ASSAM ELECTRICITY GRID CORPORATION LIMITED

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CIN: U40101AS2003SGC007238
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BID IDENTIFICATION NO: AEGCL/DGM/LAC/TT/TLS-69/2026/920 ; Dated: 05-11-2026

Bidding Document
For

Emergency repairing of damaged Brahmaputra River crossing anchor tower legs of 132kV Kahilipara-Kamakhya-Sishugram-AIIMS DC TL.

DEPUTY GENERAL MANAGER,
LOWER ASSAM T&T CIRCLE, AEGCL
NARENGI, GUWAHATI-26

Bidder's Signature & Seal

SECTION - 1

INSTRUCTION TO BIDDER

1.1.0 INTRODUCTION:-

1.1.1 The **Deputy General Manager, Lower Assam, T&T Circle, AEGCL** on behalf of Assam Electricity Grid Corporation Ltd, hereinafter referred to as AEGCL or Purchaser invites sealed limited tenders in prescribed form, **among existing empanelled firms/ contractors for O&M Transmission line works** under various T&T Circles of AEGCL and having sound technical and financial capabilities for the following work. A single stage two envelope bids (**Techno-Commercial and Price Bid**) will be adopted for this tender.

a) **Name of Work :- Emergency repairing of damaged Brahmaputra River crossing anchor tower legs of 132kV Kahilipara-Kamakhya-Sishugram-AIIMS DC TL.**

b) **Estimated Value for Work :- Rs.2,27,373.00 (Rupees Two Lakh Twenty Seven Thousand Three Hundred and Seventy Three) only** including taxes.

c) **Fund: O&M HQ (LAR) for FY 2026-27**

d) **Key Dates: Refer to NIT.**

e) **Bidding address** :-
O/o The Deputy General Manager
Lower Assam, T&T Circle, AEGCL,
Narengi.Guwahati-26

f) Interested empaneled contractors may obtain further information from the office of the Deputy General Manager, Lower Assam T&T Circle, AEGCL, Narengi, Guwahati - 781026, Assam. [e-mail: dgmttc.guwahati@aegcl.co.in]

g) **Cost of Bidding :-** 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.

Tender Paper Cost and Mode of Payment:
The cost of the tender paper is **Rs. 500/- (Rupees Five Hundred**) o**nly to** be pledged in favour of **"AEGCL, Guwahati"**(in the form of A/C payee DD/Bankers Cheque)

1.2.0 SCOPE OF WORK :-

1.2.1 The major scopes of work are as follows:-

a) Repair and replacement of damaged tower legs, including all associated civil works of damaged Brahmaputra River crossing anchor tower legs of 132kV Kahilipara-Kamakhya-Sishugram-AIIMS DC TL as per bid specifications and BOQ.

a. Painting of tower with bituminous paint of approved quality up to 3 mts from ground level as per bid specifications and BOQ.

b. Transportation, head loading, storage at site and site insurance of all material at the site shall be in the scope of the contractor.

c. All works and labour as per Bill of Quantity and bid specification is under the scope of the bidder.

d. The Bill of Quantities for indicative purposes is furnished in Price Schedules.

1.3.0 TIME SCHEDULE:

The successful bidder shall have to complete the works within **60 (sixty) days from the date of site handover and subject to availability of shutdown**. Bidders should note that time is the essence of this bid.

1.4.0 ELIGIBILITY CRITERIA

1.4.1 To be qualified for the bid the bidder must compulsorily meet the following minimum criteria; Bidder must establish the experience as single contractor :-

i) Must be an empanelled contractor for O&M Transmission line works of AEGCL and must have experience having completed similar nature of works previously in AEGCL or any other govt. organization/PSU during the last 7 years

Bidder's Signature & Seal

Note: The nature of works should be clearly defined. The bidder must submit experience and completion/performance certificate for scrutiny by AEGCL. In addition to above, the criteria regarding satisfactory performance of works, personnel, establishment, plant, equipment, etc. may be incorporated according to the requirement of the Project.

ii) Bidder must have valid electrical license and experience of working on 132kV and above Transmission line and towers.

iii) **JV is not allowed for this bid.**

iv) Must compulsorily meet each of the following minimum criteria.

1.4.2 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 relevant Electrical Licence (valid) of working on 132kV and above Transmission line and towers issued by competent authority in the State of Assam or in the State where the bidder's business is registered.

c) Copies of Labour Licence (valid) issued by competent authority in the State of Assam or in the State where the bidder's business is registered.

d) Copies of PAN, GST Registration Certificate as per Goods & Services Tax laws. Bidder must keep GST liabilities up to date and must submit the up-to-date GST return acknowledgement.

e) Experience in works of a similar nature and volume (as mentioned above in clause no 1.4.1 (i)) , and details of works under way or contractually committed in AEGCL.

f) Reports on the latest financial standing of the Bidder, such as profit and loss statements and audited annual accounts certified by CA of the company for the last one year including IT return duly acknowledged by the tax department for the last one year.

g) Evidence of adequacy of working capital for this contract (access to line (s) of credit and availability of other financial resources).

h) Copy of contract agreement showing the bidder's empanelment in AEGCL for the current year.

1.4.3 **Sub-contractor's experience and resources shall not be taken into account in determining the bidder's compliance with the qualifying criteria.**

1.4.4 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.

1.4.5 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.

1.5.0 SITE VISIT:-

The interested empaneled contractors are advised to visit and examine the sites of works and its surroundings, nature off work, site conditions, area for storage of materials, establishment of labour camp, means of access to the site etc. and obtain for themselves on their own responsibility all information that may be necessary for preparing the bid. The costs of visiting the Site shall be at the bidder's own expense.. Non-familiarity with the site conditions will not be considered a reason either for extra claims or for not carrying out the work in strict conformity with the specifications and requirement.

1.6.0 QUERY ON THE BIDDING DOCUMENT:

Prospective bidders may submit queries, if felt necessary, requesting clarification of any bid clause. Such queries must be submitted to the office latest by the Tender clarification end date and time mentioned in the Bid Data Sheet. Purchaser shall clarify to the extent felt necessary or issue a corrigendum for any amendment required in the bidding document. Such corrigendum/clarification shall be made available in the official website of AEGCL, www.aegcl.co.in.

1.7.0 CLARIFICATION OF BIDS

1.7.1 To assist in the examination, evaluation, and comparison of the Technical and Price Bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a Bidder that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change in the substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the evaluation of the bids. If a Bidder does not provide clarifications of its bid by the date and time set in the Purchaser's request for clarification, its bid may be rejected.

1.7.2 No bidder shall contact AEGCL on any matter relating to its bid from the time of opening Bids to the time the contract is awarded.

If the bidder wishes to bring additional information to the notice of AEGCL, it should do so in writing.

1.7.3 Any effort by the bidder to influence AEGCL in AEGCL's evaluation of price proposals, bid comparison or contract award decisions may result in the rejection of the bidder's bid.

1.7.4 Verbal clarification and information given by AEGCL or its employee(s) or representative (s) shall not in any way be binding on AEGCL

1.7.0 AMENDMENT OF BIDDING DOCUMENTS

1.7.1 At any time prior to the deadline for submission of bids, the AEGCL may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issuing addenda.

1.7.2 Any addendum thus issued shall be part of the bidding documents pursuant to Sub-Clause, and shall be communicated in writing or by fax to all purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum by fax to AEGCL.

1.8.0 LANGUAGE OF BID

1.8.1 The bid, and all correspondence and documents related to the bid, exchanged between the bidder and AEGCL shall be written in the English language. Supporting documents and printed literature furnished by the bidder shall also be in English language.

1.9.0 DOCUMENTS COMPRISING THE BID

1.9.1 The bid submitted by the bidder shall comprise two envelopes submitted simultaneously, one containing only the technical proposal and the other the price proposal.

1.9.2 The Bid submitted by bidders shall contain the following:

a) Bid Submission Sheet
b) Duly signed bid document
c) Documentary evidence to establish that the Bidder meet the qualifying requirements in accordance with Clause 1.4.0.
d) Documents to be furnished as per Clause 1.4.2.
e) The Bid Guarantee (Bid Security) in accordance with Clause 1.18.0& its sub clauses of this Section.
f) All Bidding Schedules properly filled up including Price Bid Schedules.
g) All other information and documents, as required in the Technical Specification

1.10.0 BIDDING PROCEDURE

1.10.1 Two envelope bidding procedure will be adopted. Bidders are to submit two sealed envelopes simultaneously, one containing the technical & Commercial proposal, Part–I (Technical & Commercial Bid) and the other containing the price proposal Part-II (Price Bid), enclosed together in one sealed envelope. Initially, only the Part-I bids shall be opened. Part-I proposals submitted by bidders, which do not conform to the specified requirement, may be rejected as deficient bids. The Part-II (Price Bid) proposals of technically qualified bidders will be opened at a date and time, which will be informed to all the qualified bidders of Part-I.

1.11.0 DEADLINE FOR SUBMISSION OF BIDS

1.11.1 Bids must be received by AEGCL at the address specified above no later than as stated in NIT.

1.11.2 AEGCL may, at its discretion, extend the deadline for submission of bids by issuing an addendum in accordance with Clause 1.7.0, in which case all rights and obligations of AEGCL and the bidders previously subject to the original deadline will thereafter be subject to the deadlines extended.

1.12.0 LATE BIDS

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

1.13.0 WITHDRAWAL OF BIDS

1.13.1 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.

1.13.2 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in Sub-Clause 1.18.0 may result in the forfeiture of the bid security pursuant to Sub-Clause 1.19.6.

1.14.0 BID FORM AND PRICE SCHEDULES

1.14.1 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 Clause 1.13.0.

1.15.0 BID PRICES

1.15.1 Bidders shall give a breakdown of the prices in the manner and detail called for in the **Schedules of Prices**.

1.16.0 PRICE BASIS

1.16.1 Prices quoted by the Bidder shall be inclusive of all scope of work as specified in this bidding document including any related services that is implicit to carry out the worry successfully. Price will be firm and no price variation will be allowed within the completion period given in the work order. Duties and Taxes shall be adjusted, except there is variation due to changes in legislation of the Country.

1.17.0 BID VALIDITY

1.17.1 Bids shall remain valid for a period of **180 (One Eighty)** days after the date of opening of Technical Bids.

1.17.2 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 1.17.0 in all respects.

1.18.0 BID SECURITY/ EARNEST MONEY DEPOSIT

1.18.1 For participation in the The Bidder shall furnish, as part of its bid with the Technical Proposal, a bid security in the amount of **Rs. 4,600.00 (Rupees Four Thousand and Six Hundred) only**.

1.18.2 Bidding procedure, participants must compulsorily pay the Bid Security / Earnest Money Deposit in the form of DD/Fixed Deposit/bank Guarantee/Banker's Cheque in favour of **'AEGCL, Guwahati'.**

1.18.3 Any bid not complying with Sub-Clause no. 1.18.1 and Sub-Clause no.1.18.2 shall be rejected as non-responsive.

1.18.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, against written request from the unsuccessful bidders.

1.18.5 The bid security of the successful bidder will be returned when the bidder has signed the Contract Agreement and furnished the required performance security.

1.18.6 The bid security may be forfeited

(a) if the bidder withdraws its bid,

(b) if the bidder does not accept the correction of its bid price, or

(c) in the case of a successful bidder, if it fails within the specified time limit to

(i) accept the work order or LOA,

(ii) furnish the required performance security.

1.18.7 No interest shall be payable by AEGCL on the above bid guarantee.

1.19.0 ALTERNATIVE PROPOSALS BY BIDDERS

1.20.1 Bidders shall submit offers, which comply with the Bidding Documents, including the basic AEGCL's Requirements as indicated in the bidding documents. Alternatives will not be considered. The attention of bidders is drawn to the provisions of Clause 1.22.0 regarding the rejection of bids which are not substantially responsive to the requirements of the bidding documents.

1.20.0 PROCESS TO BE CONFIDENTIAL

1.20.1 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. Any effort by a bidder to influence AEGCL's processing of bids or award decisions may result in the rejection of the bidder's bid.

1.21.0 PRELIMINARY EXAMINATION OF BIDS AND DETERMINATION OF RESPONSIVENESS

1.22.1 Prior to the detailed evaluation of bids, AEGCL will examine the bids to determine whether they are complete and all documents as per Clause 1.9.0andClause 1.9.0 are provided or not, whether the documents have been properly signed, whether the required bid security is included, and whether the bids are generally in order and provides any clarifications and/or substantiation that AEGCL may require.

1.22.2 A substantially responsive bid is one which conforms to all the terms, conditions and requirements of the bidding documents deviation or reservation and includes the amendments and changes, if any. AEGCL may waive any minor non-conformity or irregularity in a Bid which does not constitute a material deviation or reservation, provided such deviation or reservation does not (i) affect in any substantial way the scope, quality or performance of the Works; (ii) limit in any substantial way, inconsistent with the bidding document, AEGCL's rights or bidder's obligations under the contract; or (iii) whose rectification would affect unfairly the competitive position of other bidder's presenting substantially responsive bids.

Bidder's Signature & Seal

1.22.3 Any bids found to be non-responsive for any reason or not meeting the minimum levels of the performance or other criteria specified in the bidding documents will be rejected by AEGCL and not included for further consideration.

1.23.0 CORRECTION OF ERRORS

1.23.1 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.

1.23.2 The amount stated in the Form of Bid for Price Proposal will be adjusted by AEGCL in accordance with the above procedure for the correction of errors and, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security may be forfeited in accordance with Sub-Clause 1.17.6(b)

1.24.0 EVALUATION AND COMPARISON OF BID PROPOSALS

1.24.1 AEGCL will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 1.22.0.

1.24.2 For equipments and materials, the comparison shall be of the ex-factory price of equipments and materials offered (such price to include all costs as well as duties and taxes paid or payable on components and raw material incorporated); plus the cost of transportation, local taxes and duties, civil works, installation and other services required under the contract with due corrections as per Clause 1.23.0. AEGCL's comparison will also include the costs if any, resulting from application of the evaluation procedures described in Sub-Clause1.24.4

1.24.3 AEGCL will carry out a detailed evaluation of the bids in order to determine whether the bidders are qualified and whether the technical aspects are substantially responsive to the requirements set forth in the bidding documents. In order to reach such a determination, AEGCL will examine the information supplied by the Bidders and other requirements in the bidding documents, taking into account the following factors:

(a) Qualification

(i) the determination will take into account the Bidder's financial and technical capabilities and past performance; it will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to Clause 1.9.0 as well as such other information as AEGCL deems necessary and appropriate; and

(ii) an affirmative determination will be a prerequisite for AEGCL to continue with the evaluation of the proposal; a negative determination will result in rejection of the Bidder's bid.

(b) Technical

(i) overall completeness and compliance with AEGCL's Requirements; the technical merits of materials and equipments offered and deviations from AEGCL's Requirements; suitability of the facilities offered in relation to the environmental and climatic conditions prevailing at the site; quality, function and operation of any process control concept included in the bid;

(c) Commercial

(i) Deviations and omissions from the contractual and commercial conditions as identified in the Bid.

(ii) compliance with the time schedule called for in the Bidding Document and evidenced as needed in a milestone schedule provided in the bid; and

(iii) the functional guarantees of the facilities offered against the specified performance criteria of the plant and equipment.

1.24.4 Pursuant to Sub-Clause 1.24.3, the following evaluation methods will be followed:

(a) **Time Schedule:**
Bidders submitting bids that deviate from the time schedule specified will be rejected.

(b) **Deviations from the Bidding Document:**
Bidders shall base their Bid price on the terms & conditions specified in the Bidding Documents.

Bids with material deviations and omissions shall be rejected.

(c) **Functional Guarantee of the facilities:**
Bidders shall state the functional guarantees (e.g. guaranteed performance or ratings or efficiency) of the proposed Goods in response to AEGCL's Requirements (Technical Specifications). Goods, Plant and equipment offered shall have a minimum performance (functional guarantees/ratings) specified in the Technical Specifications to be considered

responsive. Bids offering Goods, plant and equipment with functional guarantees less than the minimum specified shall be rejected.

1.24.5 The following methodology will be practiced for identification and treatment of the Abnormally Low Bids (ALB) in this tender process of AEGCL:

(a) Identification:

For the identification of the Abnormally Low Bids, two approaches as applicable shall be adopted:

(i) ***Absolute Approach*** when there is fewer than five substantially responsive bidders and if the bid price is 20% or more below AEGCL's cost estimate then AEGCL's tender evaluation committee should clarify the Bid price with the bidder to determine whether the Bid is abnormally low.

(ii) ***Relative Approach*** is a statical comparison method which will be applied when there are more than five nos. of substantially responsive bids. A potential ALB is identified where the low Bid is more than one standard deviation below the average of substantially responsive bids received.

In this approach first the Average bid price is determined and then by deducting the standard deviation from the average bid price, potentially ALB may be determined.

(b) In case of ALB, the tender evaluation committee of the respective tenders shall undertake the following three stage review which are as follows:

i) Identify ALB as per the step mentioned in Clause No.(a).(i) and 10.b).(ii) whichever is applicable.

ii) Clarify and analyse the bidders resource inputs and pricing, including overheads, contingencies and profit margins. In that respect committee may seek the reference of the guidelines of World Bank, AIIB, ADB etc.

iii) Decide whether to accept or reject the tender.

(c) Additional Performance Security in case of acceptance of ALB:

i) If any abnormally low bid is accepted under point no. (b) (iii), after taking of additional performance security as per the assessment of the committee, however the total performance security should not have to exceed 20% of the total W.O/LOI value.

ii) The additional performance security shall be treated as part of the original performance security and shall be valid for a period coextensive with the applicable defect liability period of the contract.

iii) Non submission of the additional performance security shall constitute sufficient ground to rejection of the bid and similar assessment shall be initiated for the next ranked bidder identified as ALB.

1.24.6 AEGCL reserves the right to accept or reject any variation or deviation. Variations, deviations, and other factors which are in excess of the requirements of the bidding documents or otherwise result in the accrual of unsolicited benefits to AEGCL shall not be taken into account in bid evaluation.

1.25.0 AWARD CRITERIA

1.25.1 Subject to Clause 1.26.0, AEGCL will award the LOI/ work order to the bidder whose bid has been determined to be substantially responsive to the bidding documents provided that such bidder has been determined to be qualified.

1.26.0 EMPLOYER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

1.26.1 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 thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for AEGCL's action. AEGCL is not bound to accept the offer of the lowest bidder.

1.27.0 NOTIFICATION OF AWARD

1.27.1 Prior to expiration of the period of bid validity prescribed by AEGCL, AEGCL will notify the successful bidder by mail, confirmed by letter, that its bid has been accepted. This letter (called the "Letter of Acceptance") shall name the sum (W.O/LOI value) which AEGCL will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as laid out in the bid.

1.27.2 The notification of award will constitute the formalization of the contract.

1.28.0 PERFORMANCE SECURITY

1.28.1 Within **15 (fifteen) days** of receipt of the notification of award from AEGCL, the successful bidder shall furnish to AEGCL a performance security in an amount of 10 (ten) percent of the W.O/LOI value in accordance with the Conditions of Contract. The

form of performance security provided in **Section 4** of the bidding documents may be used or some other form acceptable to AEGCL. The above performance security may be withdrawn on submission of performance security as per clause No 2.6.0

1.28.2 In case the bidder fails to submit the Performance Security in the form of Bank Guarantee, an amount equivalent to 10% of the W.O/LOI value shall be retained as Security Deposits which shall be retained up to 90 (ninety) days after the end of Warranty Period.

1.29.0 CORRUPT OR FRAUDULENT PRACTICES

1.29.1 It is required that bidders/suppliers/contractors observe the highest standard of ethics during the procurement and execution of the contracts. In Pursuance of this Clause AEGCL;
defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and

(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;

(a) will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(b) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract by AEGCL if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

Bidder's Signature & Seal

SECTION-2

SPECIAL CONDITIONS OF CONTRACT.

2.1.0 INTRODUCTION

2.1.1. This Special Conditions of Contract is supplementary to AEGCL's "**General Conditions of Supply and Erection of AEGCL 2009** ", copies of which will be supplied with this Bidding Document. ***However, in case of any contradiction, stipulations made in this Bidding Document, it 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 W.O/LOI values 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 within 7 (seven) days 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 W.O/LOI value except with written consent of the purchaser. 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 PERFORMANCE SECURITY (Contract Performance Guarantee)

2.5.1. As a Contract Performance Security, the successful Bidder, to whom the work is awarded, shall be required to furnish a Performance Guarantee from a Nationalized Bank, in the form attached with the Bidding Document (Section –5) in favour of the AEGCL. The guarantee amount shall be equal to ten percent (10%) of the W.O/LOI value and it shall guarantee the faithful performance of the contract in accordance with the terms and conditions specified in these documents and specifications. The guarantee shall be valid up to 90 (ninety) days after the end of Warranty Period.

2.5.2. In case the bidder fails to submit the Performance Security in the form of Bank Guarantee, an amount equivalent to 10% of the W.O/LOI value shall be retained as Security Deposits which shall be retained up to 90 (ninety) days after the end of Warranty Period

2.5.3. The performance guarantee shall cover additionally the following guarantees to the owner:

a) The successful Bidder guarantees the successful and satisfactory operation of the equipment furnished and erected under the contract, as per the specifications and documents.

b) The successful Bidder further guarantees that the equipment/material provided and installed by him shall be free from all defects in design, material and workmanship and shall upon written notice from the Owner fully remedy

2.6.4 The Contract performance Guarantee will be returned to the Contractor without any interest at the end of warranty period and written request from the contractor.

2.6.0 TAKING OVER

2.6.1. When the term of contract shall be fully complied with completing all works as per technical specifications to the satisfaction of the Department for a period as applicable, the Contractor/Firm shall have to submit Performance Certificate to the officeof the undersigned after the satisfactory completion of the work through the executing authority for finalization of the work/payment as well as for the final acceptance and taking over the completed work and to issue the necessary certificate thereof.

2.6.2. The date of issue of the 'Taking Over Certificate' by AEGCL or its representative shall be the date of taking over the works.

2.7.0 TERMS OF PAYMENT

2.7.1 No advance/Mobilization advance shall be made in this contract.

2.7.2 No claim for interest shall be entertained by AEGCL.

2.7.3 First and final bill shall be accepted for this work on completion of the entire work . Bill must contain certified photocopies of the

Site Register of up-to-date work executed and coloured photographs of work in sequence of execution duly signed with seal by the AEGCL.

2.7.4 Final payment shall be released to the contractor only after completion of the work in all respect and final acceptance by AEGCL.

2.7.5 Payment is subject to availability of specific fund.

2.7.6 The Bidder / Firm will have to be submitted the following Net Banking details.

- Banker's Name & Branch
- Account No
- Banker's address
- Banker's IFSC Code
- Banker's RTGS Code

2.8.0 WARRANTY

2.8.1. The term period of warranty shall mean the period of 12 months from the date of Taking Over of the Work by AEGCL. A Taking over Certificate (TOC) will be issued by the appropriate authority i.e. the SDE, Guwahati Transmission Sub-Division,. AEGCL..

2.9.0 LIABILITY FOR ACCIDENTS AND DAMAGE

2.9.1. The contractor shall indemnify the company (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.

2.10.0 USE OF MATERIALS ARRANGED BY THE BOARD

2.10.1. 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 Board then the contractor shall be liable to pay compensation to the Board as may be decided by the Board.

2.11.0 PENALTY FOR DELAYED EXECUTION

2.11.1. In the event of delay in completing the work extending beyond the date of completion or beyond the extended date, if any, permitted by the Board, the contractor shall pay as agreed liquidated damage and not as a penalty a sum equal to 1% of the W.O/LOI value under this contract for each week of delay or part thereof subject to a maximum of 10% of the W.O/LOI value.

2.12.0 SETTLEMENT OF THE DISPUTE & ARBITRATION

2.12.1. Any dispute arising out of the contract will first be discussed and settled bilaterally between the Assam Electricity Grid Corporation Limited 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 AEGCL, 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.

2.13.0 FORCE MAJEURE

2.13.1. 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, war, fire, flood, earthquake, delay in execution of work thereof by AEGCL, would entitle contractor to extension of time.

2.14.0 PERT/BAR CHART

2.14.1 The bidder will have to make out a detailed PERT Chart covering all activities along with detailed program chart on accepted scheme indicating various stages of execution, method of execution and completion of work in different stages keeping the period of completion in view and submit the same along with the bid documents.

2.15.0 PROGRESS REPORT

2.15.1. The contractor shall submit to AEGCL weekly/ fortnightly progress report within the last day of the week of the fortnight giving the status of the contract work along with adequate number of photograph, indicating the various stages of execution of this contract.

2.16.0 SITE FACILITIES&ACCOMMODATION OF CONTRACTOR'S PERSONNEL

2.17.1 AEGCL will not provide any accommodation at the work site to the contractor and their field personnel. The same has to be arranged by the contractor on their own. However, AEGCL may provide space for storage of the materials but responsibility of the material and their safety shall be taken care of by the Contractor. In case of none availability of space under AEGCL the same should be arranged by the contractor outside AEGCL campus/work site at their own cost and responsibility.

2.17.2 AEGCL shall not be responsible for the safety of the workers at site either on account of the works executed by the Contractor or on account of the works executed by any other agency involved at that time.

2.17.3 AEGCL shall on no account be responsible for the expenses incurred by the Contractor during the progress of work at site,

towards any incidental expenditure like medical amenities to the workers at site, security arrangements.

2.17.4 The quoted price shall be deemed to include charges for all site facilities for labour that are considered necessary for execution of the work. Subject to availability of land, AEGCL may provide free site for labour camp,construction of yard etc. close to site of work.

2.17.5 No assurance can be given regarding the availability of AEGCL"s land given for use to the Bidder to natural calamities. AEGCL undertakes no responsibility or liability in this regard.

2.17.6 The bidder shall make his own arrangement for arranging power supply as may be required for work. AEGCL may, however assist in recommending his/their application to the Electricity Supply Utility for the power supply on payment basis as per norms of the Electricity Supply Utility.

2.17.7 No claim shall be entertained from the bidder for making his own arrangement for approach roads from outside PWD road to the site and bidder will bear entire expenses.

2.17.8 AEGCL on no account shall be responsible for storage of materials or loss or pilferage or theft either in respect of the material stored or material already billed and paid for by the AEGCL.

2.17.9 Any facilities available at site shall be utilized only with prior permission of AEGCL and it should not be taken as granted for availing such services.

2.17.0 DEFECT AFTER COMLETION OF WORK:-

2.18.1 The contractor shall make good at his own cost and to the satisfaction of AEGCL all defects, or other faults which may appear during the defect liability period / warranty period.

2.18.2 In default, AEGCL may employ and pay other agency or persons to amend and make good such damages. Losses and expenses consequent thereon or incidental thereto shall be made good and borne by the contractor, failing which the same shall be recoverable from the payment due to the contractor and performance guarantee. In the event of amount due and performance guarantee being insufficient, the balance amount will be recovered from the contractor from the amount due or retained for other works executed in AEGCL.

2.18.0 VARIATION AND DEVIATION OF QUANTITY

The Tendered rates shall hold good for any variations in the Tendered quantities for completion of work on account of any modification in the bill of quantities or design or specification.

2.19.0 DELETION OF WORK:

AEGCL and its representative have the right to delete or decrease any item or quantity from schedule of quantity at its discretion if deemed necessary. No claim by the contractor will be admissible for this deletion or deduction of Item/quantity from schedule of quantity

2.20.0 LABOUR LEGISLATION

2.21.1 The contractor shall comply with the provisions of the Apprentices Act 1961, payment of Wages Act 1936, Minimum Wages Act 1948, Employees Liability Act 1938, Workmen's Compensation Act 1923, Industrial Disputes Act 1947, Maternity Benefits Act 1961, and the Contract Labour (Regulation and Abolition) Act 1970, Provident Fund Act or the modifications there of or any other laws relating there to and the rules made there under from time to time.

2.21.2 The contractor shall indemnify and keep indemnified AEGCL against payments to be made under and for the observance of the laws aforesaid and the Contractors' Labour Regulations without prejudice to his right to claim. The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

2.21.3 The contractor shall not employ persons below the age of 18 years as labours for the erection work.

2.21.4 The contractor shall at his own expense arrange for all the safety provisions for the safety of all workers and employees directly or indirectly employed on the work by the contractor. The contractor shall provide adequate safety devices like head protective gears, belt etc, to his labours while executing the erection work.

2.21.5 The contractor shall be fully responsible at his own expenses for compliance all the labour regulations and rules to be observed by them. The contractor shall fully indemnify AEGCL against any action by the state and/or Central Government for any default or alleged default by the contractor for violation of any of such rules and regulations. If, due to any default of the contractor, AEGCL has to incur any expenditure for compliance of contractor the rules and regulations or for any other reason connected with such default, AEGCL shall be entitled to recover from the Bidder all such expenditure in full from any payment due to the contractor.

2.21.0 GOVERNMENT AND LOCAL RULES

2.22.1 The Contractor shall conform to the provisions of all local bye-laws and acts relating to the work and to the regulations etc. of the Government and Local Authorities and of any Company whose system and design is proposed to be connected/utilized. The cost, if any, shall be deemed to have been included in his quoted rates, taking into account all liabilities and shall indemnify AEGCL against such liabilities and shall defend all actions arising from.

2.22.0 ELIGIBILITY OF CONTRACTORS EMPLOYEES

2.23.1 The Contractor shall employ in and about the Execution of the works only such persons as are skilled and experienced in their several trades. A list of such personal should be submitted in corresponding Appendix.

2.23.0 ENGINEER AT LIBERTY TO OBJECT

2.24.1 AEGCL's Site in-charge shall have right to remove any person provided by the Contractor who, in the opinion of the Site in-charge, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose presence on Site is otherwise considered by the Engineer to be undesirable, and such person shall not be again allowed upon the Works without consent of the Engineer. Any person so removed from the Works shall be replaced immediately without hampering the work

2.24.0 INSURANCE

2.24.1. The Contractor shall arrange for any pay/cost of personnel accident insurance, medical treatment etc. in respect of their employees assigned to the works for all time and shall govern by Law of the land.

2.25.0 DAMAGE TO PERSON AND PROPERTY

2.26.1 The Contractor shall be responsible for all injury to the work or to workmen, to persons, animals or things and for all damages to the structural and/or decorative part of property which may arise from the operations or neglect of contractor or its employees, against whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this Contract. The Contractor shall at his cost effect the insurance necessary and indemnify AEGCL entirely from all responsibility in this respect. The scope of insurance is to include loss or damage to the work and workmen due to carelessness, accident including fire, earthquake, floods, all medical expenses, compensation to be borne in the event of accident etc., damage or loss to the Contract itself till this is made over a complete state. Insurance is compulsory and must be affected from the very initial stage and should cover the entire contract period till handing over of complete works. The Contractor shall also be responsible for anything which may be excluded from damage to any property arising out of incidents, negligence or defective carrying out of this Contract.

2.26.2 AEGCL shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs, charges and expenses arising or occurring from or in respect of any such claim or damages from any sums due or to become due to the Contractor.

2.26.0 STATUTORY AND SAFETY REQUIREMENT

2.27.1 Each and every safety measures for MAN and MACHINE will be the sole responsibility of the Contractor without any prejudice. Compensation claim if any will also be the responsibility of the contractor without any prejudice.

2.27.2 During the execution of the work, the contractor shall have to mark the site with banner warning/ indicating precautions.

2.27.3 The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

a) Have full regard for the safety of all persons entitled to be upon the Site and keep the Site (So far as the same is under his control) and the Works in an orderly state appropriate to the avoidance of danger to such persons, and

b) Provided and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer or by any duly constituted authority for the protection of the Works or for the safety and convenience of the public or others, and Take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods

2.27.0 CONTRACTUAL FAILURE, LIQUIDATED DAMAGE AND PENALTY

2.28.1 Liquidity Damages 1.0% (one percent) of the amount of delayed work per week subjected to the maximum 10 % of the W.O/LOI value

2.29.0 QUANTITY VARIATION

2.29.1. **"**Purchaser" shall have the right to increase/decrease the ordered quantity by 15% within 30 days of the period of completion and the same shall be carried out at the same rates /prices and terms and conditions stipulated in the contract except in regard to completion schedule, which shall be mutually agreed upon in case of enhancement of the ordered quantity.

2.30.0 INSPECTION AND TESTING

2.30.1. The Contractor shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Sections 3, Purchaser's Requirements.

2.30.2. The inspections and tests shall generally be conducted on the premises of the Contractor/Manufacturer.

2.30.3. The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

2.30.4. Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give a reasonable advance notice (not less than 21 days) of such test and/or inspection and of the place and time thereof to the Purchaser. The Contractor shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

2.30.5. The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Contractor shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice.

2.30.6. The Contractor agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report shall release the Contractor from any warranties or other obligations under the Contract.

2.31.0 TERMINATION OF CONTRACT

2.31.1 If the performance of the contract is not satisfactory and not corrected within 15 days of receiving notice, then employer shall be at liberty to terminate the contract and get the work executed through other means at the risk and cost of the Contractor.

2.32.0 PAYMENT ON TERMINATION

2.32.1 If the performance of the contract is not satisfactory and not corrected within 15 days of receiving notice, then employer shall be at liberty to terminate the contract and get the work executed through other means at the risk and cost of the Contractor.

2.33.0 FORCE MAJEURE CONDITION

2.33.1 Force Majeure condition shall be considered as any circumstances beyond 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 could entitle contractor to extension time. Any such delay should be intimated within 10 (ten) days from the beginning of such delay to consider/approved, any claim without prior information may not be considered under force Majeure.

2.34.0 SETTLEMENT OF DISPUTE AND ARBITRATION

2.34.1 Any dispute arising out of the contract will be first settled bilaterally between AEGCL and Contractor. In case, dispute cannot be settled bilaterally, it will be referred to arbitration. The contractor shall not stop the work during settlement of any dispute. All disputes shall be subjected to the jurisdiction of District Court of respective District of work.

2.35.0 POLLUTION AND ENVIRONMENT

2.35.1 Each and every measure should be taken to adhere to the standard norms to avert any occasion of Air Pollution, Water Pollution, Soil Pollution and Sound Pollution. In case of any deviation leading to any legal action the Contractor will be solely responsible without any prejudice.

Bidder's Signature & Seal

SECTION –3

PURCHASER'S REQUIREMENTS

3.1.0 SCOPE

3.1.0 The brief description of scope of work covered under this Bidding Document is furnished in Bid Clause no. 1.2.0 is under the scope of the bidder.

3.1.2 GENERAL

a) 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.

b) 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.

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

d) The Bidder should note that the fabrication of tower materials and construction of tower foundations shall be carried out as per existing design of the line. The drawings related to the line shall be handed over to only the successful Bidder.

3.2.0 TECHNICAL SPECIFICATION

3.2.1. MATERIALS

Materials for steel structure including bolts, anchor bolts, washers etc shall be of tested quality and shall conform to IS: 226 and IS: 2062 (for plates over 20mm thick) Dimensions of all bolts and nuts shall conform to IS 6639 and their mechanical properties shall conform to property class 4.6 and class 4 of IS: 1367 for bolts and nuts respectively. Dimensions and mechanical properties of all washers shall conform to IS: 6610 and IS: 3063 respectively. Other materials used in the construction of steel structure shall conform to appropriate IS specification for the materials wherever they exist. All members of the steel structures, bolts, nuts and washers shall be galvanized.

3.2.2. FABRICATION

The workmanship shall conform to the best practice in modern structural shops and to the provisions of IS: 802 (Part-II) and IS: 800 as applicable.

3.2.3. CONNECTIONS

All connections shall be designed for the full strength and properties of the members. The fabrication, in general shall be bolted type. Bolts shall also be used for field connections unless otherwise specified in the drawings or permitted by the site engineer for any special circumstances. Bolting shall be conforming to IS: 802 (Part-I & II) and IS: 800 as applicable.

Welding where required shall be generally done in accordance with the relevant IS standards. Selection of electrodes shall conform to IS: 815. MS electrodes for welding shall conform to IS 814. Welding procedure shall conform to IS: 816 and IS 823.

3.2.6. TOLERANCES.

Fabrications tolerances shall conform to IS: 802 (Part-II) and IS: 800 as applicable.

3.2.7. MARKING

The marking procedure shall conform to IS: 802 and IS: 800 as applicable.

3.2.8. SHOP ASSEMBLY

All steelworks (one in each type) shall be temporarily shop assembled complete or as directed by the site engineer before commencing mass fabrication to ensure proper field erections. Reaming of untrue holes will not be allowed. A reasonable amount of drifting will be allowed in assembling. Shop assembled parts shall be dismantled for shipment.

3.2.9. GALVANIZING

Bolts and other fasteners shall be galvanized in accordance with IS: 5358. Galvanizing members of structures shall conform to IS: 4759 and spring washers shall be galvanized in accordance IS; 1573.

The recommendation given in IS: 2629 and IS: 6159 shall be complied with in respect of surface preparations, safety and applications of coating.

3.2.10 FIELD ERECTION

Erection work shall be done strictly according to the provisions of IS: 802

After completion of the works, final checking shall be done by the contractor to ensure that all the foundation work

andfabrication/replacement/repairing of missing tower members have been done strictly according to the specifications and as approved by the Employer. All the works shall be thoroughly inspected keeping in view the following main points:

1. All the tower members are correctly used strictly according to AEGCL's requirements and are free of any defect or damage whatsoever.
2. All the bolts are fully tightened and they are properly punched.

The contractor shall submit a report to the above effect. After final checking, any defect found shall be rectified by the contractor.

3.3.0 GENERAL SPECIFICATIONS OF CIVIL FOUNDATION WORK.

3.3.1 SETTING OF LAYOUT:-

Layout and levels of structures etc. shall be made by the Contractor, at his own cost, from the general grid of the plot and the bench marks given by the Owner. The Contractor shall make his own arrangements, at his own cost, for locating the co - ordinates and position of wells as per approved drawings and for determining the Reduced Level (R.L.) of the locations with respect to the single bench mark indicated by the Owner. Two established reference lines in mutually perpendicular direction shall be indicated to the Contractor. The Contractor shall provide at site all the required survey instruments, materials and mento Owner for verification of the detailed layout and correctness of the layout and levels to the satisfaction of the Owner so that the work can be carried out accurately according to specifications and drawings. The contractor shall be solely responsible for the correctness of layout and levels.

3.4.3 SITE PREPARATION

3.4.3.1 This section of the specification covers site preparation of the Areas as indicated in the drawings.

3.4.3.2 The scope of works under this contract consist of providing of all labours, materials, scaffolding equipment and plants and transportation of all incidental items not shown or specified but reasonably implied or necessary for the proper completion of work. The scope of work covered by this specification is primarily complete civil works.

3.4.3.3 All works required for site preparation will have to be carried out contractor at his own expense, whenever directed by the Site In-charge.

3.4.3.4 The Contractor shall clear the site of unnecessary vegetation to prepare for work only as per directions given by the Site In-charge.

3.4.3.5 Any unnecessary structures are to be demolished and serviceable materials be stacked and stored as directed by AEGCL.

3.4.3.6 Any waste or unwanted material has to be disposed by the contractor as ordered by AEGCL. No materials will be allowed to leave the site with permission of the Site In-charge.

3.4.3.7 The Contractor will have to construct roads or any means for transportation as instructed by the Site in-charge if the site is not easily accessible.

3.4.3.8 All water which may accumulate on the site before or during the progress of the works or in trenches and excavations shall be removed and drained from the site to the satisfaction of the Site In-charge by the Contractor.

3.4.3.9 Any other work required for adequate preparation of the site shall be out by the Contractor.

3.5.4 REFERENCE POINTS AND BENCH MARKS

3.5.4.1 Permanent reference pillars have been established and under no circumstances shall the Contractor remove or disturb any permanent mark without the approval of the Owner. The Contractor shall carefully maintain and protect all bench marks and reference points and shall layout all his work by accurate reference thereto. The Contractor shall remove all vegetation, excluding trees, from the site areas as directed by the Owner.

3.5.4.2 The area shall be stripped to remove roots of grass, rubbish and slush, shrubs or other organic materials. Spoiled materials shall be burnt or removed to approved disposal areas on or near the job site as directed by the Owner.

3.5.5 PROPERTIES OF CONSTRUCTION MATERIALS

3.5.5.1 This clause specifies the properties of common building materials unless otherwise mentioned in the drawings or schedule of items. All materials viz., cement, steel, aggregates, water etc. which are to be used for well construction are detailed below. However, aggregates more than 20mm shall not be used, except for lean concrete.

3.5.6 COARSE AGGREGATES/ STONE

3.5.6.1 All coarse aggregates shall be as per IS:383 consisting of hard, strong, compact grained and durable pieces of crushed stone having uniform in texture and colour and free from decay, flaws, veins, cracks and sand holes. Coarse aggregates should be of angular shape & rectangular surface and shall be free from organic or clay coatings and other impurities like disintegrated stones, soft flaky particles, adherent coatings, clinkers, slag, mica and any other materials liable to affect the strength, durability or

appearance of concrete. The surface of a freshly broken stone shall be bright, clean, and free from any dull, chalky or earthy appearance. Coarse aggregates with round surface shall not be used. A coarse aggregates shall not absorb more than 5% of its weight of water after 24 hours immersion. Samples shall be submitted by the Contractor and approved samples shall be retained by the Owner for comparison of bulk supply.

3.5.6.2 Sieving and washing of aggregates by approved method shall be carried out wherever required.

3.5.6.3 Grading of coarse aggregate shall generally conform to IS:383 and shall be such as to produce a dense concrete of the specified proportions and strength and of consistency that will work readily into position without segregation.

3.5.6.4 The maximum size of aggregate shall be as follows unless specified otherwise:

a) Reinforced concrete with very narrow space - 10mm.

b) Reinforced concrete & Plain Concrete - 20mm.

c) Lean Concrete M15 -40mm.

3.5.7 CEMENT

3.5.7.1 Cement used shall generally be ordinary Portland Cement conforming to the latest Indian Standard Code IS:8112 or I S:12269. Alternatively, other varieties of cement other than ordinary Portland Cement such as Portland Pozzolana Cement conforming to IS;1529 or Portland Slag Cement conforming to IS:455 can also be used. The contractor shall submit the manufacturer's certificate, for each consignment of cement procured, to the Owner. However, Owner reserves the right to direct the Contractor to conduct tests for each batch/lot of cement used by the Contractor and Contractor will conduct those tests free of cost at the laboratory so directed by the Owner. The Contractor shall also have no claim towards suspension of work due to time taken in conducting tests in the laboratory.

3.5.7.2 Changing of brand or type of cement within the same structure shall not be permitted without the prior approval of the Owner. Sulphate Resistant Cement shall be used if Sulphate content is more than the limits specified in IS:456, as per Geotechnical investigation report and as mentioned in the construction drawing. No additional payment shall be made for using Sulphate Resistant Cement.

3.5.8 SAND

3.5.8.1 Sand shall be hard, durable, clean and free from any adherent coatings or organic matter and shall not contain clay balls or pellets. The sand shall be free from impurities such as iron pyrites, alkalis, salts, coal, mica, shale or other laminated materials, in such forms or quantities as to affect adversely the hardening, strength, durability or appearance of concrete or to cause corrosions to any metal in contact with such concrete. In no case the cumulative percentage of impurities in sand shall be more than 5% by weight. All sand shall be properly graded. Unless otherwise directed by the Owner all sand shall pass through IS Sieve no. 2.36mm. Sand for concrete shall conform to IS:383 .

3.5.8.2 All coarse aggregates & sand shall be stored on brick soling or an equivalent platform so that they do not come in contact with dirt, clay, grass or any other injurious substance at any stage.

Aggregate of different sizes shall be kept in separate and easily measurable stacks. If so desired by the Owner, aggregates from different sources shall be stacked separately with proper care to prevent intermixing.

3.5.9 WATER

3.5.9.1 No source of water is available near the tower locations. As such shallow temporary ring well is to be constructed for construction purpose.

3.5.9.2 Water shall be clean, fresh and free from organic matters, acids or soluble salts and other deleterious substances which may cause corrosion, discoloration, efflorescence etc. Potable water is generally considered fit for use. Water to be used shall comply with the requirements of IS:456. Average 28 days compressive strength of at least three 15 cm. cubes of concrete prepared with proposed water shall not be less than 90% of average strength of three similar cubes prepared with distilled water. PH of water shall generally be not less than 6.

3.5.10 STORAGE & HANDLING OF CONSTRUCTION MATERIALS

3.5.10.1 All materials shall be stored by the Contractor in a manner aiding convenient access for identification and inspection at all times. The storage arrangements shall be subject to the approval of the Owner. Storage of materials shall be as described in IS:4082 .

3.5.10.2 All materials shall be so stored as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality and fitness for the work. Any material which has deteriorated or has been damaged or is otherwise considered defective by the Owner shall not be used for concrete, and shall be removed from site immediately, failing which, the Owner will get the

materials removed and the cost thereof shall be recovered from W.O/LOI value. The Contractor shall maintain up to date accounts of receipt, issue and balance (stock wise) of all materials.

3.5.10.3 Cement

The cement shall be stored in dry enclosed shed, well away from the walls and insulated from the floor to avoid contact with moisture. The cement shall be stacked in easily countable stacks to facilitate removal of first in first out basis. The cement bags shall be gently kept on the floor to avoid leakage of cement from the bags. Sub-standard or partially set cement shall be immediately removed from the site as soon as it is detected. Cement stored for period beyond 90 days shall be tested before use.

3.5.10.4 Reinforcement

Reinforcement steel shall be stored consignment wise and size wise, off the ground and under cover. It shall be protected from rusting, oil grease and distortions. If directed by the Owner, the reinforcement steel may have to be coated with cement wash before stacking, to prevent scale and rust at no extra cost to the Owner. The stacks shall be easily measurable. Only steel needed for immediate use shall be removed from storage. Fabricated reinforcement shall be carefully stored to prevent damage, distortion, corrosion & deterioration.

3.5.10.5 Cement concrete

This section of the specification deals with cement concrete, plain or reinforced, and covers the requirement for concrete mix design, strength and quality, pouring at all levels, forming, protection, curing finishing, admixtures, inserts and other miscellaneous works.

The provisions of IS:456 shall be complied with, unless permitted otherwise. Any other Indian Standard Code shall form the part of the specification to the extent it has been referred to or applicable within this specification.

The Contractor shall furnish all labour, material and equipment to form, place and finish all structural concrete, concrete works and miscellaneous items complete, as described herein.

3.5.11 ADMIXTURES

3.5.11.1 The admixtures in concrete for promoting workability, improving strength or for any other purpose, shall be used only after the written permission from the Owner. The Admixtures shall conform to IS:9103.

3.5.11.2 Admixtures should not impair durability of concrete nor combined with the constituent to form harmful compounds nor increase the risk of corrosion of reinforcement.

3.5.11.3 Addition of admixtures should not reduce the specified strength of concrete in any case. The workability, compressive strength and the slump loss of concrete with and without the use of admixtures shall be established during the trial mixes before use of admixtures.

3.5.11.4 The chloride content of admixtures shall be independently tested for each batch before acceptance.

3.5.11.5 If two or more admixtures are used simultaneously in the same concrete mix, data shall be provided to assess their interaction and to ensure their compatibility.

3.5.11.6 In case admixtures are used in the concrete for any structure, fresh mix design be done considering the admixture with the specific approval from Owner. No extra payment shall be made to the Contractor on this account.

3.5.12 GRADES OF CONCRETE

3.5.12.1 The minimum grade of concrete to be used for piling shall be M-20 with minimum cement content 400 kg/m3 and maximum water cement ratio of 0.5. Concrete shall conform to the controlled design mix as specified in IS:456 . In addition, nominal mixes of 1:2:4 (with aggregates of nominal size 40mm maximum, by weight converted to equivalent volume shall also be used as per field quality plan. The concrete in aggressive surroundings due to presence of sulphate, etc., shall conform to IS:456. The slump of concrete shall be maintained between 150 to 200 mm.

3.5.12.2 The Contractor shall carry out concrete mix design in accordance with IS:10262 and submit mix design calculations and get them approved from the Owner well in advance of installation of well foundations. The Contractor shall carry out adequate number of tests in accordance withIS:456 to ensure concrete of the minimum specified strength at requisite workability(i.e.slump).

3.5.13 WORKMANSHIP

3.5.13.1 All workmanship shall be according to the current Industry standard and best practices.

Before starting a pour the Contractor shall obtain the approval of the Owner in a “Pour Card” maintained for this purpose. He shall obtain complete instructions about the material and proportions to be used, Slump / workability, Quantity of water per unit weight of cement, number of test cubes to be taken, type of finishing to be done, any admixture to be added, any limitation on size of pour and stopping of concrete in case of premature stopping of pours.

3.5.14 MIXING OF CONCRETE

3.5.14.1 All design mix concrete shall be mixed in mechanically operated mixer of an approved size and type capable of ensuring a uniform distribution on the materials through the mass. However, contractor can also use central batching plant situated within the area allocated for the Contractor's particular use.

3.5.14.2 The proportions of sand, coarse aggregate, cement and water shall be as determined by the mix design. However, in case of nominal mix concrete (for lean concrete only) the proportions of sand, coarse aggregate, cement and water shall be fixed. The proportions, as determined for design mix concrete and shall always be approved by the Owner. The quantities of the cement, sand and coarse aggregates shall be determined by weight.

However, for a faster progress at site, quantities of the cement, sand and coarse aggregates can be converted to equivalent volume. The water shall be measured accurately after giving proper allowance for surface water present in the aggregate for which regular check shall be made by the Contractor.

3.5.14.3 The water shall not be added to the mix until all the cement and aggregates consisting the batch are already in the drum and dry mixed for at least one minute. Mixing of each batch shall be continued until there is a uniformity in colour and consistency but in no case shall mixing be done for less than two (2) minutes and at least forty (40) revolutions after all the materials and water are in the drum. When absorbent aggregates are used or when the mix is very dry, the mixing time shall be extended as may be directed by the Owner. Mixers shall not be loaded above their rated capacity as it prevents thorough mixing. If there is segregation after unloading from the mixer the concrete should be remixed.

3.5.14.4 The entire contents of the drum shall be discharged before the ingredients for the next batch are fed into the drum. No partly set or remixed or excessively wet concrete shall be used and it shall be immediately removed from site. Each time the work stops, the mixer shall be thoroughly cleaned and when the next mixing commences, the first batch shall have 10% additional cement at no extra cost to theOwner to allow for loss in the drum.

3.5.15 CONVEYING CONCRETE

3.5.15.1 Concrete shall be handled and conveyed from the place of mixing to the place of final laying as rapidly as practicable, by approved means, before the initial setting of the cement starts. Concrete should be conveyed in such a way as will prevent segregation of Concrete which may occur during transportation of concrete. In case of any such segregation during transport, the concrete shall be re-mixed. During very hot or cold weather, if directed by the Owner, concrete shall be transported in deep containers, having mortar leak proof, which will reduce the rate of water loss by evaporation and loss of heat. Conveying equipment for concrete shall be well maintained and thoroughly cleaned before commencement of concrete mixing. Such equipment shall be kept free from set concrete.

3.5.16 PLACING OF CONCRETE

3.5.16.1 Formwork and placement of reinforcement shall be approved in writing by the Owner before concrete is placed. The forms shall be well wetted and oil shavings, dirt and water that may have collected at the bottom shall be removed before concrete is placed. Concrete shall be deposited in its final position without segregation, re-handling or flowing. The interval between adding the water to the dry materials in the mixer and the completion of the final placing inclusive of compaction of the concrete shall be well within the initial setting time for the particular cement in use or as directed by the Owner. As far as possible, concrete shall be placed in the formwork by means approved by the Owner and shall not be dropped from a height or handled in a manner which may cause segregation. Any drop over 1800 mm shall have to be approved by the Owner. Once the concrete is deposited in its final position, it shall not be disturbed. Care should be taken to avoid displacement of reinforcement or movement of formwork.

3.5.16.2 The placing of concrete shall be a continuous operation with no interruption in excess of 30 minutes between the placing of continuous portions of concrete.

3.5.16.3 After the concrete has been placed it shall be spread and thoroughly compacted by approved mechanical vibration to a maximum subsidence without segregation and thoroughly worked around reinforcement or other embedded fixtures into the correct form and shape. Vibrators shall not be used for pushing and shovelling concrete into adjoining areas. Vibrators must be operated by experienced men and over-vibration shall not be permitted. Head tamping in some case may be allowed subject to the approval of the Owner. Care must be taken to ensure that the inserts, fixtures, reinforcement and form work are not displaced or disturbed during placing of concrete. No concrete shall be placed in open while it rains. If there has been any sign of washing of cement and sand, the concrete shall be entirely removed immediately. Suitable precautions shall be taken in advance to guard against rains before leaving the fresh concrete unattended.

3.5.16.4 No accumulation of water shall be permitted on or around freshly laid concrete. Tie beams, well caps, footings shall be poured in one operation normally, in special circumstances with the approval of the Owner these can be poured in horizontal layers not exceeding 500 mm in depth. When poured in layers, it must be ensured that the under layer, is not already hardened. Blending of under layer if any, shall be effectively removed.

3.5.16.5 Wherever vibration has to be applied externally the design of formwork and the disposition of vibrators shall receive special consideration to ensure efficient compaction and to avoid surface blemishes.

3.5.17 INSERTS

3.5.17.1 All anchors, anchor bolts, inserts, etc. and any other items those are required to be embedded in the concrete shall be placed in correct position before pouring. Extra care shall be taken during pouring operation to maintain their position as indicated in the drawings. These inserts shall be welded to the nearest reinforcement to keep them in position and all such welding shall be deemed to be included in the unit rate quotedand no extra payment shall be made on this account.

3.5.18 FINISHES OF CONCRETE

3.5.18.1 All concrete surfacs shall have even and clean finish, free from honeycombs, air bubbles, fins or other blemishes. The formwork joints marks for concrete work exposed to view shall be rubbed with carborandum stone and defects patched up with a paste of1 part sand and 1 part cement and cured. The finish shall be made to the satisfaction of the Owner.

The unit rate of concrete work shall be inclusive of the cost of cleaning and finishing exposed surface as mentioned above.

3.5.19 GENERAL REQUIREMENTS

3.5.19.1 Reinforcement steel of same type & grade shall be used for structural reinforcement work as detailed in the drawing released by the Owner.No work shall be commenced without proper verification with the bar bending schedule provided in the drawing

3.5.19.2 Contractor shall supply, fabricate and place reinforcement to shapes and dimensions as indicated on the drawings and as per specifications. The reinforcement shall be either plain or deformed steel bars or welded wire fabric conforming to relevant IS specifications.

3.5.19.3 Any adjustment in reinforcement to suit field conditions and construction joints other than shown on drawings shall be subjected tothe approval of Owner.

3.5.20 PLACING IN POSITION

3.5.20.1 All reinforcement shall be accurately fixed and maintained in position as shown on the drawings by approved means as mild steel chairs, and/or concrete spacer blocks. Bars intended to be in contact, at crossing points, shall be securely bond together at all such points by two numberNo.20G annealed soft-iron wire. Binders shall tightly embrace the bars with which they are intended to be in contact and shall be securely held. The vertical distance between successive layers of bars shall be maintained by provision of mild steel spacer bars. They should be so spaced that the main bars do not sag perceptibly between adjacent spacers.

3.5.20.2 The placing of reinforcements shall be completed well in advance of concrete pouring. Immediately before pouring, the reinforcement shall be checked by the Owner for accuracy of placement and cleanliness and necessary correction as directed by him shall be carried out. The cover for concrete over the reinforcements shall be as shown on the approved drawings unless otherwise directed by the Owner. Care should be taken to ensure that projecting ends of ties and other embedded metal do not encroach into the concrete cover. Where concrete blocks are used for ensuring the cover and positioning reinforcement, they shall be made of mortar 1:2 (one part cement: two parts sand) by volume and cured for at least (7) days. The sizes and locations of the concrete blocks shall be approved by the Owner.

3.5.20.3 Longitudinal reinforcement in well shall be high yield strength cold twisted deformed steel bars conforming to IS:1786. Thermo mechanically Treated (TMT) bars (equivalent grade) in place of Cold twisted deformed steel bars are also accepted. Lateral reinforcement in well shall be of tor steel conforming to IS:432 Part-I.

3.5.20.4 The longitudinal reinforcement shall project 52 times its diameter above cut-off level unless otherwise indicated in the drawing.

3.5.20.5 The minimum diameter of the links or spirals bar shall be 8mm and the spacing of the links or spiral shall not be less than 150mm and in no case more than 250mm. The laterals shall be tied to the longitudinal reinforcement to maintain its shape and spacing.

3.5.20.6 Reinforcement cage shall be sufficiently rigid to withstand handling and installation without any deformation and damage. As far as possible number of joints (laps) in longitudinal reinforcement shall be minimum. In case the reinforcement cage is made up of more than one segment, these shall preferably be assembled before lowering into casing tube/pile bore by providing necessary laps as per IS:456.

3.5.20.7 The minimum clear distance between the two adjacent main reinforcement bars shall normally be 100mm for the full depth of cage, unless otherwise specified.

3.5.20.8 The laps in the reinforcement shall be such that the full strength of the bar is effective across the joint and the reinforcement cage is of sound construction. Laps and anchorage lengths of reinforcing bars shall be in accordance with IS:456, unless otherwise specified. If the bars in a lapare not of the same diameter, the smaller will guide the lap length.

3.5.20.9 Laps shall be staggered as far as practicable and as directed by the Owner. Not more than 33% bars shall be lapped at a particular section. Lap joints shall be staggered by at least 1.3 times the lapped length

(Center to Center).

3.5.20.10 Proper cover and central placement of the reinforcement cage in the pile bore shall be ensured by use of suitable concrete spacers or rollers, as required, without any additional cost to the Owner.

3.5.20.11 Minimum clear cover to the reinforcement shall be 75mmunless otherwise mentioned.

3.5.20.12 Unless otherwise specified by the Owner reinforcement shall be placed within the following tolerance as specified in IS:456:2000.

a) For effective depth 200mm or less +10mm.

b) For effective depth more than 200mm +15mm.

3.5.20.13 The cover shall in no case be reduced by more than one-third of specified cover or 5mm whichever is less. Welding of reinforcement bars shall be avoided. However, welding may be done in specific case subject to prior permission from the Owner.

3.5.21 CONTROL OF POSITION AND ALIGNMENT

3.5.21.1 Well shall be installed vertically as accurately as possible as per the Construction drawing.

Any extra claim whatsoever from the contractor on this account shall not be entertained.

3.5.22 EXCAVATION

3.5.22.1 The Contractor shall control the grading in the vicinity of all excavation so that the surface of the ground will be properly slopped or diked to prevent surface water from running into the excavated areas during construction.

3.5.22.2 Excavation shall include the removal of all materials required to execute the work properly and shall be made with sufficient clearance to permit the placing, inspection and setting of forms and completion of all works for which the excavation was done.

3.5.22.3 Side and bottoms of excavation shall be cut sharp and true, undercutting shall not be permitted. Each side of excavation shall be used in lieu of formwork for placement of concrete unless authorised, in special cases, by the Owner, where limitation of space for larger excavation necessitate such decision.

3.5.22.4 When machines are used for excavation, the last 300mm before reaching the required level shall be excavated by hand or by such equipment that will leave the soil at the required final level, in its natural conditions.

3.5.22.5 Suitability for bearing of the bottoms of excavations shall be determined by the Owner.

The bottom of excavation shall be trimmed to the required level and when carried below such levels, by error, shall be brought to level by filling with lean concrete 1:4:8 mix, with aggregate of 40mm maximum nominal size at no additional cost to the Owner.

The Contractor shall be responsible for assumptions and conclusions regarding the nature of materials to be excavated and the difficulty of making and maintaining the required excavations and performing the work required as shown on the drawing and in accordance with these specifications. The Contractor shall be responsible for any damage to any part of the work and property caused by collapse of sides of excavations. Materials may be salvaged, if it can be done with safety for the work and structure, as approved by the Owner.

However, no extra claim shall be entertained for materials not salvaged or any other damage to Contractor's property as a result of the collapse. He shall not be entitled to any claim for redoing the excavation as a result of the same. Excavations for foundations specified shall be carried out at least 75mm or as specified in relevant drawings below the bottom of structural concrete and then be brought to the required level by placing lean concrete of 1:4:8 mix or as specified in drawings with aggregate of 40mm maximum nominal size.

When excavation requires coffer dams, sheet piling, bracing, sheeting, shoring, draining, dewatering etc. the Contractor shall have to provide the same as required and the cost there of shall be included in the unit rate quoted for the item of excavation and contractor shall submit necessary drawings showing arrangement and details of proposed installation and shall not proceed until he has received approval from the Owner.

The Contractor shall have to constantly pump out the water collected in pits due to rain water, springs, seepage etc. and maintain dry working conditions at no extra cost to the Owner.

For the purpose of excavation in earthwork, all types of soil including kankar, morum, shingle and boulders up to 150mm size are included andno separate payment shall be made for different type of soils encountered.

3.5.23 BACK FILLING

3.5.23.1 When the work is to be interrupted, the concrete shall be rebated at the joint to such shape and size as may be required by the Owner or as shown on the drawings. All vertical construction joints shall be made with stone boards, which are rigidly fixed and slotted to allow for the passage of the reinforcing steel. If desired by the Owner, keys and/or dowel bars shall be provided at the construction joints. Construction joints shall be provided in positions as shown or described on the drawing. Where it is not described, the joints shall be in accordance with the following :

i)In a column, the joint shall be formed about 75mm below the lowest soffit of the beams framing into it.

ii)Concrete in tie beam shall be placed throughout without a joint, but if the provision or a joint is unavoidable, the joint shall be vertical and at the middle of the span.

iii)In forming a joint, concrete shall not be allowed to slope away to thin edge. The locations of construction joints shall be planned by the Contractor well in advance of pouring and have to be approved by the Owner

3.5.23.1 Before the fresh concrete is placed, the cement skin of the partially hardened concrete shall be thoroughly removed and surface made rough by hacking, sand blasting, water jetting, air jetting or any other method as directed by the Owner. The rough surface shall be thoroughly wetted for about two hours and shall be dried and coated with 1:1 freshly mixed cement sand slurry immediately before placing the new concrete. The new concrete shall be worked against the prepared surface before the slurry sets. Special care shall be taken to see that the first layer of concrete placed after a construction joint is thoroughly rammed against the existing layer. Old joints during pour shall be treated with 1:1 freshly made cement sand slurry only after removing all loose materials.

3.5.24 CURING AND PROTECTION OF CONCRETE

3.5.24.1 Newly placed concrete shall be protected by approved means from rain, sun & wind. Concrete placed below ground level shall be protected from falling earth during and after placing. Concrete placed in ground containing deleterious substances shall be kept free from contact with such ground or with water leaking from such ground during placing of concrete and for a period of three days or as otherwise instructed by the Owner after placing of concrete. The ground water around newly poured concrete shall be kept to an approved level by pumping or other approved means of drainage. Adequate steps shall be taken to prevent floatation or flooding. Steps, as approved by the Owner, shall also be taken to protect -immature concrete from damage by debris, excessive loading, vibration etc. which may impair the strength or durability of the concrete. All fresh concrete shall be covered with a layer of Hessian or similar absorbent material and kept constantly wet for a period of seven days or more from the date of placing of concrete as per directions of the Owner. Curing can also be made by ponding. Concrete shall be cured by flooding with water of minimum 25mm depth for the period mentioned above.

Step shall also be taken to protect immature concrete from damage debris by excessive loading, vibrations, abrasions, deleterious ground water, mixing with earth or foreign materials, floatation etc. that may impair the strength and durability of the concrete. Approved curing compound can be used with the permission of the Owner. Such compound shall be applied to all exposed surfaces of the concrete as soon as possible after the concrete has set.

3.5.25 ADJACENT STRUCTURES

3.5.25.1 When working near existing structures care shall be taken to avoid any damage to such structures.

3.5.26 INSTALLATION

3.5.26.1 During erection, the Contractor shall provide necessary temporary bracing or supports to ensure proper installation of the materials. All materials shall be erected in the true locations as shown in the drawings, plumb and level. Extreme care shall be taken to ensure that the threads of holding down bolts and comparable items are protected from damage. Groups of holding down bolts shall be set in such a manner that the tolerance of whole group is not more than 3mm from its true position in plan at the top of the bolt and not more than 3mm from the required level. The top ends of all bolt shanks shall be in one plane to the tolerance stated above. Holding down bolt assemblies shall be set vertically to a tolerance of not more than 1:500.

3.5.27 PROTECTION AGAINST DAMAGE IN TRANSIT

3.5.27.1 All steel work shall be efficiently and sufficiently protected against damage in transit to site from any cause whatsoever. All protecting plates or bars and all ends of members at joints shall be stiffened, all straight bars and plates shall be bundled, all screwed ends and machined surface shall be suitably packed and all bolts, nuts, washers and small loose parts shall be packed separately in cases so as to prevent damage or distortion during transit. Should there be any distortion of fabricated members, the Contractor shall immediately report the matter to the Owner. Distorted reinforcement bars or plates received from stores or distorted during transport from stores to the fabrication yard shall not be used in fabrication unless the distortions are minor which in the opinion of the Owner can be removed by acceptable methods. The cost of all such straightening shall be borne by the Contractor within his unit rates.

These distortions shall be rectified by the Contractor by cold bending. If heating is necessary to rectify the defects, the details of the procedure shall be intimated to the Owner whose approval shall be taken before such rectification. The temperature of heat treatment shall not exceed the limits beyond which the original properties of steel are likely to be impaired

3.5.28 FOUNDATIONS BOLTS

3.5.28.1 The foundation bolts / stubs, as required, for the tower structures shall be supplied by the respective tower contractor. These shall be embedded in concrete while the foundation is cast. The Contractor shall ensure the proper alignment of these bolts to match the holes in the base plate and also co-ordinate with the respective tower contractor for its correctness. The final adjustment of these bolts and their grouting are included in the scope of this contract. Grouting of block outs and the gap between the base

plate and top of concrete shall be done by the Contractor after finalisation of alignments. The unit rate of concreting shall include the cost of above adjustments, grouting, and skins etc. required for this purpose.

3.5.28.2 The Contractor shall be responsible for the correct alignment and leveling of all steel work on site to ensure that the towers are in plumb.

3.5.28.3 Before erection of towers, by tower contractor, on the foundations the top surface of base concrete shall be thoroughly cleaned with wire brushes and by chipping to remove all laitance and loose materials and shall be chipped with a chisel to ensure proper bond between the grout and the foundation concrete. The piling Contractor shall also be responsible for bringing down the top of concrete to the desired level by chipping. In case the foundation as cast is lower than the desired level, the Contractor shall make up the difference by providing additional pack plates without extra cost for any such work or material. No steel structures shall be erected on their foundations unless such foundations have been certified fit for erection by the Owner. Adequate number of air release holes and inspection holes shall be provided in the baseplate.

3.5.29 STABILITY OF STRUCTURE

3.5.29.1 The Contractor shall be responsible for the stability of the structure at all stages of its erection at site and shall take all necessary measures by the additions of temporary bracings and guying to ensure adequate resistance to wind and also to loads due to erection equipment and their operations. Guying and bracing shall be done for erection equipment and their operations. Guying and bracing shall be done in such a way that it does not interface with the movement or working of other agencies working in the area. For the purpose of guying, the Contractor shall not use other structures in the vicinity which are likely to be damaged by the guy.

Such temporary bracings shall neither be included in the measurement nor extra rate shall be payable. Such temporary bracings used shall be the property of the Contractor and may be removed by him at the end of the job from the site of work.

3.5.30 MATERIALS

a. Cement shall conform to the stipulations contained in IS:8112 and shall have a fineness (specific surface of cement) not less than 225 sq.m./kg when tested for fineness by Blaine"s air permeability method as perIS:4031.

b. Sand shall conform to the stipulations contained in IS:383.

c. Water shall be clean and fresh and shall be of potable quality.

d. Aluminium powder or anti-shrinkage admixture like „Groutex" CRS-NS grout (by Cement Research Institute of India) or its equivalent shall be of standard brand from reputed manufacturer and shall be approved bythe Owner prior to its use for work.

3.5.31 CURING

a. The work shall be cured for a period of 7 days commencing 24 hours after the completion of the grouting and under pinning operations. The curing shall be done by covering the surfaces with wet gunny bags.

b. Bar Grips

c. This covers the technical requirement for furnishing and installation of bar grips complete including all labour materials, equipment, staging, etc.

d. Curing should be done as soon as possible after concrete is placed and when initial set has occurred and before it has hardened. It should be continued for a minimum period of 7 to 12 days when normal (Portland) cement is used, 4 to 7 days when rapid hardening cement is used, and should be kept thoroughly wet for 24 hours when high alumina cement is used.

e. Vertical surfaces may be covered with hanging curtains. Columns and small members shall be cured by wrapping round them wet sacks or by sprinkling water continuously. On vertical surfaces it should be checked that the wet fabric is in contact with the surface.

f. All reinforcement shall be cleaned thoroughly by removing loose scales, oil, grease or other deleterious materials. The contractor shall obtain the approval of the Engineer-in-charge or his representative to the reinforcement when fixed in position before any concrete is deposited in the forms.

g. Bars shall be bent cold or straightened in a manner to the satisfaction of the Engineer-in-charge or his representative. Bars bent during transport or handing shall be straightened before using on work. They shall not be heated to facilitate bending. Welding shall be done as per latest IS Code of practice.

h. All reinforcement bars shall be cut and standard hooks for MS rounds made at ends and accurately placed in position as shown on the approved drawings. They shall be securely held in position before and during concreting by annealed binding wires used for binding the reinforcement which shall be of approved quality soft annealed iron wire not less than 1mm (18SWG) size, conforming to IS: 280.

i. As far as possible, bars of full length shall be used. Where bars are required or permitted to be lapped by the Engineer-in-charge, or his representative, the over laps shall be staggered for different bars and located at points, along the span where bending moment is not maximum. The concrete measured over the reinforcing bars shall be in accordance with the approved drawings.

3.5.32 REINFORCED CEMENT CONCRETE

a. Optimum quantity of water shall be mixed to produce the design mix/nominal mix concrete of required workability.
b. Workability shall be such that the concrete surrounds and properly grips all reinforcement.

c. The degree of consistency, which shall depend upon nature of work and method of vibration of concrete, shall be determined by regular slump tests to be carried out by the contractor at his cost.

d. Usually for mass concrete in RCC works where vibrations are used the slumps shall be within 10mm to 25mm.

e. The frequency of such tests and the natures of slumps shall be maintained within the limits specified by the Engineer-in-charge.

f. The Engineer-in-charge also reserves the right to carry out slump tests independently at his own discretion.

g. Cube moulds should be prepared for destructive testing randomly as per instructions giver by Site In-Charge.

h. Cement shall have to be weighed from bulk stocks at site and not by bags. It shall be weighed separately from the aggregates.

i. Water shall either be measured by volume in calibrated buckets or weighed. All necessary equipment shall be maintained in a clean and serviceable condition. Their accuracy shall be periodically checked.

j. Honeycombed RCC structure should be dismantled immediately and reconstructed.

k. If Reinforced Cement Concrete works include Stone masonry works then stone masonry works should be carried out in stages. After completing one stage mortar droppings shall be cleaned and Reinforced Cement Concrete works should be done before starting the second stage of stone masonry work.

3.5.33 DEWATERING

3.5.33.1. Where water is met with during excavation due to stream flow, seepage, shoring, rain or other reasons, the contractor shall take adequate measures such as bailing, pumping, constructing diversion channel, drainage channel, ponds and other necessary works to keep the foundation trenches dry and to protect the green concrete against damage by eruption or sudden rising of water level.

Approval of the Engineer-in-charge shall be required for any method adopted, for the adequacy of dewatering and protection arrangements and for the sound safety of the work shall be required.

Any works which are not mentioned in Bid documents shall be executed as per BOQ and as per the directions of site engineer.

Bidder's Signature & Seal

SECTION – 4

BID SUBMISSION SHEET, BID FORMS AND SCHEDULES

1. Bid Submission Sheet

(To be submitted in Bidder's Letterhead)

Name of contract/W.O:

To,

The Deputy General Manager,
Lower Assam, T&T Circle, AEGCL,
Narengi.Guwahati-26

Ref: Bid identification no.

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 (Price Offer)

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

_____

_____

Bidder's Signature & Seal

2. Form-BG

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 will 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 180 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. Self-Undertaking for Payment of Statutory Taxes

(To be submitted by the bidder)

To,

The Deputy General Manager,
Lower Assam, T&T Circle, AEGCL,
Narengi.Guwahati-26

Subject: Self-Undertaking regarding payment of statutory taxes before applying for tender

Tender/ Bid Reference No & Date: _____

1. I/ We have duly paid and cleared all statutory taxes, cess, dues, and levies payable to Local Authorities, Panchayats, Municipalities, State Government, and the Central Government up to the date of this tender submission and undertake to promptly discharge any such dues that may arise during the tenure of the contract.
2. I/ We shall be solely responsible for payment of all applicable taxes, including GST, duties, license fees, cess, and any other statutory liabilities arising in connection with the performance of the contract.
3. I/ We undertake to immediately inform the Procuring Entity of any statutory revision, demand, or default and shall bear complete responsibility for settlement of such dues, keeping the Procuring Entity fully indemnified against any liability in this regard.
4. I/ We hereby confirm that all notices, demands, or proceedings issued by any Tax Authority up to the date of this submission have been duly complied with and settled. Any outstanding demand has been disclosed to the Procuring Entity, and I/We undertake to settle the same before award of contract, keeping the Procuring Entity indemnified against any liability.
5. In case of any reduction in the rate or amount of GST, taxes, duties, or levies after the Notification of Award, the corresponding benefit shall be duly passed on to the Procuring Entity without delay.
6. This undertaking shall remain valid and binding for the entire duration of the tender evaluation and, if awarded, for the full tenure of the contract including any extensions, until its closure.
7. I/ We understand that at any stage, if it is found that any statement or document submitted is false/forged/invalid, the Procuring Entity has discretion to terminate the contract and proceed with alternate arrangements as per the tender's risk purchase clause if any.

I/ We declare that the above statements are true to the best of my/our knowledge and belief.

Authorized Signatory

Name: _____

Designation: _____

Firm/Company Name: _____

Date: _____

Place: _____

Company Seal: _____

Bidder's Signature & Seal

4. Declaration for Compliance and Utilization of ITC under GST

(To be submitted in bidder's letterhead)

Certified that in discharging the outward tax liability by ITCs all the provisions of GST Acts, Rules and notifications made therein are complied with including the following provisions:

- Goods and services relating to ITCs have actually been received.
- ITCs has been availed strictly in compliance with provisions under Section 16(2) (aa).
- Tax relating to ITCs has actually been paid to the government.
- No ITCs, though reflected in GSTR2B, availed if it is restricted by Section 38(2)(b).
- No ITCs, though reflected in GSTR2B, availed if it is blocked by Section 17(5).
- No ITCs in excess of input goods and services utilized actually in the projects/ works, are utilized to discharge the liabilities.
- In no case, utilization of ITCs in discharging liabilities exceeds the upper limit as prescribed by contractee department.
- The above facts are true to the best of my knowledge.

Authorized Signatory

Name: _____

Designation: _____

Firm/Company Name: _____

Date: _____

Place: _____

Company Seal: _____

Bidder's Signature & Seal

Annexure - I

PROFILE OF THE BIDDER

Sl. No.	Particulars	To be filled by Bidder
a)	Name of the Bidder	:-
b)	Registration with Memorandum of Association	:-
c)	PAN	:-
d)	GST Registration number	:-
e)	Labour Licence registration	:-
f)	Electrical Licence registration	
g)	Income Tax Clearance Certificate	:-
h)	Date of Establishment/ Incorporation	:-
i)	Postal Address	:-
	House No.	:-
	Lane	:-
	Street	:-
	Town/Village	:-
	Post Office	:-
	P.S.	:-
	District	:-
	Pin code	:-
j)	Telephone Number	:-
	Mobile No.	:-
	E-Mail Address	:-
	Website	:-
k)	Name(s) of the Owners/Directors/Partners	
l)	Name of the Banker with Address and Telephone Number	:-
m)	Contact Person Details *(Furnish here name of that person with whom AEGCL may get in touch for more information or clarifications)*	Name:- Designation:- Mobile Number:- Email Address:-

Note: Bidder may attach additional sheets, if required.

Bidder's Signature & Seal