water tightness. The crystalline mortar shall conform to the EN 1504-3 having compressive strength Class R4 745 MPa and adhesive bond strength Class R3 71.5 MPa. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For sealing cracks and faulty construction joints, routed out/making U-shape groove size 25x25mm and then primed the area with integral crystalline slurry @0.05kg/running metre and while the surface is tacky filled the groove upto surface with crystalline mortar @1.50kg/ running metre. Once crystalline mortar is touch dry then finally applied two coats of integral crystalline slurry @0.05kg/running metre per coat.</p> <p>Providing, mixing and applying bonding coat of approved adhesive on chipped portion of RCC as per specifications and direction of Engineer-In-charge complete in all respect.</p>	104.00	meter		
12	SBR Polymer (@10% of cement weight) modified cementitious bond coat @ 2.2 kg cement per sqm of surface area mixed with specified proportion of approved polymer	783.99	sqm		
13	Epoxy bonding adhesive having coverage 2.20 sqm/kg of approved make	15.00	sqm		
14	<p>Providing, mixing and applying SBR polymer (of approved make) modified Cement mortar in proportion of 1:4 (1 cement: 4 graded coarse sand with polymer minimum 2% by wt. of cement used) as per specifications and directions of Engineer-in-charge.</p> <p>25 mm average thickness in 2 layers.</p>	38.62	sqm		
15	<p>Providing, mixing and applying SBR polymer (of approved make) modified Cement mortar in proportion of 1:4 (1 cement: 4 graded coarse sand with polymer minimum 2% by wt. of cement used) as per specifications and directions of Engineer-in-charge.</p> <p>50 mm average thickness in 3 layers.</p>	38.62	sqm		

16	Shotcreting tunnel lining etc. in layers with approved design mix concrete having the specified minimum characteristic compressive strength [with ordinary portland cement, coarse sand and graded stone aggregate of 10 mm maximum size in proportion as per design criteria] including the cost of centering and shuttering at edges and corners etc. as directed by Engineerin- Charge. Note: Rates shall include the providing necessary ground wires etc. The levelling gauges, if used, shall be paid for separately. Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding/ tapping with a blunt metal instrument. 75mm thick in Grade M 25 with cement content not less than 330 kg per cum	35.20	sqm		
17	Providing and fixing hard drawn steel wire fabric of size 75 x25 mm mesh or other suitable size wire mesh to be fixed & firmly anchored to the concrete surface by means of "L" shaped mild steel shear key welded with existing reinforcement including the cost of materials, labour, tool & plants as approved by Engineer-in-charge.	35.20	sqm		
18	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 1.10 times of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement. All works above plinth level upto floor V level. Concrete of M25 grade with minimum cement content of 330 kg /cum	81.04	cum		
19	Extra for laying reinforced cement concrete in or under water and/ or liquid mud, including cost of pumping or bailing out water and removing slush etc., complete.	81.04	cum		

20	<p>Providing and mixing integral crystalline admixture for water proofing treatment to RCC structures like basement raft, retaining walls, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc. at the time of transporting of concrete into the drum of the ready-mix truck , using integral crystalline admixture @0.80% (minimum) to the weight of cement content per cubic meter of concrete) or higher as recommended by the manufacturer's specification in reinforced cement concrete at site of work. The material shall meet the requirements as specified in ACI-212-3R- 2010 i.e. by reducing permeability of concrete by more than 90%, compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure. The crystalline admixture shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the Engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage.</p>	486.24	kg		
21	<p>Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI- 212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical and overhead surface two coats @ 0.70 kg per sqm</p>	122.83	sqm		

22	Temporary illumination arrangement through out the HRT length for purpose of execution of repair works and subsequent removal of the same after completion of works.	1	job		
Total					

*Allowances include allowance for working in harsh conditions and making lighting arrangements inside the tunnel.

Enclose:

1. Details of earnest money with date
2. Details of tender fee with date

3. Name of Bank

Yours faithfully,

Signature of contractor

Full Name

Address:-

Mobile No:-

E-mail:-

Chapter-X

SALIENT FEATURES

LOCATION OF KLHEP

Location: The 2 X 50 MW Karbi Langpi Hydro Electric Project is located in the West Karbi Anglong District of Assam. The office of the General Manager and other departmental offices are located within the project area at Lengery. The project site is approachable from Guwahati via the following motorable roads:

- a) Guwahati – Jagiroad – Amsoi T.E. – Amtereng – Dam site (at Hatidubi) (Approx 135Km.)
- b) Guwahati – Raha – Kamrup – Baithalangso – Lengery – Amtereng – Dam site (at Hatidubi)
- c) Guwahati – Nagaon – Kathiatoli – Baithalangso – Lengery – Amtereng – Dam site (at Hatidubi)
- d) Guwahati – Jagiroad – Amsoi – Bhoksang – Raja Gaon – Baithalangso – Amtereng – Dam site (at Hatidubi)

The project is located about 80km from Jagiroad railway station and 35km from Kanpur railway station. The latitude and longitude of the project locations are 25°17'12" and 92°30'8" respectively

DESCRIPTION OF WATER CONDUIT SYSTEM SYSTEM

THE KLHEP comprises of a concrete dam, 54.50m high, 197.50m long across the river Borpani near Hatidubi for utilizing 57cumec dependable inflow from a catchment area of 1178 sqkm. The diverted water flows through a conduit system comprising of low pressure tunnel (4.2m dia and 4430m long), two nos of steel lined pressure tunnel (2.6m dia, length 526.7m and 514.20m respectively) and two nos of surface penstock (2.6m dia, length 101.20m and 89.50m respectively) to the lower Borpani surface power station near Amtreng with an installation of 2 x 50MW for utilizing an average drop of 235m. A schematic diagram showing the important hydraulic structures along with the network of interconnected roads is shown in fig at Annexure-A

Our present scope of work is repair and rehabilitation of 4.43km long low pressure tunnel connecting intake well (located 125 m U/S of Hatidubi dam) to surge tank.

INTAKE

- Type: R.C.C. shaft with vertical gate. Intake structure is provided with thrash rack.
- Diameter: 5.70 m
- Control: Fixed wheeled gate operated through shaft.
- Inlet elevation: 301.50 m

LOW PRESSURE TUNNEL

- Type: Horse shoe shaped
- Length: 4430 m
- Diameter: 4.20 m
- Capacity: 57.00 cumec

SURGE TANK

- Type: Circular with upper and lower expansion chamber
- Height of shaft: 46m
- Diameter of shaft: 8.00m

It should be noted that the low pressure tunnel can be accessed from the intake well only for purpose of executing all repair and rehabilitation works.

SPECIAL NOTES:

1. The contractor must have experience in handling and application of different concrete admixtures for repairing of R.C.C. lined water conduit structures, preferably in Tunnel repairing works. Priority will be given to the contractors having experience in tunnel repairing works. Case study document of previously executed tunnel repairing works should be enclosed along with the work completion certificate. **(Documents to be submitted)**

2. The contractor shall submit a detailed rehabilitation plan which shall include the following:

- Details regarding selection of materials, equipment and procedure of rehabilitation. If any new materials/techniques apart from items listed in the BOQ are proposed, they shall be supported with necessary technical/documentation/ data.
- Step by step procedure for execution of work at different locations/ for different elements including surface preparation, method of construction & techniques to be adopted.
- Details of material carriage procedure from the place of stacking to the site of execution. Please note that the only means of access to the low pressure tunnel is through the intake well. No extra payment shall be made for carriage of materials.

(Methodology Documents to be submitted)

3. The following points should be noted with regard to **time frame**:

- The contractor shall be required to submit detailed programme in identified computer software for project monitoring giving details of activities, their sequence, resources to be employed and time schedule etc for approval by the Employer.
- The work shall commence within **10 (Ten days)** from the date of issue of work order.

- The progress of the work shall be reviewed in weekly meetings between representative of Employer and the contractor. The record of such meetings shall be maintained.
- For the delays attributable to the contractor, the contractor shall be made liable to pay compensation to the Employer at a rate as may be specified in the agreement.

4. The following points should be noted with regard to **engagement of manpower** (skilled/semiskilled) by the contractor at site:

- Certain items of repairs and rehabilitation e.g. jacketing, shotcreting, epoxy/ polymer based items, micro-concreting, pre-placed aggregate concrete, etc require qualified/experienced & skilled workmen for execution. The curriculum vitae and composition of the key personnel engaged in the work & the job assigned to each one of them shall be submitted.
 - The key personnel once approved, shall not be changed without the prior permission.
 - Members of team should have requisite experience in the field assigned to them.
- (Specialized manpower list proposed to be deployed at the work site to be submitted by the bidder along with the bid document)**

5. The following points should be noted with regard to **facilities to be provided by the** (skilled/semiskilled) employer at site:

- Electricity

The electricity connection shall be made available by the department at a single point. The electricity distribution lines shall be laid by the contractor at its own cost. Lights etc are required by the contractor for carrying out the work should be arranged at his own cost. Electricity supply will be on chargeable basis.

- Water

The natural water connection shall generally be made available by the department at one point. The distribution lines shall be laid by the contractor at its own cost.

6. Signage: The entry to work area should be restricted to workmen and inspecting staff only. Notice boards of specified sizes shall be provided at appropriate locations for wide information.

7. Food, local conveyance, traveling charges, accommodation or any other charges should be arranged at your own cost.

8. Defect liability period: 5 (five) years from the date of work completion.

9. The following points should be noted with regard to **supply, storage and testing of materials** by the contractor at site:

- **Materials:** Materials proposed to be deployed at work site, their storage arrangements, etc shall be submitted by the contractor before the commencement of the work. Suitable provisions are required to be incorporated for the materials brought to site, giving clearly the name of manufacturer, local source (i.e. dealer), batch no, manufacturer's test certificate etc. Materials shall be kept under recommended conditions storage to avoid damage to the materials. (Relevant documents to be sub
- **Single Source:** It is mandatory to procure all materials for repairs and protection systems (e.g reinforcement protective system, bonding aid or primer, repair mortar, surface filler, finishing coat and protection systems) from single manufacturer. If use of product from multiple manufacturers is unavoidable then the combination should be checked for compatibility. The evidence of previous successful use of materials in combination should be submitted.
- **Storage:** The storage facilities are required to be stated by the contractor in his tender. It shall be commensurate with the quantity likely to be stored at the start and during the execution of work.
- **Testing of Materials:** The contractor shall supply manufacturer's test certificate of each material brought to site of its batch of manufacture.

10. Testing of Completed items of Work:

The specific post repair evaluation tests shall be conducted as deemed necessary by the department. The frequency of tests shall also be incorporated as specified by the department. The cost of sample and test charges may be borne by the department. However, if the sample fails in the performance test, the cost of samples and the testing charges shall be borne by the contractor.

11. Tools and plants

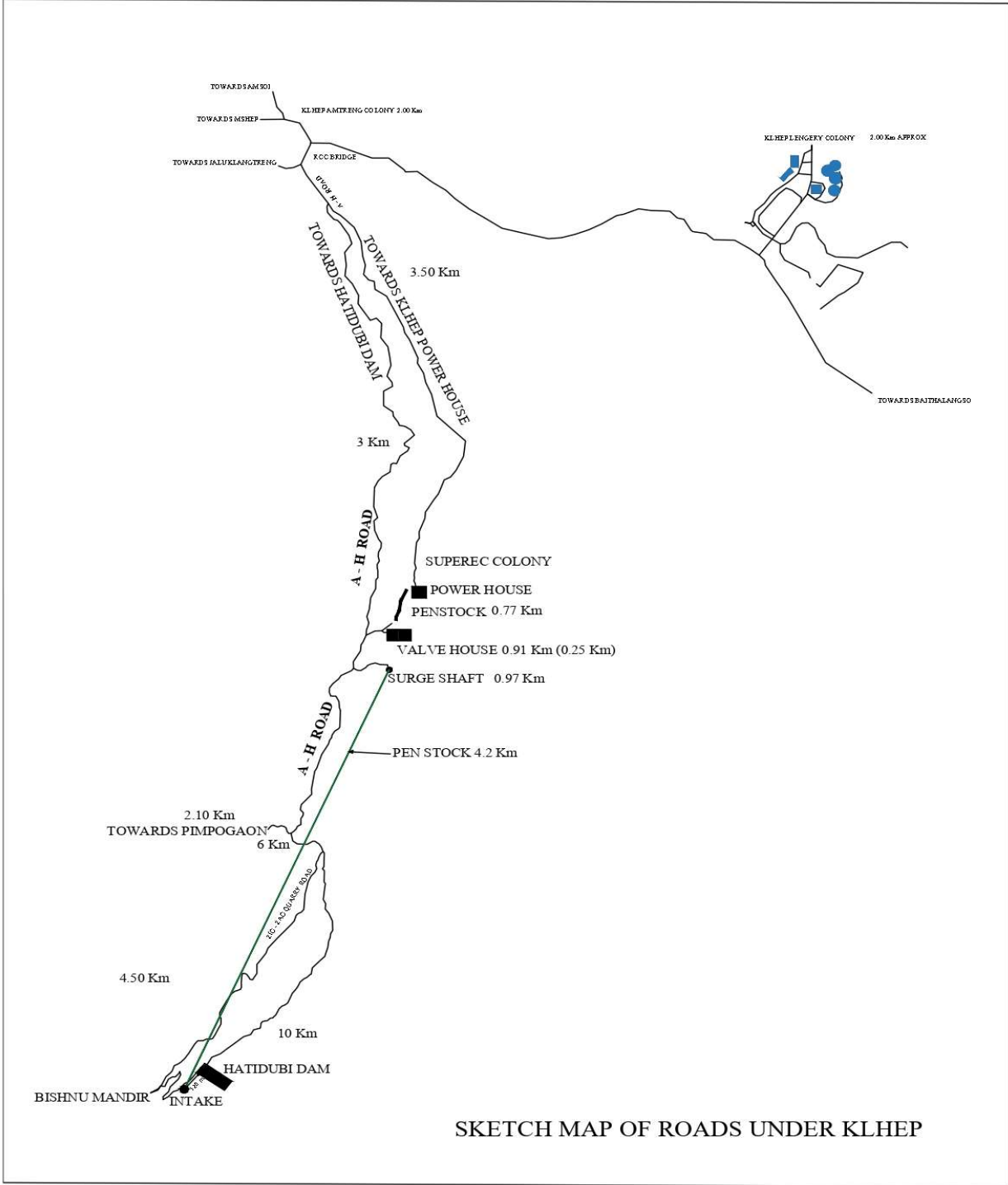
The contractor, while tendering, should submit the details of Tools & plants proposed to be deployed by him on the work site (**Documents to be submitted**) . The tools and plants shall be kept in good working condition. Periodic preventive maintenance shall be carried out in order to avoid sudden break down and loss of working time.

12. Supervision and Inspection of works

- Execution of all critical repair works identified by the employer shall be done in the presence of representative of the employer. It shall be pre requisite for taking up execution of subsequent stage of work.
- A record of day-today supervision and inspection of works shall be maintained by the contractor in a **proforma** prescribed by the employer under the close supervision of the Employer or their authorised representative.

Note: These are standard specifications/ terms and conditions that are considered. Any further issues can be discussed separately and mutually agreed.

The award of this contract to the successful supplier will be based on specification criteria being met and we will seek best value. However best value may not be lowest price.



SKETCH MAP OF ROADS UNDER KLHEP

Some Glimpses of the affected areas inside the Tunnel in March, 2020



