

**BID SPECIFICATION
FOR**

**“Stringing works of 220 KV Samaguri - Sonabil
Transmission line at Brahmaputra river
Crossing at Koliabhomora**

ASSAM ELECTRICITY GRID CORPORATION LTD.

BID IDENTIFICATION NO. AEGCL/MD/TL-12/CROSSING/2017

Rs 2000.00

SECTION – 1

INSTRUCTION TO BIDDER

1.1.0 Scope of Bid

1.1.1. The ASSAM ELECTRICITY GRID CORPORATION LIMITED, herein after referred to as AEGCL or Employer/purchaser will receive bids for the following work.

a) **Name of work:** - Stringing works of 220 KV Samaguri – Sonabil transmission line at Brahmaputra river crossing at Kaliabhomora. (Length : 6.931 Km)

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b) **Scope of Works:** - The scope of works briefly covers the following:

I Supply of Hardware materials... etc

II Opening of 2 nos conductor of ACSR Zebra and Stringing with new conductor with necessary replacement of hardware/Insulators etc.

III Power Conductor will be supplied by AEGCL

IV Carriage of conductor from Dhaligaon and Agia S/S store etc

1.1.2 Bidding should be done for entire work

1.1.3 The successful bidder will be expected to complete the Works within 3 (three) months from the date of issue of work order.

1.2.0 Qualification of the Bidder

1.2.1. To be qualified for award of Contract, bidders:

(A) shall submit a written power of attorney authorizing the signatory of the bid to commit the bidder;

(B) The bidder must possess electrical contractor license from the concerned Govt. authority. A copy of the license should be submitted with the offer, and

(C) must compulsorily meet each of the following minimum criteria

(i) EXPERIENCE

➤ The bidder should have experience in big river crossing work of at least one circuit. Experience in Hotline stringing shall be an added advantage. **The bidder should furnish in detail the stringing procedure to be used for this river crossing work.**

(ii) PERSONNEL CAPABILITY

The Bidder must have suitably qualified personnel to fill positions required for contract implementations. The Bidder will supply information of the key personnel, design & engineering staff, support staff, field staff giving details of experience in supply and erection of transmission line

(iii) **FINANCIAL CAPABILITY**

- The Bidder should furnish necessary documents to show that he has access to, or has available, liquid assets, unencumbered real assets, line of credit and other financial means (interalia including a Guarantee or an undertaking from a Bank or financier)..
 - The average annual turnover of the bidder for the three best financial years out of the last five financial years at minimum should be higher than Rupees **22 Lakh** .
 - Bidder shall submit the complete annual reports together with Audited statement of accounts of the company for last five years.
- 1) The Bidder shall submit the audited balance sheet and income statement of its own (separate) for the last five years and must demonstrate the soundness of their financial position showing long term profitability. Wherever necessary the Employer may make enquiries with Bidder's bankers

(iv) **EQUIPMENT CAPABILITIES**

The bidder should furnish the list of equipment available with them for execution of the work

(v) **LITIGATION HISTORY**

Bidders shall submit details of all litigation, arbitration or other claims, whether pending, threatened or resolved in the last five years.

The Bidder's offer shall include and substantiate data on qualifying requirements such as:

- a) *Copies of original documents defining the constitution or legal status, place of registration, and principal place of business, written power of attorney of the signatory of the Bid to commit the Bidder.*
- b) *Copies of valid Electrical Contractor License issued by competent authority in the State of Assam or in the State where the bidder's business is registered.*
- c) *Total monetary value of similar work performed by the bidder in each of the last five years.*
- d) *Experience in works of a similar nature and volume for each of the last five years, and details of works under way or contractually committed; and clients who may be contacted for further information on those contracts.*
- e) *Qualifications and experience of key site management and technical personnel proposed for the Contract.*
- f) *Reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years.*

- g) *Evidence of adequacy of working capital for this contract (access to line (s) of credit and availability of other financial resources).*
- h) *Information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned, and disputed amount.*
- i) *The Bidder should also substantiate availability (either owned or leased) of the tools, tackles, spare parts etc. for carrying out the works.*

1.2.2. Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements.

1.2.3. Notwithstanding anything stated herein above, AEGCL reserves the right to assess the capacity and capability of the bidder to execute the work, should the circumstance warrant such assessment in the overall interest of AEGCL

1.3.0 Joint Venture

1.3.1 Bids submitted by a joint venture of two or more firms as partners shall also comply with the following requirements:

- (a) The Bid, and, in case of successful Bid, the Form of Agreement shall be signed by all the Partners so as to be legally binding on all partners.
- (b) One of the partners shall be authorized to be as the Lead Partner and submitting a Power of Attorney signed by legally authorized signatories of all the partners shall evidence this authorization.
- (c) The Lead partner shall be authorized to incur liabilities, receive payments and receive instructions for and on behalf of any or all partners of the joint venture and the entire execution of the Contract;
- (d) All the partners of the Joint Venture shall be jointly and severally liable for the execution of the contract in accordance with the contract terms and a relevant statement to this effect shall be included in the authorization mentioned under (b) above as well as in the Bid Form and the Form of Agreement (in case successful bidder).
- (e) A copy of the agreement entered into by the Joint Venture partners shall be submitted with the Bid.
- (f) **Joint Venture agreement must be registered in the Court of Law. Notarised Joint venture agreement shall not be acceptable**

1.4.0 Cost for Bidding

1.4.1. The bidder shall bear all costs associated with the preparation and submission of its bid and AEGCL will in no case be responsible or liable for those costs.

1.4.2. Site Visit

1.4.3. **Right of way is already existed, However the bidder on its own responsibility may visit and examine the site of works and its surroundings and obtain information that may be necessary for preparation of the bid. Any compensation that may be necessary shall be paid by the contractor**

1.4.4. Clarification on Bidding Documents

- 1.4.5. A prospective bidder may ask AEGCL in writing for any clarification on the bidding documents at the following address

Managing Director.
Assam Electricity Grid Corporation Limited,
Bijulee Bhawan, Paltanbazar, Guwahati-781001.

1.5.0 Amendment of Bidding Documents

- 1.5.1. At any time prior to the deadline for submission of bids, the Employer may for any reason modify the bidding documents by issuing addenda which shall be communicated in writing to all purchasers of the bidding documents.
- 1.5.2. Any addendum thus issued shall be part of the bidding documents.

1.6.0 Language of Bid

- 1.6.1. The bid, and all correspondence and documents related to the bid, exchanged between the bidder and the Employer shall be in the English language.

1.7.0 Documents Comprising the Bid

- 1.7.1. The bid submitted **online** by the bidder shall comprise **technical proposal** and the **price proposal separately**.
- 1.7.2. The Bid submitted by bidders shall contain the following:
- a Bid Submission Sheet (Refer Section 4).
 - b Documentary evidence to establish that the Bidder meet the qualifying requirements in accordance with Clause 1.2.0.
 - c Documents to be furnished **as per Clause 1.2.1**.
 - d The Bid Guarantee (Bid Security)
 - e All Bidding Schedules (**Section-4**) properly filled up including Price Bid Schedules.

1.8.0 Bid Form and Price Schedules

- 1.8.1. The Bidder shall complete the Bid Form and the appropriate Price Schedules furnished in the bidding documents in the manner and detail indicated therein, following the requirements of Clauses 1.9.01.8.1.
- 1.8.2. **Bid Prices**
- 1.8.3. Bidders shall quote for the entire facilities on a "single responsibility" basis such that the total bid price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the bidding documents in respect of procurement and subcontracting (if any), delivery, construction, installation and completion of the facilities. This includes all requirements under the Contractor's responsibilities for testing and commissioning of the facilities and, where so required by the bidding documents and in accordance with the requirements of the General Conditions of Contract.

1.8.4. Bidders shall use only the items mentioned in the Annexures while filling up the Price Bidding Schedules (Schedule 3 of Section-4). Any other items which are reasonably inferred or necessary for satisfactory completion of the works covered in the Bidding Document, but which are not specifically specified in the above mentioned Schedule of Items shall be deemed to be included in other items of those Schedules. No payment shall be made separately for those items.

1.8.5. **Schedules of Prices**

1.8.6. In the Schedules, Bidders shall give the required details and a breakup of their prices, including all taxes, duties, levies, and charges payable for both supply and erection.

1.8.7. **Price Adjustment**

Prices quoted by the Bidder shall not be subject to adjustment during performance of the contract to reflect changes in the cost of labour, fuel, material, equipment and transport components. Duties and Taxes shall not also be adjusted, except there is variation due to changes in legislation of the Country.

1.8.8. **Insurance**

The Bidder shall insure the Works in accordance with the requirements of General Conditions of Contract. The bid price shall include all costs in pursuance of fulfilling insurance liabilities under the contract.

1.9.0 **Bid Validity**

1.9.1. Bids shall remain valid for a period of **180 (One hundred and eighty)** days after the date of opening of Bids.

1.9.2. In exceptional circumstances, prior to expiry of the original bid validity period, AEGCL may request that the bidders extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting its bid security. A bidder agreeing to the request will not be required or permitted to modify its bid, but will be required to extend the validity of its bid security for the period of the extension, and in compliance with Clause 1.10.0 in all respects.

1.10.0 **Bid Security (Earnest Money)**

1.10.1. The Bidder shall furnish, as part of its bid Proposal, a bid security in the amount equivalent to **Rs 90000.00 (Rupees Ninety Thousand) only**.

1.10.2. The bid security shall be in the form of an irrevocable Bank Guarantee issued by Nationalized Bank in favour of "**Managing Director, Assam Electricity Grid Corporation Limited, Guwahati**". The bid security shall remain valid for 30 days beyond the original validity period for the bid, and beyond any period of extension subsequently requested

1.10.3. Any bid not accompanied by an acceptable Bid Security shall be rejected as non-responsive.

1.10.4. The bid securities of unsuccessful bidders will be returned as promptly as possible, after the expiry of the period of bid validity.

1.10.5. The bid security may be forfeited

- (a) if the bidder withdraws its bid, except as provided in Sub-Clause 1.16.1 ;
- (b) if the bidder does not accept the correction of its bid price, pursuant to Sub-Clause 1.20.2; or
- (c) in the case of a successful bidder, if it fails within the specified time limit to
 - (i) sign the Contract Agreement,

1.10.6. No interest shall be payable by the Employer on bid guarantee.

1.11.0 Alternative Proposals by Bidders

1.11.1. Bidders shall submit **online** offers, which comply with the Bidding Documents, including the basic Employer's Requirements as indicated in the bidding documents. Alternatives will not be considered.

1.12.0 Format and Signing of Bid

1.12.1. The bidder shall submit the bid proposal **online**, envelope wise separately. In the event of discrepancy between the original and any copy, the original shall prevail. However, AEGCL may ask bidder to submit hard copies of GTP, Drawings, Manufacturers authorization of the major items and **any other document** if deemed necessary.

1.12.2. The original and scanned copies of the bid shall be signed by a person or persons duly authorized to sign on behalf of the bidder, pursuant to Sub-Clauses. All pages of the bid where entries or amendments have been made shall be initialed by the person or persons signing the bid.

1.12.3. The bid shall contain no alterations, omissions or additions, except those to comply with instructions issued by AEGCL, or as necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

1.12.4. The Bid must contain the name, residence and place of business of the person or persons making the Bid and must be signed and sealed by the Bidder with his usual signature. The names of all persons signing should also be typed or printed below the signature.

1.12.5. Bids by Corporation / Company must be signed with the legal name of the Corporation/Company by the President, Managing Director or by the Secretary or other person or persons authorized to Bid on behalf of such Corporation/Company in the matter.

1.12.6. A Bid by a person who affixes to his signature the word 'President', 'Managing Director', 'Secretary', 'Agent', or other designation without disclosing his principal will be rejected.

1.12.7. Satisfactory evidence of authority of the person signing on behalf of the Bidder shall be furnished with the Bid.

1.12.8. The Bidder's name stated on the proposal shall be exact legal name of the firm

1.12.9. Bids not conforming to the above requirements of signing may be disqualified.

1.13.0 Sealing and Marking of Bids

1.13.1. The bidder shall submit the bid proposal **online**, envelope wise separately. In the event of discrepancy between the original and any copy, the original shall prevail. However, AEGCL may ask bidder to submit hard copies of GTP, Drawings, Manufacturers authorization of the major items and **any other document** if deemed necessary.

1.13.2. The bidder shall seal the envelopes containing the original technical and price bids and copies of the bid and than the originals and copies along with the envelop containing the Bid Security shall be put into a sealed outer envelop.

1.13.3. The inner and outer envelopes shall

(a) be addressed to the Employer at the following address:

**Managing Director,
Assam Electricity Grid Corporation Limited
Bijuli Bhawan, Guwahati- 781 001
ASSAM**

1.14.4 The technical proposal shall be opened on the day of the opening as indicated. Price bid shall be opened on a later date, which shall be intimated to the firms, technically suitable and comply the terms and conditions as per the specification

1.14.5. Submission, Sealing and Marking of Bids

1.14.5.1 Bidders must submit their bid online. Procedures for online submission of bid are in accordance with **IFB & as given in the portal.**

1.14.5.2 Bidders submitting bids online shall upload scanned copy of the original and each copy of the Bid, The rest of the procedure shall be in accordance with **IFB .**

1.14.6 Deadline for Submission of Bids

Bids must be submitted online on stipulated time and no bid can be accepted by the system after expiry of closing time.

1.14.0 Late Bids

1.14.1. Any bid received by AEGCL after the deadline for submission of bids prescribed in Clause will be rejected and returned unopened to the bidder.

1.15.0 Late Bids

1.15.1. Any bid received by AEGCL after the deadline for submission of bids prescribed in Clause will be rejected and returned unopened to the bidder.

1.16.0 Withdrawal of Bids

1.16.1. The bidder may withdraw its bid after bid submission, provided that written notice of the withdrawal is received by AEGCL prior to the deadline for submission of bids.

1.16.2. The bidder's withdrawal notice shall be prepared, sealed, marked and delivered in, with the envelopes additionally marked "WITHDRAWAL".

1.16.3. Withdrawal of a bid during the time between the deadlines for submission of bids and bid validity period specified in Sub-Clause 1.9.1 may result in the forfeiture of the bid security.

1.17.0 Opening of Bids

1.17.1. AEGCL will open the technical bids, in the presence of bidders' representatives who choose to attend; at **15:00 hours on 10.4.17** at the following location:

**O/O the Managing Director.
Assam Electricity Grid Corporation Limited,
Bijulee Bhawan, Paltanbazar, Guwahati-781001.**

The bidders' representatives who are present shall sign a register as evidence of their attendance.

- 1.17.2. Envelopes marked "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 1.16.0 shall not be opened.
- 1.17.3. The bidders' names, the Bid Prices, the presence or absence of Bid Security, and such other details as AEGCL may consider appropriate, will be announced and recorded by AEGCL at the opening. The bidders' representatives will be required to sign this record.

1.18.0 Process to Be Confidential

- 1.18.1. Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process..

1.19.0 Clarification of Bid Proposals and Contacting AEGCL

- 1.19.1. To assist in the examination, evaluation and comparison of Bids, AEGCL may, at its discretion, ask any bidder for clarification of its bid. The request for clarification and the response shall be in writing, but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors detected by AEGCL in the evaluation of the bids.

1.20.0 Correction of Errors

- 1.20.1. Price Proposals determined to be substantially responsive will be checked by AEGCL for any arithmetic errors. Arithmetic errors will be rectified on the following basis. If there is a discrepancy between the unit rate and the total cost that is obtained by multiplying the unit rate and quantity, the unit rate shall prevail and the total cost will be corrected unless in the opinion of AEGCL there is an obvious misplacement of the decimal point in the unit rate, in which case the total cost as quoted will govern and the unit rate corrected. If there is a discrepancy between the total bid amount and the sum of total costs, the sum of the total costs shall prevail and the total bid amount will be corrected.
- 1.20.2. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security may be forfeited.

1.21.0 Evaluation and Comparison of Bid Proposals

- 1.21.1. AEGCL will evaluate and compare only the bids determined to be substantially responsive.
- 1.21.2. AEGCL reserves the right to accept or reject any variation or deviation.

1.21.3. AEGCL will award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the Lowest Evaluated Bid Price, provided that such bidder has been determined to be qualified in accordance with the provisions.

1.22.0 Employer's Right to Accept any Bid and to Reject any or all Bids

1.22.1. Notwithstanding Clause, AEGCL reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without assigning any reason and liability to the affected bidders.

1.23.0 Notification of Award

1.23.1. Prior to expiry of the period of bid validity prescribed by AEGCL, AEGCL will notify the successful bidder by letter, that its bid has been accepted. This letter ("Letter of Acceptance") shall mention the amount which AEGCL will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as prescribed by the Contract ("the Contract Price").

1.24.0 Performance Security

As a contract performance security, you are to furnish a performance security equal to 10% of the contract price in the form of Bank guarantee from a Nationalised Bank within 15 days of issue Letter of Intent duly pledged in favour of Managing Director, AEGCL. Performance guarantee shall be valid upto 30 days after the end of warrantee period.

1.24.1. The performance guarantee shall cover additionally the following guarantees to the owner: that the material used in the works shall be free from any defect and workmanship. All defects upon written notice from the Owner shall be rectified.

1.24.2. The Contract performance Guarantee will be returned to the Contractor without any interest at the end of warrantee period.

1.24.0 Retention money

In addition to above performance security deposit, 5% value of each progressive bills will be retained by the purchaser as retention money. The amount will be held by the purchaser till the work under the contract is completed and the completion certificate is issued by the consignee/supervising authority. No interest shall be payable for such deposits..

1.25.0 Warrantee : The material/equipment and services shall be guaranteed for satisfactory performance for a period of 18 months from date of supply or 12 months from the date of commissioning and taking over of the line by AEGCL as per clause. During the period of guarantee you shall rectify all defects in design, material and workmanship that may develop upon written notice from the consignee. The rectification / replacement must be carried out within a reasonable period free of cost.

1.26.0 Signing of Contract Agreement

1.26.1 A "Contract Agreement" shall be signed between the successful bidder and AEGCL within **15 (fifteen) days** from the date of notification of award.

1.27.0 Forfeiture of Bid Security

1.27.1 Failure of the successful bidder to comply with the requirements shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security.

SECTION-2

GENERAL CONDITION OF CONTRACT

2.1.0 Introduction

- 2.1.1. This General Conditions of Contract is supplementary to “**General Conditions of Supply and Erection of AEGCL**”, ***However, in case of any contradiction, stipulations made in this Bidding Document shall prevail.***

2.2.0 Contractor to Inform Himself Fully

- 2.2.1. The contractor should admit that he has examined the general condition of contract, specifications and schedule and has satisfied as to all the conditions and circumstances affecting the contract prices and fixed his price according to his own views on these matters and acknowledge that no additional allowances except as otherwise provided therein will be levied. The purchaser shall not be responsible for any misunderstanding or incorrect information obtained by the contractor other than information given to the contractor in writing by the purchaser.

2.3.0 Extension of Time

- 2.3.1. If the completion of the work is delayed due to reason beyond the control of the contractor, the contractor should without delay give notice to AEGCL in writing of his claim for an extension of time. The AEGCL may extend the completion date as may be reasonable but without prejudice to other terms and conditions of the contract.

2.4.0 Variations, Additions and Omissions

- 2.4.1. The contractor shall not modify any of the terms and conditions except as directed in writing by AEGCL.
- 2.4.2. The AEGCL shall have the right during the contract to amend, alter, omit or otherwise vary any of the items by notice in writings. The contractor shall carry out such variations although the said variations shall not exceed (+/-)15% of the contract price. The amount of such variations shall be determined in accordance with rates specified in the contract and where such rates are not available this will be mutually agreed between the purchaser and the contractor.

2.5.0 Taking Over

- 2.5.1. When entire scope of works is completed by the Contractor and successfully commissioned in accordance with the Contract, the same shall be taken over by AEGCL and a Taking-Over Certificate for the Works shall be issued.
- 2.5.2. The date of issue of the ‘Taking Over Certificate’ by AEGCL or its representative shall be the date of taking over the works.

2.6.0 Terms of Payment

The terms of payment for the works shall be as follows:

- a) No advance payment shall be made in this contract.
- b) No claim for interest shall be entertained by AEGCL
- c) two nos running bills shall be entertained after completion of 40% and 80% of the work for total supply and erection part. 5% retention shall be made in addition to the 10% performance guarantee.
- d) Balance amount including the retention money of 5% shall be paid after satisfactory completion of work.
- (e) Performance guarantee will be retained till the completion of warrantee period
- f) The price is firm and no price variation shall be applicable.

2.7.0 Liability for Accidents and Damage

- 2.7.1. The contractor shall indemnify the AEGCL against any loss , damage, and injury to any person or to any property and against any other liability or obligation and against all actions, suits, claims demands costs, charges and expenses arising in connection with such damage , injury, liability or obligation resulting from:-
 - (a). the negligence of the contractor and his workers, agents, subcontractors; and/or
 - (b). the lack of or inadequacy of safety devices on equipment supplied under this contract.

2.8.0 Use of Materials Arranged by the Board

- 2.8.1. If any materials supplied by AEGCL are found to be misused or wasted due to negligence by the contractor comes to the notice of the Corporation then the contractor shall be liable to pay compensation to the Corporation as may be decided by the Corporation.

2.9.0 Penalty for Delayed Execution

- 2.9.1. In the event of delay in completing the work extending beyond the date of completion or beyond any extension, permitted by AEGCL, the contractor shall pay as agreed liquidated damage and not as a penalty a sum equal to 0.25% of the contract price under this contract for each week of delay or part thereof subject to a maximum of 5% of the contract price. However this is subject to force majeure condition.

2.10.0 Settlement of the Dispute & Arbitration

- 2.10.1. Any dispute arising out of the contract will first be discussed and settled bilaterally between the AEGCL and firms/ contractors. In case, the dispute cannot be settled bilaterally, it will be referred to arbitration by an arbitrator to be appointed by the Assam Electricity Grid Corporation Limited, The contractor shall not stop the work during settlement of any arbitration case. All disputes arising out of the agreement so made shall be subjected to the jurisdiction of district court of Kamrup District.

2.11.0 Force Majeure

- 2.11.1. Force Majeure shall be considered as any circumstances beyond the reasonable control of the party claiming relief, including but not limited to strikes lockout, civil commotion, riot,

insurrection, hostilities, mobilization, war, fire, flood, earthquake, malicious damage or accidents or delay in delivery of equipments or part thereof by AEGCL, would entitle contractor to extension of time.

2.12.0 Progress Report

2.12.1. The contractor shall submit to AEGCL monthly progress report within the first week of every month giving the status of the contract work.

2.13.0 Age Limit of Labour

2.13.1. The contractor shall not employ persons below the age of 18 years .

2.14.0 Safety & Precautions

2.14.1. The contractor shall provide adequate safety devices like head protective gears, belt etc, to his labours while executing the erection work.

2.14.2. **Any other point not specifically mentioned will be as per General conditions of supply and erection 2009 of AEGCL for the whole tender**

SECTION – 3

TECHNICAL SPECIFICATIONS

3.1.1. This Section is intended to cover the requirements for supply, erection, testing & commissioning of following equipments and materials:

- ii) Hotline stringing of Power Conductors and Ground Wires (ACSR ZEBRA)
- iii) Supply of Disc Insulators, Insulator String Hardware, Tension & Suspension Clamps and conductor and earth wire accessories.
- iv) Testing and commissioning.

Bidders are required to submit the GTP of all the materials and equipment to be supplied and also the name of the firms from where the materials shall be procured. Relevant specification like IS/BS/IEC should be mentioned

3.2.0 General

3.2.1. The details specifications given below are intended for general description of quality, workmanship etc for the items given above but do not cover minutes details of the work. In the absence of relevance details in the specifications the work shall be execute according to the prevailing practices and to the discretion of the site engineer.

3.2.2. This Section shall have precedence in case anything contrary to this is stated anywhere in this contract document. The contractor shall get clarified any doubts about the specifications etc. before tendering in respect pf interpretation of any portion of this document.

3.2.3. The code referred to in this specification correspond to the latest revision.

3.3.0 Power Conductor (ACSR Zebra)

3.3.1. Conductor shall be supplied by the Department

3.4.0 Insulators and Hardware

3.4.1. STANDARDS

3.4.1.1. The suspension and tension string assemblies, insulator discs and hardware offered, material and processes adopted in the manufacture of insulator discs and hardware shall conform to the provision of the following standards or equivalent other international standards:

- (1) IS: 731 Specification of porcelain insulators for overhead power lines.
- (2) IS: 2486 Specification of insulator fittings for overhead power lines.
- (3) IS: 2026 Specification for recommended practice for hot dip galvanising of steel
- (4) IS: 2633 Specification for method for testing uniformity of coating on zinc coated articles.
- (5) IS: 2107 Specification for white hearth malleable iron castings.
- (6) IS: 2108 Specification for black hearth malleable iron castings.

3.4.2. Insulator String Hardware

3.4.2.1. HARDWARE

Each insulator string assembly shall generally include the following hardware:
Anchor shackle for attachment of suspension string assembly to the tower hanger and tension string assembly to the tower strain plate. Suitable top and bottom yoke assemblies with the arrangement of fixing a set of arcing horns.

- Set of arcing horns
- Suspension or tension clamp
- Bolts, nuts, washers, split pins etc.
- Other fittings necessary to make the strings complete such as ball clevis, socket clevis, chain links etc.

The tenderer shall be responsible and satisfy himself that all the hardware included in strings are entirely suitable for the conductor offered.

3.4.2.2. *SUSPENSION CLAMP*

The suspension clamps shall be made of malleable iron or aluminium alloy, hot dip galvanised and shall be suitable to accommodate the conductor together with one set of preformed armour rods. Suitable sheet aluminium liners shall be provided. The suspension clamps shall be designed to avoid any possibility of deforming or damaging the conductor. The lips shall be rounded off and the seating and the bell mouths shall be smooth to avoid corona and radio interference noises. The suspension clamps shall be suitable to carry the bottom part of the arcing horn and to receive the fittings of the insulator string.

The suspension clamps shall be such that the conductor should not slip at a load of 25% of the breaking load of the conductor. The ultimate strength of the clamp for vertical load shall not be less than the failing load of the Disc Insulators.

3.4.2.3. *STRAIN CLAMP*

The bolted strain clamps shall also be made of malleable iron or aluminium alloy; hot dip galvanised, lined with sheet aluminium liners and shall be suitable to accommodate the conductor with necessary binding tapes etc. The lips shall be rounded off carefully and conductor seating and the ball mouth shall be smooth to avoid corona and radio interference noises. Suitable attachment for receiving one side of arcing horns and for connecting to the insulator strings shall be provided.

The strain clamps shall be such that the conductor should not slip at a load of 90% of the breaking load of the conductor. The ultimate strength of the clamp for horizontal load shall not be less than the ultimate strength of the conductor.

3.4.2.4. *ARCING HORN*

Arcing horns of approved size and dimensions shall be provided for every string of insulators. The performance data for arcing horns to be supplied shall be made available to the Employer.

3.4.2.5. **Security Clips and Split Pins**

Security clips for use with ball and socket coupling shall be R-shaped, hump type which provides positive locking of the coupling as per IS: 2486-(Part-III)/IEC: 372. The legs of the security clips shall be spread after assembly in the works to prevent complete withdrawal from the socket. The locking device should be resilient, corrosion resistant and of suitable mechanical strength. There shall be no risk of the locking device being displaced accidentally or being rotated when in position. Under no circumstances shall the locking devices allow separation of fittings.

The hole for the security clip shall be countersunk and the clip should be of such design that the eye of clip may be engaged by a hot line clip puller to provide for disengagement

under energised conditions. The force required to pull the security clip into its unlocked position shall neither be than 50 N (5 kg) nor more than 500 N (50 kg).

Split pins shall be used with bolts & nuts.

3.4.2.6. **Arcing Horn for EHV Strings**

The arcing horn shall be provided on tower side of the hardware fittings. The same shall be either ball ended rod type or tubular type.

The spark gap shall be so adjusted to ensure effective operation under actual field conditions.

3.4.2.7. **Dead End Assembly**

The dead end assembly shall be suitable for Conductor as detailed in the document.

The dead end assembly shall be compression type with provision for comprising the jumper terminal at one end. The angle of the jumper terminal to be mounted should be 300 with respect to the vertical line. The area of bearing surface on all the connections shall be sufficient to ensure positive electrical and mechanical contact. The resistance of the clamp when compressed on Conductor shall not be more than 75% of the resistance of equivalent length of Conductor.

The assembly shall not permit slipping of, damage to, or failure of the complete conductor or any part there of at a load less than 95% of the ultimate tensile strength of the conductor.

ERECTION PART :

3.5.0 General

3.5.1. The details specifications given below are intended for general description of quality, workmanship etc for the items given under clause 3.1.0 above but do not cover minutes details of the work. In the absence of relevance details in the specifications the work shall be executed according to the prevailing practices and to the discretion of the site engineer.

3.6.0 Stringing of Conductor and Earth Wire

3.6.1 The Hotline stringing of the conductors and earth-wires shall be done in a most standard method used for such lines, which shall be indicated in the tender. **The tenderer shall give complete details of the stringing method they propose to follow and indicate its adaptability and advantages in the technical bid.** They shall also indicate the tools and equipment required for stringing by the method proposed by them. The contractor shall use his own stringing and erection tools and other equipment.

3.6.2 The contractor shall be entirely responsible for any damage to the towers or the conductors during stringing.

3.7.0 Pulling Operation:

3.7.1 The earth wire shall be strung and securely clamped to the towers before the conductors are drawn up in order of the top conductor first.

3.7.2 The pulling of the conductor into the travellers (comprising of aerial and ground rollers) shall be carried out in such a manner that the conductor is not damaged or contaminated with any foreign substance and that it may not be rubbed with rough ground surface. The traveler surface in contact with aluminium surface of conductor is not damaged. These shall be equipped with high quality ball and roller bearings for minimum friction.

3.7.3 During pulling out operation the tension in each conductor and earth wire shall not exceed the design working tension of the conductor at the actual prevailing temperature. After being pulled the conductor and the earth wire shall not be allowed to hang in the stringing blocks for more than 96 hours, before being pulled to the specified sag. It shall be ensured that the conductors and earth wire are not damaged due to wind, vibration or other cause.

3.8.0 **Sagging in Operation:**

3.8.1 The conductors shall be pulled up to desired sag and left in travellers for at least one hour after which the sag shall be rechecked and adjusted. The conductors shall be clamped within 36 hours for sagging in. The sags shall also be checked when the conductors have been drawn up and transferred to the insulator clamps.

3.8.2 At sharp vertical angles the sags and tensions shall be checked on both sides of the angle. Sagging operations shall not be carried out under wind, extremely low temperature or other adverse weather conditions, which prevent satisfactory sagging.

3.9.0 **Jointing:**

3.9.1 All the joints of the conductor or the earth wire shall be compression type in accordance with the recommendations of the manufacturers, for which the necessary tools and equipment like compressors and dies, grease guns, presses shall have to be arranged by the contractor.

All joints and splices shall be made at least 30 meters away from the structures. No joint or splices shall be made in span crossing over main roads, railways, small rivers or in tension spans. Not more than one joint shall be allowed in one span.

After pressing the joint the aluminium sleeve shall have all corners rounded, burrs and sharp edges removed and smoothened.

3.10.0 **Insulator Hoisting:**

Suspension insulator strings shall be used up to deviation of 2 degrees on all 'A' type towers in the line and strain insulators on all 'B', C and D' type towers. Except on approaching towers, all suspension strings will consist of the specified number of insulator discs per string with arching horns on line side only and tension string of specified number of insulator discs per string with arcing horns on both line and tower sides.

Insulator strings shall be assembled on the ground. These shall be cleaned and examined before hoisting. Insulators with hair cracks or clips or those having glazing defects exceeding half centimeter square will not be used. No separate rates shall be quoted for insulator hoisting. The charges shall be included in the rates of string of conductors.

3.11.0 **Accessories:**

Accessories like vibration dampers; armour rods etc. for the conductor shall also be fitted on the line. Armour rods shall be provided at all suspension support of the conductors and vibration dampers shall be provided at both ends of each span at suitable distances from the supporting points for each phase conductor. All accessories shall be clean, smooth and in perfect condition before fitting.

3.12.0 Final Checking, Testing & Commissioning

After completion of the works, final checking of the line shall be done by the contractor defects found shall be rectified

3.12.1 After satisfactory tests on the line and on approval by the Employer the line shall be energized at full operating voltage before handing over.

ANNEXURE – 1

Provisional Schedule of items for Supply

Sl No	Item description	Unit	Qty	Rate in Rs	F&I in Rs	E.D.	CST/VAT	Amount in Rs
1	Double Suspension H/W fittings complete set	Set	10					
2	Repair sleeve for conductor.	Set	10					
3	Mid span joint for ACSR Zebra conductor, Compression type	Set	15					
4	Double tension H/W fittings complete set	Set	04					
5	PA rod for ACSR Zebra conductor	No	36					
6	160 KN Porcelain Disc Insulator	Nos	350					
7	Grand total for supply (1-6)							

ANNEXURE – II

Provisional Price schedule for erection

Item No	Description	Unit	Quantity/Volume	Rate	Amount
1	Laying of new conductors across the towers on the river along with jointing, clamping, jumpering, hoisting of insulators including repair and replacement wherever required and connecting two anchor towers for one nos of complete power conductor of length 6.413 Km and for one conductor of length 0.5 Km. Total Length = 6.913 Km including Sag The rate shall include hiring charges of Tugs, Burges, Big boats etc., Transportation of equipment and materials by any means to and fro, mobilization charges etc.. complete for the entire route of the crossing	LS	Entire route of the crossing		
2	Transportation charge for Collection of Power Conductor (ACSR ZEBRA) stored at Dhaligaon & Agia S/S to the site	LS	Required Conductor		
3	Total for erection (1 to 2)				

Section – 4

**BID SUBMISSION SHEET, BID FORMS AND
SCHEDULES**

1 Bid Submission Sheet

Name of Contract: _____

To:

The Managing Director,
Assam Electricity Grid Corporation Ltd,
Bijulee Bhawan, Paltanbazar, Guwahati-781001

Sir:

We have examined the General Conditions of Contract, Technical Specification, Schedules, and Addenda Nos _____(if any). We have understood and checked these documents and have not found any errors in them. We accordingly offer to execute and complete the said Works and remedy any defects fit for purpose in conformity with these documents and the enclosed Proposal (Offer), for the fixed sum of Ruppees _____ *(insert total quoted total price in figures and words)*.

We accept your suggestions for the appointment of the Dispute Adjudication Board, as set out in the Bidding Document.

We agree to abide by this Bid until _____ and it shall remain binding upon us and may be accepted at any time before that date.

If our bid is accepted, we will provide the specified performance security, commence the Works as soon as reasonably possible after receiving the notice to commence, and complete the Works in accordance with the above-named documents within the time stated in the Bidding Document.

Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Yours faithfully

Signature _____ in the capacity of _____ duly authorized to sign bids for and on behalf of _____

Address

2 Form of Bid Security (Bank Guarantee)

WHEREAS, _____ [Name of Bidder] (hereinafter called "the Bidder") has submitted his bid dated _____ [Date] for the construction of _____ [Name of Contract] (hereinafter called "the Bid").

KNOW ALL MEN by these presents that We _____ [Name of Bank] of _____ [Name of Country] having our registered office at _____ (hereinafter called "the Bank") are bound unto _____ [Name of Employer] (hereinafter called "the Employer") in the sum of _____ for which payment well and truly to be made to the said Employer the Bank binds himself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this ___ day of _____ 20__.

THE CONDITIONS of this obligation are:

- (1) If the bidder withdraws his Bid during the period of bid validity specified in the Form of Bid: Or
- (2) If the Bidder refuses to accept the correction of errors in his Bid; Or
- (3) if the Bidder, having been notified of the acceptance of his Bid by the Employer during the period of Bid validity;
 - (a) fails or refuses to execute the Form of Contract Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders;

we undertake to pay to the Employer up to the above amount upon receipt of its first written demand, without the Employer having to substantiate its demand, provided that in its demand the Employer will note that the amount claimed by it is due to it owing to the occurrence of one or all of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date 210 days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

(Signature, Name, and Address)

3. Work Completion Schedule

We hereby declare that the following Work Completion Schedule shall be followed by us in executing the works covered under the Scope of this Bid.

Sl. No.	Description of Work	Period in Months (from the date of LOA)
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Date : (Signature)

Place : (Printed Name)

(Designation).....

(Common Seal).....