UJVN Limited  
(A Govt. of Uttarakhand Enterprise)  

DAM REHABILITATION AND IMPROVEMENT PROJECT  
(Phase-II)  

REQUEST FOR BIDS NO. NCB/21/EE/PCM-DKP/TN/2021-22  
NATIONAL OPEN COMPETITIVE PROCUREMENT  
(Two-Envelope Bidding Process with e-Procurement)  

(FOR ITEM RATE/ADMEASUREMENT CONTRACTS IN CIVIL WORKS)  

NAME OF WORK : Replacement of Wooden Sleepers with Chequered Plates and Strengthening of Patel Bridge.  

PERIOD OF SALE OF BIDDING DOCUMENT : From 18.11.2021 To 20.12.2021  

TIME AND DATE OF PRE-BID MEETING : Date 06.12.2021 Time 11:00 Hours  

LAST DATE AND TIME FOR RECEIPT OF BIDS : Date 20.12.2021 Time 17:00 Hours  

* TIME AND DATE OF OPENING OF BIDS – Technical Part : Date 21.12.2021 Time 11:00 Hours  

PLACE OF OPENING OF BIDS : Office of the Executive Engineer, Project Civil Maintenance  
Dakpathar, District- Dehradun.  
PIN-248125 (Uttarakhand)  
Phone & Fax- 01360-222111  

OFFICER INVITING BIDS : Office of the Executive Engineer, Project Civil Maintenance  
Dakpathar, District- Dehradun.  
PIN-248125 (Uttarakhand)  
Phone & Fax- 01360-222111  

November 2021
REQUEST FOR BIDS

(RFB)
GOVERNMENT OF UTTARAKHAND

DAM REHABILITATION AND IMPROVEMENT PROJECT

REQUEST FOR BIDS (RFB)
E-Procurement Notice
(Single Stage Two-Envelope Bidding Process with e-Procurement)
NATIONAL OPEN COMPETITIVE PROCUREMENT

Name of Project: Dam Rehabilitation and Improvement Project (DRIP-II)

Contract Title: Replacement of Wooden Sleepers with Chequered Plates and Strengthening of Patel Bridge

Loan No./Credit No./ Grant No.: _______________________________
RFB Reference No.: NCB/21/EE/PCM-DKP/TN/2021-22
Date: ____________

1. The Government of India has applied for financing from the World Bank towards the cost of Dam Rehabilitation and Improvement Project Phase –II (DRIP-II) and intends to apply a part of the funds to cover eligible payments under the contract for construction of works as detailed below.

2. Bidding will be conducted through National open competitive procurement using Request for Bids (RFB) as specified in the World Bank’s “Procurement Regulations for IPF Borrowers, July 2016, Revised August 2018 ("Procurement Regulations"), and is open to all bidders as defined in the Procurement Regulations.

3. Bidders from India should, however, be registered with the Government of India or other State Governments/Government of India, or State/Central Government Undertakings. Bidders from India, who are not registered as above, on the date of bidding, can also participate provided they get themselves registered by the time of contract signing, if they become successful bidders. Bidders are advised to note the clauses on eligibility (Section I Clause 4) and minimum qualification criteria (Section III – Evaluation and Qualification Criteria), to qualify for the award of the contract. In addition, please refer to paragraphs 1.6 and 1.7 of the World Bank’s Guidelines setting forth the World Bank’s policy on conflict of interest.

4. The Office of the Executive Engineer, Project Civil Maintenance, Dakpathar, District-Dehradun. PIN-248125 (Uttarakhand) now invites online bids for the works as detailed below in the table. The bidders may submit bids for any or all of the works indicated therein. Interested bidders may obtain further information and inspect the bidding documents at the address given below during office hours. Bidders are advised to note the clauses on eligibility (Section I Clause 4) and minimum qualification criteria (Section III- Evaluation and qualification criteria), to qualify for the award of the
contract. In addition, please refer to paragraphs 3.14 and 3.15 of the “Procurement Regulation” setting for the World Bank’s policy on conflict of interests.

5. Bidding documents are available online on website: [http://uktenders.gov.in](http://uktenders.gov.in) from 18.11.2021 to 20.12.2021 for a non-refundable fee as indicated in the table below, in the form of Demand Draft (DD) on any Scheduled/Nationalized bank payable Dhakrani in favour of ‘UJVN Ltd., P.N.B. A/c No 0639002100009390’ (In case the Demand Draft / Banker’s Cheque is payable outside Dhakrani, a sum of Rs. 100.00 shall be required extra on account of collection charges. However, any short amount of tender fee will not be acceptable and tender shall be rejected)(Payment documents are to be submitted as per the procedure described in paragraph 9 below). Bidders will be required to register on the website. The bidders would be responsible for ensuring that any addenda available on the website is also downloaded and incorporated.

6. For submission of the bid, the bidder is required to have Digital Signature Certificate (DSC) from one of the Certifying Authorities authorised by Government of India for issuing DSC. Aspiring bidders who have not obtained the user ID and password for participating in e-procurement in this Project, may obtain the same from the website: [http://uktenders.gov.in](http://uktenders.gov.in).

7. Bids comprise two Parts, namely the Technical Part and the Financial Part, and both parts must be submitted simultaneously online on [http://uktenders.gov.in](http://uktenders.gov.in) on or before 17:00 hours on 20.12.2021 and the ‘Technical Part’ of the bids will be publicly opened online on 21.12.2021 at 11:00 hours, in the presence of the bidders designated representatives who wish to attend. The “Financial Part” shall remain unopenedin the e-procurement system until the second public Bid opening for the financial part. Any bid or modifications to bid (including discount) received outside e-procurement system will not be considered. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time and venue. The electronic bidding system would not allow any late submission of bids.

8. All Bids must be accompanied by a Bid Security of the amount specified for the work in the table below, drawn in favour of Executive Engineer, Project Civil Maintenance – Dakpathar, UJVN Ltd., Dakpathar and shall have to be valid for 45 days beyond the validity of the bid. Procedure for submission of bid security is described in Para 9.

9. The bidders are required to submit (a) original payment documents towards the cost of bid document; and registration on e-procurement website (if applicable); (b) original bid security; and (c) original affidavit regarding correctness of information furnished with bid document with the Office of the Executive Engineer, Project Civil Maintenance, Dakpathar, UJVN Ltd., Dakpathar, District- Dehradun, PIN-248125 (Uttarakhand), before the bid submission deadline, either by registered post/speed post/courier or by hand, failing which the bids will be declared non-responsive and will not be opened.
10. A pre-bid meeting will be held on 06.12.2021 at 11:00 hours at the office of the Executive Engineer, Project Civil Maintenance, Dakpathar, UJVNL, Dakpathar, District-Dehradun, PIN-248125 (Uttarakhand), to clarify the issues and to answer questions on any matter that may be raised at that stage as stated in ITB Clause 7.4 of ‘Instructions to Bidders’ of the bidding document. Bidders are advised to download the bidding document prior to the pre-bid meeting in order for bidders to have a good understanding of the scope of work under this contract for discussion and clarification at the pre-bid meeting.

11. Other details can be seen in the bidding documents. The Employer shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, the Employer shall not be liable for any information not received by the bidder. It is the bidders’ responsibility to verify the website for the latest information related to this bid.

12. The address for communication is as under:
Office of the Executive Engineer,
Project Civil Maintenance, Dakpathar,
UJVNL Limited, Dakpathar,
District- Dehradun. PIN-248125 (Uttarakhand)
Email: eepcmdakpathar@gmail.com
Tel. & Fax- 01360-222111
Website: www.ujvnl.com

<table>
<thead>
<tr>
<th>Package No</th>
<th>Name of Work</th>
<th>Bid Security (Rs.)</th>
<th>Cost of Document (Rs. including GST)</th>
<th>Period of Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Replacement of Wooden Sleepers with Chequered Plates and Strengthening of Patel Bridge</td>
<td>INR 1,22,000/-</td>
<td>INR 2,360/- (Including GST)</td>
<td>12 Months (Including monsoon season)</td>
</tr>
</tbody>
</table>
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PART 1 – Bidding Procedures
## Section I - Instructions to Bidders

### A. General

#### 1. Scope of Bid

1.1 In connection with the Specific Procurement Notice - Request for Bids (RFB), **specified in the Bid Data Sheet (BDS)**, the Employer, as **specified in the BDS**, issues this bidding document for the provision of Works as specified in Section VII, Works’ Requirements. The name, identification and number of lots (contracts) of this RFB are **specified in the BDS**.

1.2 Throughout this bidding document:

   (a) the term “in writing” means communicated in written form (e.g., by mail, e-mail, and fax, including if **specified in the BDS**, distributed or received through the electronic-procurement system used by the Employer) with proof of receipt;

   (b) if the context so requires, “singular” means “plural” and vice versa;

   (c) “Day” means calendar day, unless otherwise specified as “Business Day”. A Business Day is any day that is a working day of the Borrower. It excludes the Borrower’s official public holidays;

   (d) the term **ES** means environmental and social (including Sexual Exploitation, and Abuse (SEA), and Sexual Harassment (SH));

   (e) **Sexual Exploitation and Abuse** “(SEA)” means the following:

      (i) **Sexual Exploitation** is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another.

      (ii) **Sexual Abuse** is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;

   (f) **Sexual Harassment** “(SH)” is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by the Contractor’s
Personnel with other Contractor’s or Employer’s Personnel;

(g) “Contractor’s Personnel” is as defined in Sub-Clause 1 (ii) of the General Conditions of Contract; and

(h) “Employer’s personnel” is as defined in GCC Sub-Clause 1 (nn) of the General Conditions of Contract.

A non-exhaustive list of (i) behaviors which constitute SEA and (ii) behaviors which constitute SH is attached to the Code of Conduct form in Section IV.

## 2. Source of Funds

2.1 The Borrower or Recipient (hereinafter called “Borrower”) specified in the BDS has received or has applied for financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) in an amount specified in the BDS, toward the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this bidding document is issued.

2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, equipment, plant, or materials, if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

## 3. Fraud and Corruption

3.1 The Bank requires compliance with the Bank’s Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG’s Sanctions Framework, as set forth in Section VI.

3.2 In further pursuance of this policy, bidders shall permit and shall cause their agents (whether declared or not), subcontractors, sub-consultants, service providers, suppliers, and personnel, to permit the Bank to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, bid submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors.
appointed by the Bank.

| 4. Eligible Bidders | 4.1 A Bidder may be a firm that is a private entity, or a state-owned enterprise or institution subject to ITB 4.6, or any combination of them in the form of a joint venture (JV), under an existing agreement, or with the intent to enter into such an agreement supported by a letter of intent, unless otherwise specified in the BDS. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all members. Unless specified in the BDS, there is no limit on the number of members in a JV. The joint venture agreement shall be registered in the place specified in BDS so as to be legally valid and binding on members. |
| 4.2 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder: |
| (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or |
| (b) receives or has received any direct or indirect subsidy from another Bidder; or |
| (c) has the same legal representative as another Bidder; or |
| (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or |
| (e) any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or |
| (f) any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower as Project Manager (Engineer) for the Contract implementation; |
| (g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting |
services for the preparation or implementation of the project specified in the BDS ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm;

(h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the contract, and/or the Bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the procurement process and execution of the contract.

| 4.3 | A firm that is a Bidder (either individually or as a JV member) shall not participate in more than one Bid, except for permitted alternative Bids. This includes participation as a Subcontractor in other Bids. Such participation shall result in the disqualification of all Bids in which the firm is involved. A firm that is not a Bidder or a JV member may participate as a subcontractor in more than one Bid. |

| 4.4 | A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.8. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub-consultants for any part of the Contract including related Services. |

| 4.5 | A Bidder that has been sanctioned by the Bank, pursuant to the Bank’s Anti-Corruption Guidelines, in accordance with its prevailing sanctions policies and procedures as set forth in the WBG’s Sanctions Framework as described in Section VI paragraph 2.2 d., shall be ineligible to be prequalified for, initially selected for, bid for, propose for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address specified in the BDS. |
4.6 Bidders that are state-owned enterprises or institutions in the Employer’s Country may be eligible to compete and be awarded a Contract(s) only if they can establish, in a manner acceptable to the Bank, that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not under supervision of the Employer.

4.7 A Bidder shall not be under suspension from Bidding by the Employer as the result of the operation of a Bid–Securing or Proposal-Securing Declaration.

4.8 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. When the Works are implemented across jurisdictional boundaries (and more than one country is a Borrower, and is involved in the procurement), then exclusion of a firm or individual on the basis of ITB 4.8 (a) above by any country may be applied to that procurement across other countries involved, if the Bank and the Borrowers involved in the procurement agree.

4.9 A Bidder shall provide such documentary evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.

5. Eligible Materials, Equipment and Services

5.1 The materials, equipment and services to be supplied under the Contract and financed by the Bank may have their origin in any country subject to the restrictions specified in Section V, Eligible Countries, and all expenditures under the Contract will not contravene such restrictions. At the Employer’s request, Bidders may be required to provide evidence of the origin of materials, equipment and services.
## B. Contents of Bidding Document

<table>
<thead>
<tr>
<th>6. Sections of Bidding Document</th>
<th>6.1 The bidding document consists of Parts 1, 2, and 3, which include all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITB 8.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>PART 1 Bidding Procedures</strong></td>
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<tr>
<td></td>
<td>• Section I - Instructions to Bidders (ITB)</td>
</tr>
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<td></td>
<td>• Section II - Bid Data Sheet (BDS)</td>
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<td>• Section III - Evaluation and Qualification Criteria</td>
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<td>• Section IV - Bidding Forms</td>
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<td></td>
<td><strong>PART 2 Works’ Requirements</strong></td>
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<td></td>
<td>• Section VII - Works’ Requirements</td>
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<td></td>
<td><strong>PART 3 Conditions of Contract and Contract Forms</strong></td>
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<tr>
<td></td>
<td>• Section VIII - General Conditions of Contract (GCC)</td>
</tr>
<tr>
<td></td>
<td>• Section IX - Particular Conditions of Contract (PCC)</td>
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<td></td>
<td>• Section X - Contract Forms</td>
</tr>
<tr>
<td>6.2 The Specific Procurement Notice - Request for Bids (RFB) issued by the Employer is not part of this bidding document.</td>
<td>6.3 Unless obtained directly from the Employer or downloaded from the official website specified in the ‘E-Procurement Notice’, the Employer is not responsible for the completeness of the bidding document, responses to requests for clarification, the minutes of the pre-Bid meeting (if any), or Addenda to the bidding document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Employer or downloaded from the official website specified in the ‘E-Procurement Notice’ shall prevail.</td>
</tr>
<tr>
<td>6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding document and to furnish with its Bid all information and documentation as is required by the bidding document.</td>
<td>7. Clarification of Bidding</td>
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<tr>
<td>Document, Site Visit, Pre-Bid Meeting</td>
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<td>----------------------------------------</td>
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<tr>
<td>bidding document may notify the Employer online or raise its inquiries during the pre-Bid meeting if provided for in accordance with ITB 7.4. Clarifications requested through any other mode shall not be considered by the Employer. The Employer will respond to any request for clarification, provided that such request is received prior to the deadline for submission of Bids within a period specified in the BDS. Description of clarification sought and the response of the Employer shall be uploaded for information of all Bidders without identifying the source of request for clarification. Should the clarification result in changes to the essential elements of the bidding document, the Employer shall amend the bidding document following the procedure under ITB 8 and ITB 22.2. It is the bidder’s responsibility to check on the e-procurement system, for any addendum/amendment/corrigendum to the bidding document.</td>
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<tr>
<td>7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder’s own expense.</td>
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<tr>
<td>7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.</td>
<td></td>
</tr>
<tr>
<td>7.4 If so specified in the BDS, the Bidder’s designated representative is invited to attend a pre-Bid meeting and/or a Site of Works visit. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.</td>
<td></td>
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<tr>
<td>7.5 The Bidder is requested, to submit any questions only through the e-procurement portal, not later than one week before the meeting. Clarifications requested through any other mode shall not be considered by the Employer.</td>
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<tr>
<td>7.6 Minutes of the pre-Bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be uploaded online on e-procurement system. Any modification to the bidding document</td>
<td></td>
</tr>
</tbody>
</table>
that may become necessary as a result of the pre-Bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-Bid meeting. It is the bidder’s responsibility to check on the e-procurement system, for any addendum/amendment/corrigendum to the bidding document. Nonattendance at the pre-Bid meeting will not be a cause for disqualification of a Bidder.

| 8. Amendment of Bidding Document | 8.1 At any time prior to the deadline for submission of bids, the Employer may amend the bidding document by issuing addenda.

8.2 Any addendum issued shall be part of the bidding document and shall be deemed to have been communicated to all the bidders. The addenda will appear on the e-procurement system under “Latest Corrigendum”, and Email notification is also automatically sent to those bidders who have started working on the tender, unless otherwise specified in the BDS. The Employer shall not be liable for any information not received by the bidder. It is the bidders’ responsibility to verify the website for the latest information related to this bid.

8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2.

C. Preparation of Bids

| 9. Cost of Bidding | 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

| 10. Language of Bid | 10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Employer, shall be written in English. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Bid, such translation shall govern.

| 11. Documents Comprising the Bid | 11.1 The Bid shall comprise two Parts, namely the Technical Part and the Financial Part. These two Parts shall be submitted simultaneously.

11.2 The Technical Part shall contain the following:
(a) **Letter of Bid – Technical Part** prepared in accordance with ITB 12 and ITB 14;

(b) **Bid Security or Bid-Securing Declaration** in accordance with ITB 19.1;

(c) **Alternative Bid – Technical Part**, if permissible, in accordance with ITB 13, the Technical Part of any Alternative Bid;

(d) **Authorization**: written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.3, and in accordance with ITB 20.4 in case of a JV;

(e) **Bidder’s Eligibility**: documentary evidence in accordance with ITB 17 establishing the Bidder’s eligibility to Bid;

(f) **Qualifications**: documentary evidence in accordance with ITB 17 establishing the Bidder’s qualifications to perform the contract if its Bid is accepted;

(g) **Conformity**: a technical proposal in accordance with ITB 16;

(h) **Construction methodology** as detailed in Para 1.1 of Section III Evaluation Criteria;

(i) Contractor Registration certificate (as per RFB); and

(j) any other document **required in the BDS**.

11.3 The **Financial Part** shall contain the following:

(a) **Letter of Bid – Financial Part**: prepared in accordance with ITB 12 and ITB 14;

(b) **Completed Schedules** including priced Bill of Quantities in accordance with ITB 12 and ITB 14, as **specified in BDS**;

(c) **Alternative Bid - Financial Part**: if permissible in accordance with ITB 13; and

(d) any other document **required in the BDS**.

11.4 The Technical Part shall not include any information related to the Bid price. Where material financial information related to the Bid price is contained in the Technical Part the Bid shall be declared non-responsive.
| 11.5 | In addition to the requirements under ITB 11.2, Bids submitted by a JV (where permitted) shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement. |
| 11.6 | The Bidder shall furnish in the Letter of Bid – Financial Part information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid. |

### 12. Process of Bid Submission

| 12.1 | The Letter of Bid – Technical Part, Letter of Bid – Financial Part, Schedules including Bill of Quantities, and all documents listed under Clause 11, shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.3. All blank spaces shall be filled in with the information requested. |
| 12.2 | Entire Bid including the Letters of Bid, Schedules and filled-up Bill of Quantities shall be submitted online on e-procurement system specified in ITB 7.1. Details and process of online submission of the tender and relevant documents are given in the website mentioned above. Scanned copies of documents listed in ITB Clauses 11 and 12.3 should also be uploaded on this website. |
| 12.3 | **Submission of Original Documents:** The bidders are required to separately submit (i) original payment documents towards the cost of bid document; and registration on e-procurement website (if applicable); (ii) original bid security/ Bid-Securing Declaration in approved form; and (iii) original affidavit regarding correctness of information furnished with bid document, with the office **specified in the BDS**, before the Bid submission deadline, either by registered/speed post/courier or by hand, failing which the bids will be declared non-responsive and will not be opened. Hard copy of rest of the bid or any other document are not to be submitted. |

| 13.2 | When alternative times for completion are explicitly invited, a statement to that effect will be included **in the BDS** and the method of evaluating different alternative times for completion will be described in Section III, Evaluation and Qualification |
### Criteria.

| 13.3 | Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the bidding document must first price the Employer’s design as described in the bidding document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Bidder with the Most Advantageous Bid conforming to the basic technical requirements shall be considered by the Employer. |
| 13.4 | When specified in the BDS, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be identified in the BDS and described in Section VII, Works’ Requirements. The method for their evaluation will be stipulated in Section III, Evaluation and Qualification Criteria. |

| 14. Bid Prices and Discounts | 14.1 The prices and discounts quoted by the Bidder in the Letter of Bid – Financial Part and in the Schedules including Bill of Quantities shall conform to the requirements specified below. |
| 14.2 | The Bidder shall submit a Bid for the whole of the Works described in ITB 1.1 by filling in prices for all items of the Works, as identified in Section IV - Bidding Forms along with the total bid price (both in figures and words). The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities. Corrections if any, in the bid can be carried out by editing the information before electronic submission on e-procurement portal. |
| 14.3 | The price to be quoted in the Letter of Bid – Financial Part, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered. |
| 14.4 | The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid – Financial Part in accordance with ITB 12.1. |
| 14.5 | Unless otherwise specified in the BDS and the Conditions of Contract, the prices quoted by the Bidder shall be fixed. |
14.6 If so specified in ITB 1.1, Bids are invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer discounts for the award of more than one Contract shall specify in their Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4, provided the Bids for all lots (contracts) are opened at the same time.

14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the deadline for submission of Bids, shall be included in the rates and prices and the total Bid price submitted by the Bidder.

14.8 Bidders may like to ascertain availability of tax/duty exemption benefits available in India. They are solely responsible for obtaining such benefits which they have considered in their bid and in case of failure to receive such benefits for reasons whatsoever, the Employer will not compensate the bidder (Contractor). The bidder shall furnish along with his bid a declaration to this effect in the Declaration Format provided in Section IV of the bidding document.

Where the bidder has quoted taking into account such benefits, it must give all information required for issue of certificates in terms of the Government of India’s relevant Notifications as per the declaration format. In case the bidder has not provided the required information or has indicated to be furnished later on in the Declaration Format, the same shall be construed that the goods/construction equipment for which certificate is required is Nil.

To the extent the Employer determines the quantities indicated therein are reasonable keeping in view the quantities in bill of quantities, construction program and methodology, the certificates will be issued within 60 days of signing of the contract and no subsequent changes will be permitted. In case of materials pertaining to Variation items and quantities, the certificate shall be issued only on request from the Contractor when in need and duly certified by the Project Manager.

No certificate will be issued for items where no quantity/capacity of equipment is indicated in the statement.

If the bidder has considered the tax/duty exemption for materials/construction equipment to be bought for the work, the bidder shall confirm and certify that the Employer will not be required to undertake any responsibilities of the Government of
India Scheme or the said exemptions being available during the contract execution, except issuing the required certificate. The bids which do not conform to the above provisions or any condition by the bidder which makes the bid subject to availability of tax/duty exemption for materials/construction equipment or compensation on withdrawal of any variations to the said exemptions will be treated as non-responsive and rejected.

Any delay in procurement of the construction equipment/machinery/goods as a result of the above shall not be a cause for granting any extension of time.

<table>
<thead>
<tr>
<th>15. Currencies of Bid and Payment</th>
<th>15.1 The unit rates and prices shall be quoted by the Bidder and shall be paid for, entirely in Indian Rupees.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Documents Comprising the Technical Proposal</td>
<td>16.1 The Bidder shall furnish a technical proposal in the Technical Part of the Bid, including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, Bidding Forms, in sufficient detail to demonstrate the adequacy of the Bidders’ proposal to meet the work’s requirements and the completion time.</td>
</tr>
<tr>
<td>17. Documents Establishing the Eligibility and Qualifications of the Bidder</td>
<td>17.1 To establish Bidder’s eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid – Technical Part, included in Section IV, Bidding Forms.</td>
</tr>
<tr>
<td></td>
<td>17.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract, the Bidder shall provide the information requested in the corresponding information sheets included in Section IV, Bidding Forms.</td>
</tr>
<tr>
<td>18. Period of Validity of Bids</td>
<td>18.1 Bids shall remain valid for 90 days or for the Bid Validity period specified in the BDS. The Bid Validity period starts from the date fixed for the Bid submission deadline (as prescribed by the Employer in accordance with ITB 22.1). A Bid valid for a shorter period shall be rejected by the Employer as nonresponsive.</td>
</tr>
</tbody>
</table>
|                                  | 18.2 In exceptional circumstances, prior to the expiration of the Bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 19, it shall also be extended for forty-five (45) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or
permitted to modify its Bid, except as provided in ITB 18.3.

<table>
<thead>
<tr>
<th>18.3</th>
<th>If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial Bid validity period, the Contract price shall be determined as follows:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) in the case of <strong>fixed price</strong> contracts, the Contract price shall be the Bid price adjusted by the factor <strong>specified in the BDS</strong>;</td>
<td></td>
</tr>
<tr>
<td>(b) in the case of <strong>adjustable</strong> price contracts, no adjustment shall be made; or</td>
<td></td>
</tr>
<tr>
<td>(c) in any case, Bid evaluation shall be based on the Bid price without taking into consideration the applicable correction from those indicated above.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>19. Bid Security</th>
<th>19.1</th>
<th>The Bidder shall furnish as part of the Technical Part of its Bid, either a Bid-Securing Declaration or a Bid Security as <strong>specified in the BDS</strong>, in original form and, in the case of a Bid security, for the amount <strong>specified in the BDS</strong>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.2</td>
<td>A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.</td>
<td></td>
</tr>
<tr>
<td>19.3</td>
<td>If a Bid Security is specified pursuant to ITB 19.1, the Bid Security shall be a demand guarantee in any of the following forms at the Bidder’s option:</td>
<td></td>
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<tr>
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</tr>
<tr>
<td>(a) an unconditional bank guarantee issued by a Nationalized or Scheduled bank located in India;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) an irrevocable letter of credit issued by a Nationalized or Scheduled bank located in India;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) a cashier’s or certified check or demand draft issued by a Nationalized or Scheduled bank located in India;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) another security <strong>specified in the BDS</strong>,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the case of a bank guarantee, the Bid Security shall be submitted using the Bid Security Form included in Section IV, Bidding Forms. The form must include the complete name of the Bidder. The Bid Security shall be valid for forty-five (45) days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 18.2. |

<p>| 19.4 | If a Bid Security or Bid Securing Declaration is specified pursuant to ITB 19.1, any Bid not accompanied by a substantially responsive Bid Security or Bid Securing |</p>
<table>
<thead>
<tr>
<th>Section</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.5</td>
<td>If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder’s signing the Contract and furnishing the Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security pursuant to ITB 50.</td>
</tr>
<tr>
<td>19.6</td>
<td>The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security.</td>
</tr>
</tbody>
</table>
| 19.7    | The Bid Security may be forfeited or the Bid-Securing Declaration executed:  
(a) if a Bidder withdraws/modifies/substitutes its Bid during the period of Bid validity specified by the Bidder on the Letter of Bid - Technical Part and repeated in Letter of Bid - Financial Part, or any extension thereto provided by the Bidder; or  
(b) if the Bidder does not accept the correction of its Bid Price pursuant to ITB 36; or  
(c) if the successful Bidder fails to:  
(ii) furnish a Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with ITB 50. |
| 19.8    | The Bid Security or the Bid-Securing Declaration of a JV shall be in the name of the JV that submits the Bid. If the JV has not been constituted into a legally enforceable JV, at the time of Bidding, the Bid Security or the Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent mentioned in ITB 4.1 and ITB 11.2. |
| 19.9    | If a Bid Security is not required in the BDS, pursuant to ITB 19.1, and:  
(a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder in the Letters of Bid or any extended date provided by the Bidder; or  
(b) if the successful Bidder fails to: sign the Contract in |
accordance with ITB 49; or furnish a Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with ITB 50;

the Borrower may, if provided for in the BDS, declare the Bidder ineligible to be awarded a contract by the Employer for a period of time as stated in the BDS.

<table>
<thead>
<tr>
<th>20. Format and Signing of Bid</th>
<th>20.1 The Bidder shall prepare the Bid as per details given in ITB 21.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20.2 Bidders shall mark as “CONFIDENTIAL” information in their Bids which is confidential to their business.</td>
</tr>
<tr>
<td></td>
<td>20.3 The Bid shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be uploaded along with the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature.</td>
</tr>
<tr>
<td></td>
<td>20.4 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives. Documents establishing authority to sign the bid on behalf of the JV shall be uploaded along with the bid.</td>
</tr>
<tr>
<td></td>
<td>20.5 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the Bid.</td>
</tr>
</tbody>
</table>

| 21. Preparation of Bids | 21.1 Bids, both Technical and Financial Parts, shall be submitted online on the e-procurement system specified in BDS 7.1. Detailed guidelines for viewing bids and submission of online bids are given on the website. The Request for Bids under this Project is published on this website. Any citizen or prospective bidder can logon to this website and view the Request for Bids and can view the details of works for which bids are invited. A prospective bidder can submit its bid online; however, the bidder is required to have enrolment/registration in the website, and should have valid Digital Signature Certificate (DSC) in the form of smart card/e-token obtained from any certifying agency authorised by the Government of India (for class of DSC specified in BDS). The bidder should register in the website using the relevant option available. Then the Digital Signature |
registration has to be done with the e-token, after logging into
the website. The bidder can then login the website through the
secured login by entering the password of the e-token & the user
id/ password chosen during registration. After getting the bid
schedules, the Bidder should go through them carefully and
submit the specified documents, along with the bid, otherwise
the bid will be rejected.

| 21.2 | The completed bid comprising of documents indicated in ITB 12, should be uploaded on the e-procurement portal along with scanned copies of requisite certificates as are mentioned in different sections in the bidding document and scanned copy of the bid security. |
| 21.3 | All the documents are required to be signed digitally by the bidder. After electronic online bid submission, the system generates a unique bid identification number which is time stamped as per server time. This shall be treated as acknowledgement of bid submission. |
| 21.4 | Physical, e-mail, Telex, Cable or Facsimile bids will be rejected as non-responsive. |

| 22. Deadline for Submission of Bids | 22.1 Bids, both Technical and Financial Parts, must be uploaded online no later than the date and time specified in the BDS. |
| 22.2 | The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the bidding document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended. |

| 23. Late Bids | 23.1 The electronic bidding system would not allow any late submission of bids after due date & time as per server time. |

| 24. Withdrawal, Substitution, and Modification of Bids | 24.1 Bidders may modify their bids by using the appropriate option for bid modification on e-procurement portal, before the deadline for submission of bids. For this the bidder need not make any additional payment towards the cost of bid document. For bid modification and consequential re-submission, the bidder is not required to withdraw his bid submitted earlier. The last modified bid submitted by the bidder within the bid submission time shall be considered as the bid. For this purpose, modification/withdrawal by other means will not be accepted. In online system of bid submission, the modification and consequential re-submission of bids is allowed any number of times. A bidder may withdraw his bid by using the appropriate |
option for bid withdrawal, before the deadline for submission of bids, however, if the bid is withdrawn, re-submission of the bid is not allowed (or allowed if specified in BDS).

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall not be opened.

24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Letter of Bid or any extension thereof. This will result in the forfeiture of the Bid Security pursuant to ITB 19.7.

E. Public Opening of Technical Parts of Bids

25.1 The Employer shall publicly open Technical Parts of all Bids received by the deadline, at the date, time and place specified in the BDS, in the presence of Bidders’ designated representatives and anyone who chooses to attend, and this could also be viewed by the bidders online. The Financial Parts of the bids shall remain unopened in the e-procurement system, until the subsequent public opening, following the evaluation of the Technical Parts of the Bids. In all cases, original documents submitted as specified in ITB 12.3 shall be first scrutinized, and Bids that do not comply with the provisions of ITB 12.3 will be declared non-responsive and will not be opened. Thereafter, bidders’ names, the presence or absence of a Bid Security or Bid Securing Declaration, if one was required, alternative bids – technical parts, if any, and such other details as the Employer may consider appropriate will be notified, online by the Employer at the time of bid opening.

In the event of the specified date of bid opening being declared a holiday for the Employer, the bids will be opened at the appointed time and location on the next working day.

25.2 The electronic summary of the bid opening will be generated and uploaded online. The Employer will also prepare minutes of the Bid opening, including the information disclosed and upload the same for viewing online. Only Technical Parts of Bids, and technical parts of Alternative Bids if any, that are opened at technical Bid opening shall be considered further for evaluation.


26. Confidentiality

26.1 Information relating to the evaluation of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with the
<table>
<thead>
<tr>
<th>Bidding process until information on Intention to Award the Contract is transmitted to all Bidders in accordance with ITB 45. In cases where ITB 45 is not applicable, such information shall not be disclosed until Notification of Award is transmitted in accordance with ITB 47.</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.2 Any effort by a Bidder to influence the Employer in the evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.</td>
</tr>
<tr>
<td>26.3 Notwithstanding ITB 26.2, from the time of Bid opening to the time of Contract award, if a Bidder wishes to contact the Employer on any matter related to the Bidding process, it shall do so in writing.</td>
</tr>
<tr>
<td><strong>27. Clarification of Bids</strong></td>
</tr>
<tr>
<td>27.1 To assist in the examination, evaluation, and comparison of the Bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid giving a reasonable time for a response. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer’s request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB 36.</td>
</tr>
<tr>
<td>27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer’s request for clarification, its Bid may be rejected.</td>
</tr>
<tr>
<td><strong>28. Deviations, Reservations, and Omissions</strong></td>
</tr>
<tr>
<td>28.1 During the evaluation of Bids, the following definitions apply:</td>
</tr>
<tr>
<td>(a) “Deviation” is a departure from the requirements specified in the bidding document;</td>
</tr>
<tr>
<td>(b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and</td>
</tr>
<tr>
<td>(c) “Omission” is the failure to submit part or all of the information or documentation required in the bidding document.</td>
</tr>
<tr>
<td><strong>29. Nonmaterial Nonconformities</strong></td>
</tr>
<tr>
<td>29.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid which do not constitute a material deviation, reservation or omission.</td>
</tr>
</tbody>
</table>
Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price or substance of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or nonconforming item or component in the manner specified in the BDS.

### G. Evaluation of Technical Parts of Bids

#### 30. Evaluation of Technical Parts

| 30.1 | In evaluating the Technical Parts of each Bid, the Employer shall use the criteria and methodologies listed in this ITB and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted. |

#### 31. Determination of Responsiveness

| 31.1 | The Employer’s determination of a Bid’s responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11. |

| 31.2 | A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that: |

| (a) | if accepted, would: |

| (i) | affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or |

| (ii) | limit in any substantial way, inconsistent with the bidding document, the Employer’s rights or the Bidder’s obligations under the proposed Contract; or |

| (b) | if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids. |

| 31.3 | The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 16, in particular, to confirm that all requirements of Section VII, Works’ Requirements have been met without any material deviation, reservation or |
If a Bid is not substantially responsive to the requirements of the bidding document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

### 32. Qualification of the Bidder

**32.1** The Employer shall determine to its satisfaction whether the eligible Bidders that have submitted substantially responsive Bid - Technical Parts meet the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

The determination shall be based upon an examination of the documentary evidence of the Bidder’s qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder’s subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the bidding document), or any other firm different from the Bidder.

If a Bidder does not meet the qualifying criteria specified in Section III, Evaluation and Qualification Criteria, its Bid shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

Only Bids that are both substantially responsive to the bidding document, and meet all Qualification Criteria shall have the Financial Parts of their Bids opened at the second public opening.

### 33. Subcontractors

**33.1** Unless otherwise stated in the BDS, the Employer does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Employer.

The subcontractor’s qualifications shall not be used by the Bidder to qualify for the Works unless their specialized parts of the Works were previously designated by the Employer in the BDS as can be met by subcontractors referred to hereafter as ‘Specialized Subcontractors’, in which case, the qualifications of the Specialized Subcontractors proposed by the Bidder may be added to the qualifications.

Bidders may propose subcontracting up to the percentage of total value of contracts or the volume of works as specified in the BDS. Subcontractors proposed by the Bidder shall be fully qualified for their parts of the Works.
### H. Public Opening of Financial Parts of Bids

<table>
<thead>
<tr>
<th>34. Public Opening of Financial Parts</th>
<th>34.1 Following the completion of the evaluation of the Technical Parts of the Bids, and the Bank has issued its no objection (if applicable), the Employer shall notify in writing those Bidders whose Bids were considered non-responsive to the bidding document or failed to meet the Qualification Criteria, advising them of the following information:</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>(a) the grounds on which their Technical Part of Bid failed to meet the requirements of the bidding document;</td>
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<tr>
<td></td>
<td>(b) their Financial Part of Bid shall not be opened; and</td>
</tr>
<tr>
<td></td>
<td>(c) notify them of the date, time, and location for public opening of Financial Parts of the Bids.</td>
</tr>
<tr>
<td></td>
<td>34.2 The Employer shall, simultaneously, notify in writing those Bidders whose Technical Part have been evaluated as substantially responsive to the bidding document and met all Qualifying Criteria, advising them of the following information:</td>
</tr>
<tr>
<td></td>
<td>(a) their Bid has been evaluated as substantially responsive to the bidding document and met the Qualification Criteria;</td>
</tr>
<tr>
<td></td>
<td>(b) their Financial Part of Bid will be opened at the public opening of the Financial Parts; and</td>
</tr>
<tr>
<td></td>
<td>(c) notify them of the date, time and location for public opening of the Financial Parts of the Bids, <strong>as specified in the BDS.</strong></td>
</tr>
<tr>
<td></td>
<td>34.3 The opening date should allow Bidders sufficient time to make arrangements for attending the opening. The Financial Part of the Bids shall be opened publicly in the presence of Bidders’ designated representatives and anyone who chooses to attend, and this could also be viewed by the bidders online. The bidder’s names, the Bid prices, per lot (contract) if applicable, including any discounts and Alternative Bid - Financial Part if any, and such other details as the Employer may consider appropriate, will be notified online by the Employer at the time of bid opening.</td>
</tr>
<tr>
<td></td>
<td>In the event of the specified date of bid opening being declared a holiday for the Employer, the bids will be opened at the appointed time and location on the next working day.</td>
</tr>
<tr>
<td></td>
<td>34.4 The electronic summary of the bid opening will be generated and uploaded online. The Employer will also prepare minutes of the</td>
</tr>
</tbody>
</table>
Bid opening, including the information disclosed and upload the same for viewing online. Only Financial Parts of Bids, Financial Parts of Alternative Bids, and discounts that are opened at Bid opening shall be considered further for evaluation.

### I. Evaluation of Financial Parts of Bids

<table>
<thead>
<tr>
<th>35. Evaluation of Financial Parts</th>
<th>35.1 To evaluate the Financial Part, the Employer shall consider the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a) the Bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities for admeasurement contracts, but including Daywork items, where priced competitively;</td>
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<tr>
<td></td>
<td>(b) price adjustment for correction of arithmetical errors in accordance with ITB 36.1;</td>
</tr>
<tr>
<td></td>
<td>(c) price adjustment due to discounts offered in accordance with ITB 14.4;</td>
</tr>
<tr>
<td></td>
<td>(d) Not used;</td>
</tr>
<tr>
<td></td>
<td>(e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 29.3; and</td>
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<tr>
<td></td>
<td>(f) the additional evaluation factors are specified in Section III, Evaluation and Qualification Criteria.</td>
</tr>
<tr>
<td>35.2 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.</td>
<td></td>
</tr>
<tr>
<td>35.3 If this bidding document allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated cost of the contract combinations, including any discounts offered in the Letter of Bid – Financial Part, is specified in Section III, Evaluation and Qualification Criteria.</td>
<td></td>
</tr>
</tbody>
</table>

### 36. Correction of Arithmetical Errors

<table>
<thead>
<tr>
<th>36.1 In evaluating the Financial Part of each Bid, the Employer shall correct arithmetical errors on the following basis:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) only for admeasurement contracts, if there is a</td>
</tr>
</tbody>
</table>

---

Daywork is work carried out following instructions of the Project Manager and paid for on the basis of time spent by workers, and the use of materials and the Contractor’s equipment, at the rates quoted in the Bid. For Daywork to be priced competitively for Bid evaluation purposes, the Employer must list tentative quantities for individual items to be costed against Daywork (e.g., a specific number of tractor driver staff-days, or a specific tonnage of Portland cement), to be multiplied by the Bidders’ quoted rates and included in the total Bid price.
<table>
<thead>
<tr>
<th>Paragraph</th>
<th>Text</th>
</tr>
</thead>
</table>
| 30        | discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected;  
(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and  
(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above. |
| 36.2      | Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 36.1, shall result in the rejection of the Bid and the Bid Security may be forfeited in accordance with ITB Sub-Clause 19.7. |
| 37.1      | Not used. |
| 38.1      | Not applicable. |
| 39.1      | The Employer shall compare the evaluated costs of all responsive and qualified Bids to determine the Bid that has the lowest evaluated cost. |
| 40.1      | An Abnormally Low Bid is one where the Bid price, in combination with other constituent elements of the Bid, appears unreasonably low to the extent that the Bid price raises material concerns as to the capability of the Bidder to perform the Contract for the offered Bid price. |
| 40.2      | In the event of identification of a potentially Abnormally Low Bid, the Employer, unless otherwise specified in the BDS, shall seek written clarifications from the Bidder, including detailed price analyses of its Bid price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the bidding document. |
| 40.3      | After evaluation of the price analyses, in the event that the Employer determines that the Bidder has failed to demonstrate its capability to perform the Contract for the offered Bid Price, the Employer shall reject the Bid. |
### 41. Unbalanced or Front-Loaded Bids

41.1 If the Bid for an admeasurement contract, which results in the lowest evaluated cost is, in the Employer’s opinion, seriously unbalanced or, front-loaded, the Employer may require the Bidder to provide written clarifications. Clarifications may include detailed price analyses (with breakdown of unit rates) to demonstrate the consistency of the Bid prices with the scope of works, proposed methodology, schedule and any other requirements of the bidding document.

41.2 After the evaluation of the information and detailed price analysis presented by the Bidder, the Employer may as appropriate:

(a) accept the Bid without any additional Performance Security; or

(b) require that the amount of the Performance Security be increased at the expense of the Bidder to a level not exceeding twenty percent (20%) of the Contract Price to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract; or

(c) reject the Bid if the risk cannot be mitigated through additional performance security.

### 42. Most Advantageous Bid

42.1 Having compared the evaluated costs of Bids, the Employer shall determine the Most Advantageous Bid. The Most Advantageous Bid is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be:

(a) substantially responsive to the bidding document; and

(b) the lowest evaluated cost.

### 43. Employer’s Right to Accept Any Bid, and to Reject Any or All Bids

43.1 The Employer reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids at any time prior to Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all documents submitted and specifically, Bid securities, shall be promptly returned to the Bidders.

### 44. Standstill Period

44.1 Standstill Period shall not apply.

[Note 1: where it is proposed to permit Standstill Period, incorporate all changes as indicated in Attachment 1 at the end of this document.

Note 2: Standstill period shall not apply where only one bid is submitted or where the bidding process is in response to an emergency situation recognized by the Bank]
### 45. Notice of Intention to Award

| 45.1 | Not used. |

#### J. Award of Contract

### 46. Award Criteria

| 46.1 | Subject to ITB 43, the Employer shall award the Contract to the successful Bidder. This is the Bidder whose Bid has been determined to be the Most Advantageous Bid as specified in ITB 42. |

### 47. Notification of Award

| 47.1 | Prior to the expiration of the Bid Validity Period, the Employer shall transmit the Letter of Acceptance to the successful Bidder. The Letter of Acceptance shall specify the sum that the Employer will pay the Contractor in consideration of the execution of the contract (hereinafter and in the Conditions of Contract and Contract Forms called “the Contract Price”). |
| 47.2 | Within ten (10) Business Days after the date of transmission of the Letter of Acceptance, the Employer shall publish the Contract Award Notice which shall contain, at a minimum, the following information: |
| (a) | name and address of the Employer; |
| (b) | name and reference number of the contract being awarded, and the selection method used; |
| (c) | names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated; |
| (d) | names of all Bidders whose Bids were rejected either as nonresponsive or as not meeting qualification criteria, or were not evaluated, with the reasons therefor; and |
| (e) | the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope. |
| 47.3 | The Contract Award Notice shall be published on a National website (Gol website http://tenders.gov.in or Gol Central Public Procurement Portal https://eprocure.gov.in/cppp/) or on the Employer’s website, and on the e-procurement system. |
| 47.4 | Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract. |

### 48. Debriefing by the Employer

| 48.1 | Not used. |

### 49. Signing of

<p>| 49.1 | Promptly upon Notification of Award, the Employer shall |</p>
<table>
<thead>
<tr>
<th>Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>prepare the Contract Agreement, and keep it ready in the office of the Employer for the signature of the Employer and the successful Bidder, within 21 days following the date of Letter of Acceptance. The Contract Agreement shall incorporate all agreements between the Employer and the successful Bidder.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>49.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within twenty-one (21) days of receipt of the Letter of Acceptance, the successful Bidder shall (a) furnish the performance security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with ITB Clause 50 and revised construction methodology; (b) if the successful bidder is a JV, it shall also furnish the JV agreement duly signed by all the members, if it had submitted only a letter of intent to execute the JV agreement along with the bid; and (c) shall sign, date and return the Agreement to the Employer along with the documents stated at (a) and (b) above.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>50. Performance Security</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>50.1</strong> Within twenty-one (21) days of the receipt of the Letter of Acceptance from the Employer, the successful Bidder shall furnish the Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with the General Conditions of Contract, subject to ITB 41.2 (b), using for that purpose the Performance Security and ES Performance Security Forms included in Section X, Contract Forms. The performance security and if required in the BDS, the Environmental and Social (ES) Performance Security of a Joint Venture shall be in the name of the Joint Venture specifying the names of all members.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>50.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure of the successful Bidder to submit the above-mentioned Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Employer may award the Contract to the Bidder offering the next Most Advantageous Bid.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>50.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon the successful Bidder’s signing the Agreement and furnishing of the Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security pursuant to ITB Clause 50.1, the Employer shall promptly notify the name of the winning bidder to each unsuccessful bidder and shall discharge the Bid Securities of the bidders pursuant to ITB Clause 19.5 and 19.6.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>51. Adjudicator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>51.1</strong> The Employer proposes the person named in the BDS to be appointed as Adjudicator under the Contract, at the daily fee</td>
</tr>
</tbody>
</table>
specified in the BDS, plus reimbursable expenses (actual boarding, lodging, travel and other incidental expenses). If the Bidder disagrees with this proposal, the Bidder should so state in his Bid. If, in the Letter of Acceptance, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority designated in the Particular Conditions of Contract (PCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.
Section II - Bid Data Sheet (BDS)

The following specific data for the Works to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

<table>
<thead>
<tr>
<th>ITB Reference</th>
<th>A. General</th>
</tr>
</thead>
</table>
| ITB 1.1       | The number of the Request for Bids is: NCB/21/EE/PCM-DKP/TN/2021-22  
The Employer is: [UJVN Ltd, Dehradun]  
The reference number of the Request for Bids (RFB) is: NCB/21/EE/PCM-DKP/TN/2021-22  
The name of the RFB is: Replacement of Wooden Sleepers with Chequered Plates and Strengthening of Patel Bridge.  
The number and identification of lots (contracts) comprising this RFB is: NA - Single Contract |
| ITB 1.2       | The Employer shall use the e-procurement system specified in BDS 7.1. |
| ITB 2.1       | The Borrower is: Government of India.  
The sub-Borrower is UJVN Ltd. through Government of Uttarakhand  
Employer is [UJVN Ltd, Dehradun].  
Loan or Financing Agreement amount: [insert US$ equivalent]  
The name of the Project is: **Dam Rehabilitation and Improvement Project (DRIP-II)** |
| ITB 4.1       | Weather Joint Ventures are permitted: Yes  
(a) Maximum number of members in the Joint Venture (JV) shall be: 2  
(b) Place where the agreement to form JV to be registered is: **Dehradun**  
(c) A statement to the effect that all members of the joint venture shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms, shall be included in the authorization nominating a Representative or member in charge, as well as in the Bid and in the Agreement [in case of a successful bid].  
(d) The joint venture agreement should define precisely the division of assignments to each member of JV. All members of JV should have active participation in the execution during the currency of the contract. This should not be varied/modified subsequently without prior approval of the Employer. |
<p>| ITB 4.5       | A list of debarred firms and individuals is available on the Bank’s external |</p>
<table>
<thead>
<tr>
<th>ITB 4.7</th>
<th>Deleted</th>
</tr>
</thead>
</table>

## B. Contents of Bidding Document

### ITB 7.1 Electronic –Procurement System

The Employer shall use the following electronic-procurement system to manage this Bidding process:[http://uktenders.gov.in].

Requests for clarification should be received by the Employer no later than: 14 days prior to the deadline for submission of bids.

### ITB 7.4 A Pre-Bid meeting shall take place.

It will be held at office of the office of Executive Engineer, Project Civil Maintenance-Dakpathar, Dakpathar, UJVNL, dakpathar, Dehradun-248125. On date **06.12.2021** at 11:00 Hours.

### ITB 8.2 [Modify the second sentence as required based on features of e-procurement system being used. If no change is required, delete this BDS entry]

## C. Preparation of Bids

### ITB 11.2 (j) The Bidder shall submit the following additional documents in its Bid:

(i) 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; GST, PAN, EPF registration, Mark sheet/Degree of qualifying exam of Key personnel.

(ii) Contractor Registration certificate on e-procurement system as per RFB, if applicable

(iii) Code of Conduct for Contractor’s Personnel (ES):

The Bidder shall submit its Code of Conduct that will apply to Contractor’s Personnel (as defined in Sub-Clause 1 (ii) of the General Conditions of Contract), to ensure compliance with the Contractor’s Environmental and Social (ES) obligations under the Contract. The Bidder shall use for this purpose the Code of Conduct form provided in Section IV. No substantial modifications shall be made to this form, except that the Bidder may introduce additional requirements, including as necessary to take into account specific Contract issues/risks.

**Management Strategies and Implementation Plans (MSIP) to manage the (ES) risks**

The Bidder shall submit Management Strategies and Implementation Plans (MSIPs) to manage the following key Environmental and Social (ES) risks:

(i) Resource Conservation Plan (RCP)

(ii) Labour Management Plan (LMP)
| **ITB 11.3 (b)** | The following schedules shall be submitted with the bid: **Priced Bill of Quantities** |
| **ITB 11.3 (d)** | The Bidder shall submit the following additional documents in its Bid: **Nil** |
| **ITB 12** | Note for Bidders: Bidders have to submit the bids on the e-procurement portal along with the relevant required documents. For this purpose, the bidders shall fill up online, the forms that are available for online filling on the e-portal. The rest of the forms shall be downloading by the bidders and filled up. The filled-up pages shall then be scanned and uploaded on the e-procurement portal along with the scanned copies of the supporting documents. |
| **ITB 12.3** | For submission of original documents, the Employer’s address is:  
Office of the Executive Engineer  
Project Civil Maintenance- Dakpathar,  
UJVN Limited, Dakpathar District- Dehradun  
PIN/Postal Code: 248125  
Country: INDIA |
| **ITB 13.1** | Alternative Bids **shall not be** permitted. |
| **ITB 13.2** | Alternative times for completion **shall not be** permitted. |
| **ITB 13.3** | Not Applicable |
| **ITB 13.4** | Alternative technical solutions shall be permitted for the following parts of the Works: **Not Applicable** |
| **ITB 14.5** | The adjustment of contract price, if provided, will be done in accordance with GCC Clause 49 and corresponding provisions under PCC and Appendix 2 to PCC. |
| **ITB 18.1** | The Bid validity period shall be **120 days**. |
| **ITB 18.3 (a)** | The Bid price shall be adjusted by the following factor: **3% per annum**. |
| **ITB19.1** | A Bid Security **shall be** required.  
The Bidder shall furnish a Bid Security in the amount of **Rs.1,22,000/-.** |
| **ITB 19.3 (d)** | Other types of acceptable securities are:  
Fixed Deposit/Time Deposit certificate issued by a Nationalized or Scheduled Bankor Post Office located in India for equivalent or higher |
values are acceptable provided it is pledged in favour of Executive Engineer, Project Civil Maintenance – Dakpathar, UJVN Ltd., Dakpathar and such pledging has been noted and suitably endorsed by the bank issuing the certificate. 

*Online cash transfer is not accepted.*

*Letter of credit will not be accepted.*

| ITB 19.9 | Deleted |
| ITB 20.3 | The written confirmation of authorization to sign on behalf of the Bidder shall consist of:  
(a) Legally valid Power of Attorney is required to demonstrate the authority of the signatory to sign the Bid; and  
(b) In the case of Bids submitted by an existing or intended JV, if permitted as per ITB 4.1, the authorization shall be evidenced by a Power of Attorney signed by legally authorized signatories of all the members. |

**D. Online Submission and Opening of Bids**

| ITB 21.1 | Class of DSC required is:3 |
| ITB 22.1 | The deadline for uploading the Bid is: 20.12.2021 *up to 17:00 Hours* |
| ITB 24.1 | Re-submission of the bid is *Not allowed, if withdrawn* |

**E. Public Opening of Technical Parts of Bids**

| ITB 25.1 | The online Bid opening of Technical Parts of Bids shall take place at:  
Office of the Executive Engineer  
Project Civil Maintenance-Dakpathar,  
UJVN Limited, Dakpathar  
Dehradun-248125-India  
Country: INDIA  
Date: 21.12.2021  
Time: *11:00 Hours* |

**F. Evaluation of Bids – General Provisions**

| ITB 29.3 | The adjustment shall be based on the highest price of the item or component as quoted in other substantially responsive Bids, subject to a maximum of the estimated price of the item. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Employer shall use its best estimate. |

**G. Evaluation of Bids - Technical Parts**

| ITB 33.1 | At this time the Employer *does not intend* to execute certain specific parts of the Works by subcontractors selected in advance. |
ITB 33.2 | NA
---|---
**ITB 33.3** | (a) Contractor’s proposed subcontracting: Maximum percentage of subcontracting permitted is: **25% of the total contract amount**
(b) Bidders planning to subcontract more than 10% of total volume of work shall specify, in the Letter of Bid, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience. The qualification and experience of the sub-contractors must meet the minimum criteria for the relevant work to be sub-contracted failing which such sub-contractors will not be permitted to participate.
(c) Subcontractors’ qualification and experience will not be considered for evaluation of the Bidder. The Bidder on its own (without taking into account the qualification and experience of the sub-contractor) should meet the qualification criteria.

*Note-Work should not be split into small parts and sub-contracted*. 

**H. Public Opening of Financial Parts**

**ITB 34.2 (c)** | Following the completion of the evaluation of the Technical Parts of the Bids, the Employer will notify all Bidders of the date, time, and location of the public opening of Financial Parts.

The online bid opening of Financial Parts of Bids shall take place at

*Office of Executive Engineer,*

*Project Civil Maintenance-Dakpathar, Dakpathar,*

*UJVN Limited, dakpathar, Dehradun-248125 (Uttarakhand)*

Country: INDIA

Date & Time: To be informed after evaluation of technical bids through [www.http://uktenders.gov.in](http://uktenders.gov.in)

In addition to the above the Employer shall publish a notice of the public opening of the Financial Parts of the Bid on its


**I. Evaluation of Bids - Financial Parts**

**ITB40.2** | Provisions related to Abnormally Low Bids **Do Not apply**
---|---
**ITB 41.2** | Following is added.
The Employer may increase the performance security to a level sufficient to protect it against the possibility of financial loss, if the lowest evaluated bid is unbalanced.

The amount of Additional performance security shall be worked out as follows:

a. No Additional performance security for Item Rates up to 5% below the Estimated Item rate,
b. An Additional performance security of 10% of the estimated cost of items, for Item Rates from 5% to 15% below the estimated rate,
c. An Additional performance security of 15% of the estimated cost of items, for Item Rates more than 15% below the estimated rate.

Note: The Additional performance Security as applicable shall be refunded to the contractor after satisfactory completion of the works and after the payment of the final bill.

### J. Award of Contract

<table>
<thead>
<tr>
<th>ITB 50.1 and 50.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>The successful Bidder shall also be required to submit an Environmental and Social (ES) Performance Security.</td>
</tr>
<tr>
<td>Throughout this bidding document the term 'performance security', unless the context clearly indicates otherwise, means and includes both ‘the performance security and the ES performance security’ to be submitted by the successful bidder in the amounts specified in GCC/ PCC 54.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ITB 51</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Adjudicator proposed by the Employer is: _ .................(shall be appointed by the Appointing Authority of UJVNL after award).</td>
</tr>
<tr>
<td>The daily fee for this proposed Adjudicator shall be: Rs 10,000/- per day with overall payment not more than Rs 50,000/- and reimbursable expenses – boarding / lodging / travel etc as applicable to the designation as per Government of Uttarakhand, travelling allowance rules amended up to date of uploading of tenders.</td>
</tr>
<tr>
<td>The biographical data of the proposed Adjudicator is as follows:</td>
</tr>
<tr>
<td>Educational Qualification : .................</td>
</tr>
<tr>
<td>Age: _____ Years</td>
</tr>
<tr>
<td>Professional Experience : _____ Years</td>
</tr>
<tr>
<td>Nationality : Indian</td>
</tr>
<tr>
<td>Last Position Held : .................</td>
</tr>
</tbody>
</table>
Section III - Evaluation and Qualification Criteria

This section contains all the criteria that the Employer shall use to evaluate Bids and qualify Bidders through post-qualification. No other factors, methods or criteria shall be used other than specified in this bidding document. The Bidder shall provide all the information requested in the forms included in Section IV, Bidding Forms.
1. **Technical Part**

1.1 **Adequacy of Technical Proposal**

Evaluation of theBidder's Technical Proposal will include:

(i) an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, material sourcing, and quality control/assurance in sufficient detail and fully in accordance with the requirements stipulated in Section VII, Works’ Requirements.

For this purpose the Bidder should also submit:

A detailed note outlining its proposed methodology and program of construction backed with equipment, materials and manpower planning and deployment, duly supported with broad calculations and quality control system/assurance procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

(ii) an assessment of the details of subcontracting elements of works amounting to more than 10% of the bid price; for each element proposed to be sub-contracted furnish details whether the identified Sub-contractor possesses the required qualifications and experiences to execute that element satisfactorily. [Work should not be split into small parts and sub-contracted].

(iii) Bidders shall submit an undertaking from each proposed subcontractor to confirm that they have read, understand and will comply with the ES obligations and code of conduct for Contractor’s Personnel.

1.2 **Alternative Technical Solutions for specified parts of Works**

(ITB 13.4) – Not Applicable

1.3 **Specialized Subcontractors - (ITB-33) –Not Applicable**

2.1 **Qualification Criteria**

Pursuant to ITB 32.1, the Employer shall assess each Bid against the following Qualification Criteria. Requirements not included in the text below shall not be used in the evaluation of the Bidder’s qualifications.
<table>
<thead>
<tr>
<th>No.</th>
<th>Subject</th>
<th>Requirement</th>
<th>Single Entity</th>
<th>Compliance Requirements</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>All members Combined</td>
<td>Joint Venture (existing or intended) where permitted</td>
<td>Submission Requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Each Member</td>
<td>At least one Member</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Eligibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Nationality</td>
<td>Nationality in accordance with ITB 4.4</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td>1.2</td>
<td>Conflict of Interest</td>
<td>No conflicts of interest in accordance with ITB 4.2</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td>1.3</td>
<td>Bank Eligibility</td>
<td>Not having been declared ineligible by the Bank, as described in ITB 4.5</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td>1.4</td>
<td>State-owned enterprise or institution of the Borrower country</td>
<td>Meets conditions of ITB 4.6</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td>1.5</td>
<td>United Nations resolution or Borrower’s country law</td>
<td>Not having been excluded as a result of prohibition in the Borrower’s country laws or official regulations against commercial relations with the Bidder’s country, or by an act of compliance with UN Security Council resolution, both in accordance with ITB 4.8 and Section V.</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td>Eligibility and Qualification Criteria</td>
<td>Compliance Requirements</td>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-------------------------</td>
<td>---------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Subject</td>
<td>Requirement</td>
<td>Single Entity</td>
<td>Joint Venture (existing or intended) where permitted</td>
<td>Submission Requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All members Combined</td>
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<td>At least one Member</td>
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<tr>
<td>2. Historical Contract Non-Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 History of Non-Performing Contracts</td>
<td>Non-performance of a contract(^2) did not occur as a result of contractor default since 1(^{st}) January 2014</td>
<td>Must meet requirement(^2&amp;3)</td>
<td>Must meet requirements</td>
<td>Must meet requirement(^3)</td>
<td>N/A</td>
</tr>
<tr>
<td>2.2 Suspension Based on Execution of Bid/ Proposal Securing Declaration by the Employer or withdrawal of the Bid within Bid validity period</td>
<td>Not under suspension based on execution of a Bid/ Proposal Securing Declaration pursuant to ITB 4.7 or withdrawal of the Bid pursuant ITB 19.9</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>N/A</td>
</tr>
<tr>
<td>2.3 Pending Litigation</td>
<td>Bidder’s financial position and prospective long-term profitability sound</td>
<td>Must meet requirement</td>
<td>N/A</td>
<td>Must meet requirement</td>
<td>N/A</td>
</tr>
</tbody>
</table>

\(^2\) Non-performance, as decided by the Employer, shall include all contracts where (a) non-performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non-performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

\(^3\) This requirement also applies to contracts executed by the Bidder as JV member.
<table>
<thead>
<tr>
<th>No.</th>
<th>Subject</th>
<th>Requirement</th>
<th>Single Entity</th>
<th>Compliance Requirements</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Joint Venture (existing or intended) where permitted</td>
<td>Submission Requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All members Combined</td>
<td>Each Member</td>
<td>At least one Member</td>
</tr>
<tr>
<td>2.4</td>
<td>Litigation History</td>
<td>No consistent history of court/arbitral award decisions against the Bidder⁴ since 1ˢᵗ January 2014</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td>2.5</td>
<td>Declaration: Environmental and Social (ES) past performance</td>
<td>Declare any civil work contracts that have been suspended, terminated and/or performance security called by an employer for reasons of breach of environmental, or social (including Sexual Exploitation, and Assault) contractual obligations in the past Seven years⁵.</td>
<td>Must make the declaration</td>
<td>Where there are Specialized Sub-contractor/s, the Specialized Sub-contractor/s must also</td>
<td>N/A</td>
</tr>
</tbody>
</table>

⁴The Bidder shall provide accurate information on the Letter of Bid about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last seven years. A consistent history of court/arbitral awards against the Bidder or any member of a joint venture may result in disqualifying the Bidder.

⁵The Employer may use this information to seek further information or clarifications in carrying out its due diligence.
### Eligibility and Qualification Criteria

<table>
<thead>
<tr>
<th>No.</th>
<th>Subject</th>
<th>Requirement</th>
<th>Single Entity</th>
<th>Joint Venture (existing or intended) where permitted</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All members Combined</td>
<td>Each Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>make the declaration.</td>
<td>must also make the declaration.</td>
<td></td>
</tr>
</tbody>
</table>

### 3. Financial Situation and Performance

#### 3.1 Financial Capabilities

1. The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as **Rs. 12.21 Lakhs** for the subject contract(s) net of the Bidder’s other commitments.

2. The Bidders shall also demonstrate, to the satisfaction of the

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Submission Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must meet requirement</td>
<td>Must meet Requirement</td>
</tr>
<tr>
<td>Must meet at least 25% of the requirement as a minimum</td>
<td>Must meet at least 50% of the requirement as a minimum</td>
</tr>
</tbody>
</table>

---

4In case the bidder submits a letter of intent from a commercial bank with the bid, firm commitment from the bank to provide line of credit shall be required before contract signing.
<table>
<thead>
<tr>
<th>Eligibility and Qualification Criteria</th>
<th>Compliance Requirements</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Subject</td>
<td>Requirement</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments. Must meet requirement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(iii) The audited balance sheets or, if not required by the laws of the Bidder’s country, other financial statements acceptable to the Employer, for the last seven years shall be submitted and must demonstrate the current soundness of the Bidder’s financial position and indicate its prospective long-term profitability. Must meet requirement</td>
</tr>
</tbody>
</table>

**Note:** The construction cash flow requirement should be for a number of months determined as the total time needed to pay contractor invoice by the employer. The cash flow should not normally exceed 3 months peak contract requirements and availability should be certified by Bank (Nationalized or Scheduled Bank in India) in form Fin 3.3

<table>
<thead>
<tr>
<th>No.</th>
<th>Subject</th>
<th>Requirement</th>
<th>Compliance</th>
<th>Form FIN – 3.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>Average Annual Construction</td>
<td>Minimum average annual construction turnover of INR <strong>97.66</strong></td>
<td>Must meet requirement, Must meet requirement, Must meet 25%, (twenty five percent) of the requirement, Must meet 50%, (fifty percent) of the requirement</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Subject</td>
<td>Requirement</td>
<td>Single Entity</td>
<td>Joint Venture (existing or intended) where permitted</td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Turnover</td>
<td><strong>Lakhs</strong>, calculated as total certified payments received for contracts in progress and/or completed within the last seven financial years, divided by Seven years.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The amount stated should normally not be less than twice the estimated annual turnover or cash flow in the proposed Works contract (based on a straight-line projection of the Employer's estimated cost, over the contract duration).

### 4. Experience

<p>| 4.1 | General Construction Experience | Experience under construction contracts (Civil Construction/ Repair works of Dam/Barrage or Construction/ Repair of Steel Section Bridge) in the role of prime contractor, JV member, subcontractor, or management contractor for at least the last seven years, starting 1&lt;sup&gt;st&lt;/sup&gt; January 2014 | Must meet requirement | N/A | Must meet requirement | N/A | Form EXP – 4.1 |</p>
<table>
<thead>
<tr>
<th>Eligibility and Qualification Criteria</th>
<th>Compliance Requirements</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Subject</td>
<td>Requirement</td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>4.2</td>
<td>Specific Construction &amp; Contract Management Experience</td>
<td>A minimum number of one similar contract that have been satisfactorily and substantially completed as a prime contractor, joint venture member, or sub-contractor between 1st January 2014 and bid submission deadline: (1) One contract of similar work, of minimum value INR 39.06 Lakhs; or</td>
</tr>
</tbody>
</table>

---

7 Bidder should have completed at least one contract for similar work of value not less than 80% of the estimated contract value of the work for which bids are invited, during the last seven years. Cost of completed works of previous years shall be given weightage @5% per year based on rupees value to bring them to the price level of the financial year in which bids are received.
8 Substantial completion shall be based on 80% or more works completed under the contract.
9 Cost of completed works of previous years shall be given weightage @5% per year based on rupees value to bring them to the price level of the financial year in which bids are received.
10 For contracts under which the Bidder participated as a joint venture member or sub-contractor, only the Bidder’s share, by value, shall be considered to meet this requirement.
11 For contracts under which the Bidder participated as a joint venture member or sub-contractor, only the Bidder’s share, by value, shall be considered to meet this requirement.
12 In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.
<table>
<thead>
<tr>
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<td>Joint Venture (existing or intended) where permitted</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All members Combined</td>
<td>Each Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Two contracts of similar work, of minimum value INR 29.30 Lakhs; or (3) Three contracts of similar work, of minimum value INR 19.53 Lakhs. Definition of Similar work: The similarity of the contracts shall be based on the following: [Civil Construction / Repair works of Dam/Barrage or Construction/ Repair of Steel Section Bridge)</td>
<td>Must meet requirements</td>
<td>Must meet requirements</td>
<td>N/A</td>
</tr>
<tr>
<td>4.2</td>
<td>(b)</td>
<td>For the above and any other contracts [substantially completed and under implementation] as prime contractor, joint venture member, or sub-contractor between 1st January 2014 and Application</td>
<td>Must meet requirements</td>
<td>Must meet requirements</td>
<td>N/A</td>
</tr>
<tr>
<td>Eligibility and Qualification Criteria</td>
<td>Compliance Requirements</td>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
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<td></td>
</tr>
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<td>Each Member</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>submission deadline, a minimum construction experience in the following key activities successfully completed:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Civil Construction / Repair works of Dam/Barrage or Construction/ Repair of Steel Section Bridge]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2 (c) **Bid Capacity**

Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity for construction work is equal to or more than the total bid value of the work. The available bid capacity will be calculated as under:

\[
\text{Assessed Available bid capacity} = (A \times N \times 1.15 - B)
\]

Where, 
- \(A\) = Maximum value of civil engineering works executed in any one year during the last seven years (updated to the price level of the financial year 2021 at the rate of 5% per year), taking into account the completed as well as works in progress.
- \(N\) = Number of years prescribed for completion of the works for which bids are invited (period upto 6 months to be taken as half-year and more than 6 months as one year).
- \(B\) = Value, at the current price level, of existing commitments on-going works to be completed during the period of completion of the works.

---

13 The minimum experience requirement for multiple contracts will be the sum of the minimum requirements for respective individual contracts, unless specified otherwise.

14 Volume, number or rate of production of any key activity can be demonstrated in one or more contracts combined if executed during same time period.
### Eligibility and Qualification Criteria

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All members Combined</td>
<td>Each Member</td>
</tr>
</tbody>
</table>

for which bids are invited.

Note: the statements in Section IV showing the value of existing commitments of on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Project Manager, not below the rank of an Executive Engineer or equivalent.
3. **Key Personnel**

The Bidder must demonstrate that it will have suitably qualified (and in adequate numbers) minimum Key Personnel, as described in the Table below, that are required to perform the Contract.

The Bidder shall provide details of the Key Personnel and such other Key Personnel that the Bidder considers appropriate, together with their academic qualifications and work experience. The Bidder shall complete the relevant Forms in Section IV, Bidding Forms.

The Contractor shall require the Employer’s consent to substitute or replace the Key Personnel (reference the Particular Conditions of Contract 9.1).

**Key Personnel:**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Position/ specialization</th>
<th>Relevant academic qualifications</th>
<th>Minimum years of relevant work experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project Manager/ Civil Engineer- 01</td>
<td>B.Tech (Civil)</td>
<td>05</td>
</tr>
<tr>
<td>2</td>
<td>Quality Control Engineer-01</td>
<td>Diploma</td>
<td>02</td>
</tr>
<tr>
<td>3</td>
<td>Site Supervisor-01</td>
<td>Diploma/ITI</td>
<td>02</td>
</tr>
</tbody>
</table>

The Bidder must not have in his employment:

[i] the near relations (defined as first blood relations, and their spouses, of the bidder or the bidder’s spouse) of persons of the following Government Departments.

1. UJVNL Ltd, Dehradun (Uttarakhand)
2. Water Resources Planning Department

[ii] Without Government permission, any person who retired as gazetted officer within the last two years.
4. Equipment

Part A – Civil Works
The Bidder must demonstrate that it will have access to the key Contractor’s equipment listed hereafter:

<table>
<thead>
<tr>
<th>No.</th>
<th>Equipment Type and Characteristics</th>
<th>Minimum Number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Welding Machine</td>
<td>02</td>
</tr>
</tbody>
</table>

The above table demonstrates minimum machinery/equipment required for completion of the work. However, the Bidder must inspect the site on their own and shall provide further details of proposed items of equipment using the relevant Form in Section IV.

Note for Bidders: "Form for Equipment" must be prepared for each equipment. Affidavit in place of Agreement regarding availability of equipment i.e. rented/ leased/ specially manufactured is acceptable.
2. Financial Part

2.1 Margin of Preference - Not Applicable

2.2 Multiple Contracts: Not Applicable

2.3 Sustainable procurement (Section VII - Specifications) – Not Applicable

2.4 Alternative Completion Times (ITB 13.2)-Not Applicable

2.5 Alternative Technical Solutions for specified parts of the Works(ITB 13.4)- Not Applicable

2.6 Other criteria (if permitted under ITB 35.1(f)):Not Applicable
Section IV - Bidding Forms
Letter of Bid – Technical Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Bid on stationery with its letterhead clearly showing the Bidder’s complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.

Date of this Bid submission: [insert date (as day, month and year) of Bid submission]
RFB No.: [insert number of RFB process]
Alternative No.1: [insert identification No. if this is a Bid for an alternative]

To: [insert complete name of Employer]

We, the undersigned, hereby submit our Bid, in two parts, namely:

(a) the Technical Part, and
(b) the Financial Part

In submitting our Bid, we make the following declarations:

(a) No reservations: We have examined and have no reservations to the bidding document, including Addenda issued in accordance with ITB8;
(b) Eligibility: We meet the eligibility requirements and have no conflict of interest in accordance with ITB4;
(c) Bid-Securing Declaration: We have-not been suspended nor declared ineligible by the Employer based on execution of a Bid-Securing Declaration or Proposal-Securing Declaration in the Employer’s Country in accordance with ITB 4.7
(d) Conformity: We offer to execute in conformity with the bidding document the following Works: [insert a brief description of the Works]
(e) Bid Validity Period: Our Bid shall be valid for a period specified in BDS ITB 18.1 (or as amended if applicable) from the date fixed for the Bid submission deadline specified in BDS 22.1 (or as amended if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
(f) Performance Security: If our Bid is accepted, we commit to obtain a performance security [and an Environmental and Social (ES) Performance Security, Delete if not applicable] in accordance with the bidding document;

1 Delete if not applicable
(g) **One Bid Per Bidder:** We are not submitting any other Bid(s) as an individual Bidder or as a subcontractor, and were not participating in any other Bid(s) as a Joint Venture member, and meet the requirements of ITB4.3, other than alternative Bids submitted in accordance with ITB 13;

(h) **Suspension and Debarment:** We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer’s Country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(i) **State-owned enterprise or institution:** We are not a state-owned enterprise or institution/ We are a state-owned enterprise or institution but meet the requirements of ITB 4.6;

(j) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;

(k) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated cost Bid, the Most Advantageous Bid or any other Bid that you may receive; and

(l) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption; and

(m) **Adjudicator:** We accept the appointment of [insert name proposed in Bid Data Sheet] as the Adjudicator.

[or]

We do not accept the appointment of [insert name proposed in Bid Data Sheet] as the Adjudicator, and propose instead that [insert name] be appointed as Adjudicator, whose daily fees and biographical data are attached.

**Name of the Bidder:** *[insert complete name of person signing the Bid]*

**Name of the person duly authorized to sign the Bid on behalf of the Bidder:** *[insert complete name of person duly authorized to sign the Bid]*

**Title of the person signing the Bid:** [insert complete title of the person signing the Bid]

---

2 Use one of the two options as appropriate

3 In case appointment of Adjudicator was proposed from the list provided by an Institution in ITB 51, the replacement should also be proposed from the list of same institution.
Signature of the person named above: [insert signature of person whose name and capacity are shown above]

Date signed [insert date of signing] day of [insert month], [insert year]

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid
Technical Proposal

Technical Proposal Forms

- Key Personnel Schedule
- Equipment
- Site Organization
- Method Statement
- Mobilization Schedule
- Construction Schedule
- ES Management Strategies and Implementation Plans
- Code of Conduct for Contractor’s Personnel (ES)
- Sub-contracting elements or works which in aggregate adds to more than 10% of Bid price (for each the qualifications and experiences on the identified subcontractor in the relevant field should be given)

*Note*: Work should not be split into small parts and sub-contracted; but sub-contracting specialized elements of works is acceptable.

- Others
- Bidder’s Qualification
- Form of Bid Security - Bank Guarantee
- Form of Bid-Securing Declaration
Appendix to Technical Part: Personnel

Forms for Personnel

Form PER – 1: Key Personnel Schedule

Bidders should provide the names and details of the suitably qualified Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Key Personnel

<table>
<thead>
<tr>
<th></th>
<th>Title of position:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name of candidate:</td>
</tr>
<tr>
<td><strong>Duration of appointment:</strong></td>
<td>[insert the whole period (start and end dates) for which this position will be engaged]</td>
</tr>
<tr>
<td><strong>Time commitment: for this position:</strong></td>
<td>[insert the number of days/week/months/ that has been scheduled for this position]</td>
</tr>
<tr>
<td><strong>Expected time schedule for this position:</strong></td>
<td>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Title of position:</th>
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</thead>
<tbody>
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<td><strong>Expected time schedule for this position:</strong></td>
<td>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</td>
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<td>[insert the number of days/week/months/ that has been scheduled for this position]</td>
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<tr>
<td><strong>Expected time schedule for this position:</strong></td>
<td>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</td>
</tr>
<tr>
<td>Expected time schedule for this position:</td>
<td>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>

4. Title of position:  
Name of candidate:  
Duration of appointment:  [insert the whole period (start and end dates) for which this position will be engaged]  
Time commitment: for this position:  [insert the number of days/week/months/ that has been scheduled for this position]  
Expected time schedule for this position:  [insert the expected time schedule for this position (e.g. attach high level Gantt chart)]  

5. Title of position:  
[Where a Project SEA risks are assessed to be high, Key Personnel shall include a gender-based violence expert with relevant experience in addressing sexual exploitation, and assault cases]  
Name of candidate:  
Duration of appointment:  [insert the whole period (start and end dates) for which this position will be engaged]  
Time commitment: for this position:  [insert the number of days/week/months/ that has been scheduled for this position]  
Expected time schedule for this position:  [insert the expected time schedule for this position (e.g. attach high level Gantt chart)]  

6. Title of position:  
Name of candidate  
Duration of appointment:  [insert the whole period (start and end dates) for which this position will be engaged]  
Time commitment: for this position:  [insert the number of days/week/months/ that has been scheduled for this position]  
Expected time schedule for this position:  [insert the expected time schedule for this position (e.g. attach high level Gantt chart)]
Appendix to Technical Part

Form PER-2:

Resume and Declaration

Key Personnel

<table>
<thead>
<tr>
<th>Name of Bidder</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Position [#1]: [title of position from Form PER-1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel information</td>
</tr>
<tr>
<td>Address:</td>
</tr>
</tbody>
</table>

| Professional qualifications: |
| Academic qualifications: |

**Language proficiency:** [language and levels of speaking, reading and writing skills]

<table>
<thead>
<tr>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address of employer:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Telephone:</th>
<th>Contact (manager / personnel officer):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job title:</th>
<th>Years with present employer:</th>
</tr>
</thead>
</table>

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.
<table>
<thead>
<tr>
<th>Project</th>
<th>Role</th>
<th>Duration of involvement [From - To]</th>
<th>Relevant experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>[main project details]</td>
<td>[role and responsibilities on the project]</td>
<td>[time in role]</td>
<td>[describe the experience relevant to this position]</td>
</tr>
</tbody>
</table>

**Declaration**

I, the undersigned Key Personnel, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Bid:

<table>
<thead>
<tr>
<th>Commitment</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commitment to duration of contract:</strong></td>
<td>[insert period (start and end dates) for which this Key Personnel is available to work on this contract]</td>
</tr>
<tr>
<td><strong>Time commitment:</strong></td>
<td>[insert the number of days/week/months/ that this Key Personnel will be engaged]</td>
</tr>
</tbody>
</table>

I understand that any misrepresentation or omission in this Form may:

(a) be taken into consideration during Bid evaluation;

(b) result in my disqualification from participating in the Bid;

(c) result in my dismissal from the contract.

**Name of Key Personnel:** [insert name]

Signature: __________________________________________________________________________

Date: (day month year): __________________________________________________________________

**Countersignature of authorized representative of the Bidder:**

Signature: __________________________________________________________________________

Date: (day month year): __________________________________________________________________
The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III (Evaluation and Qualification Criteria). A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder. The Bidder shall provide all the information requested below, to the extent possible. Fields with asterisk (*) shall be used for evaluation.

<table>
<thead>
<tr>
<th>Type of Equipment*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Information</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Current Status</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Source</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The following information shall be provided only for equipment not owned by the Bidder.

<table>
<thead>
<tr>
<th>Owner</th>
<th>Name of owner</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Address of owner</td>
</tr>
<tr>
<td></td>
<td>Telephone Contact name and title</td>
</tr>
<tr>
<td></td>
<td>Fax Telex</td>
</tr>
<tr>
<td>Agreements</td>
<td>Details of rental / lease / manufacture agreements specific to the project</td>
</tr>
</tbody>
</table>
Appendix to Technical Part

Site Organization

[insert Site Organization information]
Appendix to Technical Part

Method Statement

insert method Statement – A detailed note should be submitted outlining bidders proposed methodology and program of construction including Contractor’s Environmental and Social, Health Management Strategies and Implementation Plans (ES-MSIP), backed with equipment, materials and manpower planning and deployment, duly supported with broad calculations and quality control system/assurance procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones]
Appendix to Technical Part

Mobilization Schedule

[Insert Mobilization Schedule]

In accordance with the Particular Conditions, Sub-Clause 16.2, the Contractor shall not carry out mobilization to Site unless the Project manager gives consent that appropriate measures are in place to address environmental and social risks and impacts, which as a minimum shall include applying the Management Strategies and Implementation Plans (MSIPs) and Code of Conduct for Contractor’s Personnel, submitted as part of the Bid and agreed as part of the Contract.
Appendix to Technical Part

Construction Schedule

[insert Construction Schedule]

The construction schedule shall include the following key milestone–Schedule for preparation of C-ESMP as per the framework given in ESMP, in accordance with the Particular Conditions of ContractSub-Clause 16.2.
Appendix to Technical Part

ES Management Strategies and Implementation Plans

(ES-MSIP)

The Bidder shall submit comprehensive and concise Environmental and Social Management Strategies and Implementation Plans (ES-MSIP) as required by ITB 11.2 (j) of the Bid Data Sheet. These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.

In developing these strategies and plans, the Bidder shall have regard to the ES provisions of the contract including those as may be more fully described in the Works Requirements in Section VII.

CODE OF CONDUCT FOR CONTRACTOR'S PERSONNEL

We are the Contractor, [enter name of Contractor]. We have signed a contract with [enter name of Employer] for [enter description of the Works]. These Works will be carried out at [enter the Site and other locations where the Works will be carried out]. Our contract requires us to implement measures to address environmental and social risks related to the Works, including the risks of sexual exploitation and assault and gender-based violence.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Works. It applies to all our staff, labourers and other employees at the Works Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as “Contractor’s Personnel” and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractors’ Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

Contractor’s Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor’s Personnel and any other person;
3. maintain a safe working environment including by:
   a. ensuring that workplaces, machinery, equipment and processes under each person’s control are safe and without risk to health;
   b. wearing required personal protective equipment;
c. using appropriate measures relating to chemical, physical and biological substances and agents; and

d. following applicable emergency operating procedures.

4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;

5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;

6. not engage in any form of sexual harassment including unwelcome sexual advances, requests for sexual favors, and other unwanted verbal or physical conduct of a sexual nature with other Contractor’s or Employer’s Personnel;

7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. In Bank financed projects, sexual exploitation occurs when access to or benefit from Bank financed Goods, Works, Consulting or Non-consulting services is used to extract sexual gain;

8. not engage in Sexual Assault, which means sexual activity with another person who does not consent. It is a violation of bodily integrity and sexual autonomy and is broader than narrower conceptions of “rape”, especially because (a) it may be committed by other means than force or violence, and (b) it does not necessarily entail penetration.

9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;

10. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation, and Assault (SEA);

11. report violations of this Code of Conduct; and

12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the [Project Grievance [Redress] Mechanism].

RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [enter name of the Contractor’s Social Expert with relevant experience in handling gender-based violence, or if such person is not required under the Contract, another individual designated by the Contractor to handle these matters] in writing at this address [ ] or by telephone at [ ] or in person at [ ]; or

2. Call [ ] to reach the Contractor’s hotline (if any) and leave a message.
The person’s identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

**CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT**

Any violation of this Code of Conduct by Contractor’s Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

**FOR CONTRACTOR’S PERSONNEL:**

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [enter name of Contractor’s contact person with relevant experience in handling gender-based violence] requesting an explanation.

Name of Contractor’s Personnel: [insert name]

Signature: __________________________________________________________

Date: (day month year): ______________________________________________

Countersignature of authorized representative of the Contractor:

Signature: __________________________________________________________

Date: (day month year): ______________________________________________
### Appendix to Technical Part

#### Sub-Contracting

**SCHEDULE OF SUBCONTRACTORS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Element of work</th>
<th>% of bid price</th>
<th>Name and address of sub-contractor</th>
<th>Qualification and experience of sub-contractor on similar works of the elements executed</th>
</tr>
</thead>
</table>

The Bidder shall enter in this schedule a list of the major sections and appropriate value of the work for which he proposed to use subcontractors [for those costing more than 10% of the bid price for each element], together with the names, addresses and experiences of the proposed subcontractors.

The capability of the sub-contractor will also be assessed (on the same lines as for the main Contractor) before according approval to him.

*(Work should not be split into small parts and sub-contracted; but sub-contracting specialized elements of works is acceptable).*
Appendix to Technical Part

Others
Appendix to Technical Part

Bidder’s Qualification

To establish its qualifications to perform the contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.
# Appendix to Technical Part

## Form ELI -1.1: Bidder Information Form

<table>
<thead>
<tr>
<th>Date: ___________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFB No. and title: __________</td>
</tr>
<tr>
<td>Page ______ of __________ pages</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bidder's legal name</th>
</tr>
</thead>
</table>

In case of Joint Venture (JV), legal name of each member:

<table>
<thead>
<tr>
<th>Bidder's actual or intended country of registration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[indicate country of Constitution]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bidder's actual or intended year of incorporation:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Bidder's legal address [in country of registration]:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Bidder's authorized representative information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: __________________________________________</td>
</tr>
<tr>
<td>Address: _________________________________________</td>
</tr>
<tr>
<td>Telephone/Fax numbers: __________________________</td>
</tr>
<tr>
<td>E-mail address: _________________________________</td>
</tr>
</tbody>
</table>

1. Attached are copies of original documents of
   - Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.4.
   - Authorization to represent the firm or JV named in above, in accordance with ITB 20.
   - In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1.
   - In case of state-owned enterprise or institution, in accordance with ITB 4.6 documents establishing:
     - Legal and financial autonomy
     - Operation under commercial law
     - Establishing that the Bidder is not under the supervision of the Employer

2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.
Appendix to Technical Part
Form EL1 -1.2: Information Form for JV Bidders
(Where permitted as per BDS ITB 4.1)
(to be completed for each member of Joint Venture)

Date: _______________
RFB No. and title: _______________
Page _______________ of _______________ pages

<table>
<thead>
<tr>
<th>JV Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidder’s Joint Venture legal name:</td>
</tr>
<tr>
<td>JV member’s legal name:</td>
</tr>
<tr>
<td>JV member’s country of registration:</td>
</tr>
<tr>
<td>JV member’s year of constitution:</td>
</tr>
<tr>
<td>JV member’s legal address in country of constitution:</td>
</tr>
<tr>
<td>JV member’s authorized representative information</td>
</tr>
<tr>
<td>Name: ____________________________________</td>
</tr>
<tr>
<td>Address: __________________________________</td>
</tr>
<tr>
<td>Telephone/Fax numbers: _____________________</td>
</tr>
<tr>
<td>E-mail address: _____________________________</td>
</tr>
</tbody>
</table>

1. Attached are copies of original documents of
   - Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4.
   - Authorization to represent the firm or JV named in above, in accordance with ITB 20.
   - In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and is not under the supervision of the Employer, in accordance with ITB 4.6.

2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.
### Specialized Subcontractor’s Information Form
(to be completed for each Specialized Subcontractor)

<table>
<thead>
<tr>
<th>Field</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>_______________</td>
</tr>
<tr>
<td>RFB No. and title</td>
<td>_______________</td>
</tr>
<tr>
<td>Page of pages</td>
<td>_______________ of __________ pages</td>
</tr>
</tbody>
</table>

Bidder’s legal name:

| Specialized Subcontractor’s legal name: |

| Specialized Subcontractor’s country of registration: |

| Specialized Subcontractor’s year of constitution: |

| Specialized Subcontractor’s legal address in country of constitution: |

| Specialized Subcontractor’s authorized representative information |
| Name: ____________________________ |
| Address: ____________________________ |
| Telephone/Fax numbers: ____________________________ |
| E-mail address: ____________________________ |

Attached are copies of original documents of

- Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4.

- Authorization to represent the Specialized Subcontractor.
## Appendix to Technical Part

### DETAILS OF PARTICIPATION IN THE JOINT VENTURE

<table>
<thead>
<tr>
<th>PARTICIPATION DETAILS</th>
<th>FIRM ‘A’ (Lead Member)</th>
<th>FIRM ‘B’</th>
<th>FIRM ‘C’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of the Banker(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key Personnel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Execution of Work (Give details on proposed contribution of each)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Joint Venture should indicate the details of participation as above.
Appendix to Technical Part

Form CON – 2: Historical Contract Non-Performance, Pending Litigation and Litigation History

[to be completed for the Bidder and for each member of a Joint Venture]

Bidder’s Name: ____________________

Date: ________________________

Joint Venture Member’s Name ___________________________

RFB No. and title: ________________________________

Page __________________ of ______________ pages

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-performed portion of contract</th>
<th>Contract Identification</th>
<th>Total Contract Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[insert year]</td>
<td>[insert amount and percentage]</td>
<td>Contract Identification: [indicate complete contract name/ number, and any other identification]</td>
<td>[insert amount]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer: [insert full name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address of Employer: [insert street/city/country]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reason(s) for non-performance: [indicate main reason(s)]</td>
<td></td>
</tr>
</tbody>
</table>

Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria

☐ No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3.

☐ Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.
<table>
<thead>
<tr>
<th>Year of dispute</th>
<th>Amount in dispute (Rs.)</th>
<th>Contract Identification</th>
<th>Total Contract Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[insert year]</td>
<td>[insert amount]</td>
<td>Contract Identification: [indicate complete contract name, number, and any other identification] Name of Employer: [insert full name] Address of Employer: [insert street/city/country] Matter in dispute: [indicate main issues in dispute] Party who initiated the dispute: [indicate “Employer” or “Contractor”] Status of dispute: [Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]</td>
<td>[insert amount]</td>
</tr>
<tr>
<td>[insert year]</td>
<td>[insert amount]</td>
<td>Contract Identification: [indicate complete contract name, number, and any other identification] Name of Employer: [insert full name] Address of Employer: [insert street/city/country] Matter in dispute: [indicate main issues in dispute] Party who initiated the dispute: [indicate “Employer” or “Contractor”] Status of dispute: [Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]</td>
<td>[insert amount]</td>
</tr>
</tbody>
</table>

Litigation History in accordance with Section III, Evaluation and Qualification Criteria

- No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4.
- Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.
<table>
<thead>
<tr>
<th>Year of award</th>
<th>Outcome as percentage of Net Worth</th>
<th>Contract Identification</th>
<th>Total Contract Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[insert year]</td>
<td>[insert percentage]</td>
<td>Contract Identification: [indicate complete contract name, number, and any other identification]</td>
<td>[insert amount]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer: [insert full name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address of Employer: [insert street/city/country]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matter in dispute: [indicate main issues in dispute]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Party who initiated the dispute: [indicate “Employer” or “Contractor”]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reason(s) for Litigation and award decision [indicate main reason(s)]</td>
<td></td>
</tr>
</tbody>
</table>
# Appendix to Technical Part

**Form CON – 3: Environmental and Social Performance Declaration**

[The following table shall be filled in for the Bidder, each member of a Joint Venture and each Specialized Subcontractor]

Bidder’s Name: ___________ [insert full name]
Date: ______________ [insert day, month, year]
Joint Venture Member’s or Specialized Subcontractor’s Name: ________ [insert full name]
RFB No. and title: _________________ [insert RFB number and title]
Page ________ [insert page number] of ________ [insert page number] pages

<table>
<thead>
<tr>
<th>No suspension or termination of contract: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental or Social (ES) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declaration of suspension or termination of contract: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental or Social (ES) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.5. Details are described below:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Suspended or terminated portion of contract</th>
<th>Contract Identification</th>
<th>Total Contract Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[insert year]</td>
<td>[insert amount and percentage]</td>
<td>Contract Identification: [indicate complete contract name/ number, and any other identification]</td>
<td>[insert amount]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer: [insert full name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address of Employer: [insert street/city/country]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reason(s) for suspension or termination: [indicate main reason(s)] e.g. for gender-based violence; sexual exploitation or assault breaches</td>
<td></td>
</tr>
<tr>
<td>[insert year]</td>
<td>[insert amount and percentage]</td>
<td>Contract Identification: [indicate complete contract name/ number, and any other identification]</td>
<td>[insert amount]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer: [insert full name]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address of Employer: [insert street/city/country]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reason(s) for suspension or termination: [indicate main reason(s)]</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>Contract Identification</td>
<td>Total Contract Amount (Rs.)</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------</td>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td>[insert year]</td>
<td>Contract Identification: [indicate complete contract name/ number, and any other identification]</td>
<td></td>
<td>[insert amount]</td>
</tr>
<tr>
<td></td>
<td>Name of Employer: [insert full name]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Address of Employer: [insert street/city/country]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reason(s) for calling of performance security: [indicate main reason(s) e.g. for gender-based violence; sexual exploitation or assault breaches]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix to Technical Part

Form CCC: Current Contract Commitments / Works in Progress

Bidders and each member of a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

(A) Existing commitments and on-going works:

<table>
<thead>
<tr>
<th>Description of Work</th>
<th>Place &amp; State</th>
<th>Contract No. &amp; Date</th>
<th>Name and Address of Employer</th>
<th>Value of Contract (Rs. equivalent in million)</th>
<th>Stipulated period of completion</th>
<th>Value of works(^1) remaining to be completed (Rs. equivalent in million)</th>
<th>Anticipated date of completion</th>
<th>Average Monthly Invoicing Over Last Six Months (Rs./month Equivalent in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
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</tr>
</tbody>
</table>

(B) Works for which bids already submitted and likely to be awarded – expected additional commitment.

\(^1\) *Attach certificate(s) from the Engineer(s)-in-Charge.*
<table>
<thead>
<tr>
<th>Description of Work</th>
<th>Place &amp; State</th>
<th>Name and Address of Employer</th>
<th>Estimated value of Works (Rs. equivalent in million)</th>
<th>Stipulated period of completion</th>
<th>Date when decision is expected</th>
<th>Remarks, if any</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
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</tr>
</tbody>
</table>
Appendix to Technical Part

Form FIN – 3.1: Financial Situation and Performance

[To be completed by the Bidder and by each member of a Joint Venture]

Bidder’s Legal Name: ______________________
Date: ______________________
Joint Venture Member’s Legal Name: ______________________
RFB No. and title: ______________________
Page: ___________ of ___________ pages

1. Financial data

<table>
<thead>
<tr>
<th>Type of Financial information in (Rs.)</th>
<th>Historic information for previous years, (amount in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>Statement of Financial Position (Information from Balance Sheet)</td>
<td></td>
</tr>
<tr>
<td>Total Assets (TA)</td>
<td></td>
</tr>
<tr>
<td>Total Liabilities (TL)</td>
<td></td>
</tr>
<tr>
<td>Total Equity/Net Worth (NW)</td>
<td></td>
</tr>
<tr>
<td>Current Assets (CA)</td>
<td></td>
</tr>
<tr>
<td>Current Liabilities (CL)</td>
<td></td>
</tr>
<tr>
<td>Working Capital (WC)</td>
<td></td>
</tr>
<tr>
<td>Information from Income Statement</td>
<td></td>
</tr>
<tr>
<td>Total Revenue (TR)</td>
<td></td>
</tr>
<tr>
<td>Profits Before Taxes (PBT)</td>
<td></td>
</tr>
<tr>
<td>Cash Flow Information</td>
<td>Cash Flow from Operating Activities</td>
</tr>
</tbody>
</table>

This information should be extracted from the Annual Financial Statements/Balancesheets, which should be enclosed. Year 1 will be the latest year for which audited financial statements are available. Year 2 shall be the year immediately preceding Year 1 and year 3 shall be the year immediately preceding Year 2.
2. Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

<table>
<thead>
<tr>
<th>No.</th>
<th>Source of finance</th>
<th>Amount (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Financial documents

The Bidder and its parties shall provide copies of financial statements for _______ years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.2. The financial statements shall:

(a) reflect the financial situation of the Bidder or in case of JV member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements¹(balance sheets, including all related notes, and income statements) for the ____________ years required above; and complying with the requirements.

¹ If the most recent set of financial statements is for a period earlier than 12 months from the date of bid, the reason for this should be justified.
### Appendix to Technical Part

**Form FIN - 3.2: Average Annual Construction Turnover**

*To be completed by the Bidder and by each member of a Joint Venture*

Bidder’s Legal Name: ______________________
Date: ______________________

Joint Venture Member’s Legal Name: ______________________
RFB No. and title: ______________________
Page ______________ of ______________ pages

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount in Rs</th>
</tr>
</thead>
<tbody>
<tr>
<td>[indicate year]</td>
<td>[insert amount]</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average Annual Construction Turnover *</th>
</tr>
</thead>
</table>

* See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2. Annual construction turnover calculated as total certified payments received for work in progress or completed, for 7 years. This should be certified by a Chartered Accountant.
Appendix to Technical Part
JOINT VENTURE
(Where permitted under ITB 4.1)

Names of all members of a joint venture

1. Member in charge

2. Member

3. Member

Total value of annual construction turnover, in terms of work billed to clients, in Rupees

<table>
<thead>
<tr>
<th>Member</th>
<th>Form 2 page no.</th>
<th>Year 1</th>
<th>Year 2</th>
<th>…..</th>
<th>…..</th>
<th>Year7</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Member in charge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Member</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TOTALS</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* To be certified by a chartered accountant

Name and address of Bankers to the Joint Venture
Provide details regarding financial responsibility and participation (percentage share in the total) of each firm in the Joint Venture. Attach a Memorandum of Understanding for the Proposed Agreement of joint Venture which should lay down responsibility regarding work
and financial arrangements in respect of each of the firm in the Joint Venture (Refer also ITB Clause 4.1).
Appendix to Technical Part

Form FIN - 3.3: Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as specified in Section III, Evaluation and Qualification Criteria.

<table>
<thead>
<tr>
<th>Source of financing</th>
<th>Amount (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CASH FLOW

[To be given from a Nationalized or Scheduled Bank in India]

Clause 3.1(ii) of Section III – Qualification Criteria

(1) AVAILABILITY OF CASH FLOW (WORKING CAPITAL)

This is to certify that M/s. ______________________________ is a reputed company with a good financial standing.

If the contract for the works, namely _____________________________________ [funded by the World Bank] is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. equivalent ______ to meet their capital requirements for executing the above contract.

-- Sd. --

Name of Bank Manager

Senior Bank Manager

Address of the Bank
* Change the text as follows for Joint venture:

This is to certify that M/s. ………………………………. who has formed a JV with M/s. …………………………….. and M/s. …………………………….. for participating in this bid, is a reputed company with a good financial standing.

If the contract for the work, namely ………………………………………………………… [funded by the World Bank] is awarded to the above Joint Venture, we shall be able to provide overdraft/credit facilities to the extent of Rs. …………… to meet the working capital requirements for executing the above contract.

[This should be given by the JV members in proportion to their financial participation.]
**Appendix to Technical Part**

**Form EXP - 4.1: General Construction Experience**

*The following table shall be filled in for the Bidder and for each member of a Joint Venture*

<table>
<thead>
<tr>
<th>Bidder’s Legal Name: ____________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: ____________________</td>
</tr>
<tr>
<td>Joint Venture Member’s Legal Name: ____________________</td>
</tr>
<tr>
<td>RFB No. and title: ____________________</td>
</tr>
<tr>
<td>Page __________ of __________ pages</td>
</tr>
</tbody>
</table>

*Identify contracts that demonstrate continuous construction work over the past [7] years pursuant to Section III, Qualification Criteria and Requirements, Sub-Factor 4.1. List contracts chronologically, according to their commencement (starting) dates.*

<table>
<thead>
<tr>
<th>Starting Month/Year</th>
<th>Ending Month/Year</th>
<th>Contract Identification</th>
<th>Role of Bidder</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(“Contractor” or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Subcontractor”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Contract</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Manager”)</td>
</tr>
</tbody>
</table>

Contract name:
Brief Description of the Works performed by the Bidder: ____________________
Amount of contract: ____________________
Name of Employer: ____________________
Address: ____________________

Contract name:
Brief Description of the Works performed by the Bidder: ____________________
Amount of contract: ____________________
Name of Employer: ____________________
Address: ____________________

Contract name:
Brief Description of the Works performed by the Bidder: ____________________
Amount of contract: ____________________
Name of Employer: ____________________
Address: ____________________

Contract name:
Brief Description of the Works performed by the Bidder: ____________________
Amount of contract: ____________________
Name of Employer: ____________________
Address: ____________________
Appendix to Technical Part

Form EXP - 4.2(a): Specific Construction and Contract Management Experience

[The following table shall be filled in for contracts performed by the Bidder, each member of a Joint Venture, and specialist sub-contractors]

Bidder’s Legal Name: ___________________
Date: ____________________
Joint Venture Member’s Legal Name: ___________________
RFB No. and title: ___________________
Page __________ of __________ pages

Work performed as prime Contractor or Sub-Contractor or Management Contractor (in the same name and style) on construction works of a similar nature and volume over the last seven years. [Attach certificate from the Project Manager.]

<table>
<thead>
<tr>
<th>Similar Contract No.</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Identification</td>
<td></td>
</tr>
<tr>
<td>Award date</td>
<td></td>
</tr>
<tr>
<td>Completion date</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role in Contract</th>
<th>Prime Contractor</th>
<th>Member in JV</th>
<th>Management Contractor</th>
<th>Sub-contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Total Contract Amount | Rs *

If member in a JV or subcontractor, specify participation in total Contract amount

Employer's Name:
Address:
Telephone/fax number
E-mail:

---

2Immediately preceding the financial year in which bids are received.
Specific Construction and Contract Management Experience (cont.)

<table>
<thead>
<tr>
<th>Similar Contract No.</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:</td>
<td></td>
</tr>
<tr>
<td>1. Amount</td>
<td></td>
</tr>
<tr>
<td>2. Physical size of required works items</td>
<td></td>
</tr>
<tr>
<td>3. Complexity</td>
<td></td>
</tr>
<tr>
<td>4. Methods/Technology</td>
<td></td>
</tr>
<tr>
<td>5. Construction rate for key activities</td>
<td></td>
</tr>
<tr>
<td>6. Other Characteristics</td>
<td></td>
</tr>
</tbody>
</table>
Appendix to Technical Part

Form EXP - 4.2(b): Construction Experience in Key Activities

Bidder’s Legal Name: ______________________
Date: ______________________
Joint Venture Member’s Legal Name: ______________________
Subcontractor's Legal Name\(^3\) (as per ITB 33.2 and 33.3): ______________________

RFB No. and title: ______________________
Page ______ of _______ pages

Subcontractor's Name (as per ITB 33.2 and 33.3): ______________________

All subcontractors for key activities must complete the information in this form as per ITB33.2 and 33.3 and Section III, Qualification Criteria and Requirements, Sub-Factor 4.2.

1. Key Activity No One: ______________________

<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contract Identification</strong></td>
</tr>
<tr>
<td><strong>Award date</strong></td>
</tr>
<tr>
<td><strong>Completion date</strong></td>
</tr>
<tr>
<td><strong>Role in Contract</strong></td>
</tr>
<tr>
<td><strong>Total Contract Amount</strong></td>
</tr>
<tr>
<td><strong>Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year in the last 7 years</strong></td>
</tr>
<tr>
<td>Year 1</td>
</tr>
<tr>
<td>Year 2</td>
</tr>
<tr>
<td>Year 3</td>
</tr>
<tr>
<td>Year 4</td>
</tr>
<tr>
<td>Year 5</td>
</tr>
<tr>
<td>Year 6</td>
</tr>
<tr>
<td>Year 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employer’s Name(^4):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address:</strong></td>
</tr>
<tr>
<td><strong>Telephone/fax number</strong></td>
</tr>
</tbody>
</table>

\(^3\) If applicable.

\(^4\) Attach certificate from the Project Manager
### Information

<table>
<thead>
<tr>
<th>Employer’s Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Telephone/fax number</td>
<td></td>
</tr>
<tr>
<td>E-mail:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information</th>
<th>Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:</th>
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</thead>
<tbody>
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</tr>
</tbody>
</table>

2. Activity No. Two
3. .....................
Appendix to Technical Part

(Name of the Project)

(Declaration regarding tax/duty exemption for materials/construction equipment bought for the work)

(Bidder’s Name and Address)

To: ………………………
(Name of the Employer& address)

Dear Sir:

Re: [Name of Work]……………………
Certificate for Import/Procurement of Goods/Construction Equipment
Government Order/Circular Number under which tax/duty Exemption is being sought: …

1. We confirm that we are solely responsible for obtaining tax/duty waivers which we have considered in our bid and in case of failure to receive such waivers for reasons whatsoever, the employer will not compensate us.

2. We are furnishing below the information required by the Employer for issue of the necessary certificates in terms of the Government of India’s relevant Notifications.

3. The goods/construction equipment for which certificates are required are as under:

<table>
<thead>
<tr>
<th>Items (modify the list suitably for each specific work)*</th>
<th>Make/ Brand Name</th>
<th>Capacity [where applicable]</th>
<th>Quantity</th>
<th>Value</th>
<th>State whether it will be procured locally or imported [if so from which country]</th>
<th>Remarks regarding justification for the quantity and their usage in works.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[a] Bitumen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[b] Cement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[c] Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. We agree that no modification to the above list is permitted after bids are opened.
5. We agree that the certificate will be issued only to the extent considered reasonable by the Employer for the work, based on the Bill of Quantities and the construction program and methodology as furnished by us along with the bid.

6. We confirm that the above goods and construction equipment will be exclusively used for the construction of the above work and the construction equipment will not be sold or otherwise disposed of in any manner for a period of Seven years from the date of acquisition.

[This certificate will be issued within 60 days of signing of contract and no subsequent changes will be permitted.]

*Modify the above to suit the requirements given in Government of India’s Notifications as current of date of bidding.*
Appendix to Technical Part: Bid Security

Form of Bid Security - Bank Guarantee (If Applicable)
[Guarantor letterhead or SWIFT identifier code]

Bank Guarantee No…………………..[insert guarantee reference number]
Date………………………….[insert date of issue of the guarantee]

WHEREAS, ________________ [name of Bidder] (hereinafter called "the Applicant") has submitted his Bid dated __________________ [date] or will submit his Bid for the construction of ______________________________________ [name of Contract] (hereinafter called "the Bid") under Request for Bids No……………………….[insert number] (hereinafter called “the RFB”)

KNOW ALL PEOPLE by these presents that We ______________________________ [name of bank] of ____________________________ [name of country] having our registered office at ___________________________________ (hereinafter called "the Bank") are bound unto ______________________________[name of Employer] (hereinafter called "the Employer") in the sum of ___________________ for which payment well and truly to be made to the said Employer the Bank binds itself, 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 after Bid opening the Applicant (a) withdraws his bid during the period of Bid validity specified in the Letter of Bid, (“the Bid Validity Period”); or (b) does not accept the correction of the Bid Price pursuant to ITB36;

Or

(2) If the Applicant having been notified of the acceptance of his bid by the Employer during the period of Bid validity:

5Insert name of the Bidder, which in the case of a joint venture shall be (a) the name of the joint venture that submits the bid if the JV has been constituted into a legally enforceable JV, or (b) the names of all future members of the JV as named in the letter of intent to execute the JV Agreement submitted by the bidder alongwith its bid.

6The Applicant should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 19.1 of the Instructions to Bidders.
(a) fails or refuses to execute the Contract Agreement in accordance with the Instructions to Bidders, if required; or

(b) fails or refuses to furnish the Performance Security and if required, the Environmental and Social (ES) Performance Security, in accordance with the Instruction to Bidders.

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

This Guarantee will remain in force up to and including the date 7 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]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

7 45 days after the end of the validity period of the Bid.
Appendix to Technical Part

Affidavit regarding correctness of information provided
(To be produced on Rs 100/- Stamp paper and duly Notarized)
(to be Produced for each member of Joint Venture separately)

To: ………………….. 
(Name of the Employer & address)

Dear Sir:

Re: [Name of Work]……………………………………………………………….

The documents attached/information provided by us for the aforesaid work in technical part are as follows :-

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Information/Documents attached</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

(1) We confirm that we are solely responsible for trueness and correctness of the all certificates/documents and information provided by us for above mentioned work.

Authorized Signatory……………………………
Name

………………………………………………
For M/S
Address

……………………………………………
Date :-

[ Notary ]

We hereby do solemnly affirm with oath that the all information and certificates/documents provided by us in the above mentioned work are absolutely true and correct to the best of our knowledge and we are wholly responsible for all information and certificates/documents provided.
Authorized
Name
For M/S
Address

[ Notary]

Date :-
Letter of Bid - Financial Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Bid on stationery with its letterhead clearly showing the Bidder’s complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.

Date of this Bid submission: [insert date (as day, month and year) of Bid submission]
Request for Bid No.: [insert identification]
Alternative No. 8: [insert identification No if this is a Bid for an alternative]

To: [insert complete name of Employer]

We, the undersigned, hereby submit the second part of our Bid, the Bid Price and Bill of Quantities. This accompanies the Letter of Bid - Technical Part.

In submitting our Bid, we make the following additional declarations:

(a) Bid Validity Period: Our Bid shall be valid for a period specified in BDS 18.1 (or as amended if applicable) from the date fixed for the Bid submission deadline specified in BDS 22.1 (or as amended if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(b) Bid Price: The total price of our Bid, excluding any discounts offered in item (c) below is: [Insert one of the options below as appropriate]

[Option 1, in case of one lot:] Total price is: [insert the total price of the Bid in Rs. in words and figures];

Or

[Option 2, in case of multiple lots:] (a) Total price of each lot [insert the total price of each lot in Rs. in words and figures]; and (b) Total price of all lots (sum of all lots) [insert the total price of all lots in Rs. words and figures];

(c) Discounts: The discounts offered and the methodology for their application are:

(i) The discounts offered are: [Specify in detail each discount offered]

8Delete if not applicable
(ii) The exact method of calculations to determine the net price after application of discounts is shown below: [Specify in detail the method that shall be used to apply the discounts];

(d) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the Bidding process or execution of the Contract: [insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity].

<table>
<thead>
<tr>
<th>Name of Recipient</th>
<th>Address</th>
<th>Reason</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(If none has been paid or is to be paid, indicate “none.”)

**Name of the Bidder:** [insert complete name of person signing the Bid]

**Name of the person duly authorized to sign the Bid on behalf of the Bidder:** [insert complete name of person duly authorized to sign the Bid]

**Title of the person signing the Bid:** [insert complete title of the person signing the Bid]

**Signature of the person named above:** [insert signature of person whose name and capacity are shown above]

**Date signed** [insert date of signing] day of [insert month], [insert year]

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules
Appendix to Financial Part: Schedules
Sub-contracting

SCHEDULE OF SUBCONTRACTORS

[Note: Entries in this Schedule shall be the same as included in the same Schedule in the technical part of the bid, except for the column on ‘Approximate value of subcontract’ added in the table below]

<table>
<thead>
<tr>
<th>Item</th>
<th>Element of work</th>
<th>Approximate value of subcontract</th>
<th>% of bid price</th>
<th>Name and address of subcontractor</th>
<th>Qualification and experience of subcontractor on similar works of the elements executed</th>
</tr>
</thead>
</table>

The Bidder shall enter in this schedule a list of the major sections and appropriate value of the work for which he proposed to use subcontractors [for those costing more than 10% of the bid price for each element], together with the names, addresses and experiences of the proposed subcontractors.

The capability of the subcontractor will also be assessed (on the same lines as for the main Contractor) before according approval to him.

(Work should not be split into small parts and subcontracted; but subcontracting specialized elements of works is acceptable).
Appendix to Financial Part: Schedules
Bill of Quantities
# Bill of Quantities

Bill of quantities given here to assess the items and respective estimated quantity involved in the work. The price shall be quoted online BOQ available in e-portal and price bid shall be submitted online only.

<table>
<thead>
<tr>
<th>Item No</th>
<th>Description of Items</th>
<th>Estimated Qty</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dismantling Woodwork Wrought and Planed Fixed in Frames of Trusses upto a height of 5 m above Plinth Level as per Technical Specification</td>
<td>64.00</td>
<td>Cum</td>
</tr>
<tr>
<td>2</td>
<td>Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In stringers, treads, landings etc. of staircases, including use of chequered plate wherever required, all complete</td>
<td>38177.00</td>
<td>Kg</td>
</tr>
<tr>
<td>3</td>
<td>Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works</td>
<td>10583.00</td>
<td>Kg</td>
</tr>
<tr>
<td>4</td>
<td>Hire charges of welding machine with single phase with welder, helper and electrodes etc. for repair and welding of gates, door, window etc. for 8 hrs. in a day complete with all material labour, T&amp;P etc. required for proper completion of work.</td>
<td>15.00</td>
<td>Job</td>
</tr>
<tr>
<td>5</td>
<td>Welding by gas or electric plant including transportation of plant at site etc. complete.</td>
<td>1000.00</td>
<td>Cm.</td>
</tr>
<tr>
<td>6</td>
<td>Providing and fixing bolts including nuts and washers complete.</td>
<td>250.00</td>
<td>Kg</td>
</tr>
<tr>
<td>7</td>
<td>Providing and fixing M.S. rivets of sizes in position.</td>
<td>50.00</td>
<td>Kg</td>
</tr>
<tr>
<td>8</td>
<td>Earth work in excavation by mechanical means (Hydraulic Excavator)/manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil</td>
<td>15.00</td>
<td>Cum</td>
</tr>
<tr>
<td>9</td>
<td>Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level 1:4:8 (1 cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size).</td>
<td>2.00</td>
<td>Cum</td>
</tr>
<tr>
<td>10</td>
<td>Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)</td>
<td>2.25</td>
<td>Cum</td>
</tr>
<tr>
<td>11</td>
<td>Removal of debris /waste material/ any other material / rubbish by full load tractor trolly as desired by the Engineer-in-charge &amp; safe disposal of the same out side the nigam area including cost of all labour, T&amp;P etc required for proper loading/unloading and disposal of waste or any other material required for the proper completion of the work.</td>
<td>20.00</td>
<td>Per Trip</td>
</tr>
<tr>
<td>12</td>
<td>Attending minor type of repair etc. for full day by engaging and supplying one suitable Beldar/mazdoor/sweeper for carrying simple type of repairing /cleaning of all work including all T&amp;P etc. complete but excluding cost of material.</td>
<td>20.00</td>
<td>Job</td>
</tr>
</tbody>
</table>
13. Finishing with Epoxy paint (two or more coats) On steel work at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Rate</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td></td>
<td>1430.00</td>
<td>Sqm.</td>
</tr>
</tbody>
</table>

**Note:**

1. Item for which no rate or price has been entered in will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities (refer: ITB Clause 14.2 and GCC Clause 41.3).

2. Unit rates and prices shall be quoted by the bidder in Indian Rupees (refer: ITB Clause 14.1 and ITB Clause 15.1). In online price bidding on e-portal; the system automatically generate/calculate the total bid price and financial position of bidders. Only online generated comparative statement shall be taken into consideration to decide the financial position of bidders.

3. Quoted prices shall be deemed to include all applicable taxes, royalties, electricity, cost towards comply the ESHS requirements, etc, excluding GST, **GST will be paid extra as applicable.**
Section V - Eligible Countries

Eligibility for the Provision of Goods, Works and Non-consulting Services in Bank-Financed Procurement

In reference to ITB 4.8, and 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this Bidding process:

- Under ITB 4.8(a) and 5.1: None
- Under ITB 4.8(b) and 5.1: None
1. Purpose

1.1 The Bank’s Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

   i. “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

   ii. “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

   iii. “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

   iv. “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

   v. “obstructive practice” is:

      (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

      (b) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under paragraph 2.2 e. below.

b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-
contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring mis-procurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

d. Pursuant to the Bank’s Anti-Corruption Guidelines and in accordance with the Bank’s prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;27 (ii) to be a nominated28 sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;

e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders(applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

27 For the avoidance of doubt, a sanctioned party’s ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

28 A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

29 Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.
PART 2 – Work’s Requirements
Section VII-Works’ Requirements

Scope of Bid

<table>
<thead>
<tr>
<th>S.No.</th>
<th>BRIEF DESCRIPTION OF WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Replacement of Wooden Sleepers with Chequered Plates and Strengthening of Patel Bridge.</td>
</tr>
</tbody>
</table>

Scope of Work includes:

1. The proposed work shall be carried out at the Patel Bridge situated at the downstream of the Chibro Power House.
2. The proposed work shall include dismantling of woodwork/ wooden sleepers at the deck of the Patel Bridge.
3. The work shall include replacement of these wooden sleepers with chequered plates by means of welding/ bolted or riveted connections in appropriate strength.
4. The work shall include attending minor type of repair works which shall be required during the repair of Patel Bridge.
5. The work shall also include painting of the steel plates, sections of the Patel bridge with epoxy paint in two or three layers.
1.0 INTRODUCTION:

Patel Bridge is located at the downstream of Chibro Power House. The bridge is located at 14 kms from Dakpathar. It is a truss bridge with deodar sleepers forming the deck. A safety audit of the bridge structure was carried out by an expert team from IIT Roorkee. The team inspected the present condition of the bridge and have recommended that the wooden sleepers forming the deck of the bridge have deteriorated and should be removed and replaced with metal plates. The experts from IIT Roorkee have also recommended that though the bridge is in good condition but there are indications of rusting in the girders. Therefore, it is required to paint the bridge immediately and to avoid corrosion by regular painting and maintenance.

The work proposed includes replacement of wooden sleepers by chequered plates and providing necessary safety provisions which shall include provision of bolts wherever necessary and structural steel members of sufficient strength. The work shall also include painting of bridge to prevent it from corrosion and further deterioration of its structural strength.

2.0 SCOPE OF WORK: As detailed hereunder:

Scope of this tender cover the work in totality for which tendering is intended. Items of work mentioned in bill of quantity [BOQ} form the work in general. Each individual item shall be executed as technical specification and/or as directed by the Engineer-In-Charge in such a way that it will complete the work in proper way. Scope of work will remain in existence until and unless the work for which tendering is intended, is completed properly as per General condition of contract, Special condition of contract, approved drawings, technical specifications and / or as directed by the Engineer-in-Charge.
3. GENERAL

3.1 All Technical specifications of PWD Uttarakhand, Indian Road Congress (IRC) / Ministry of Road, Transport & Highways (MORTH)/ Central Public Works Department (CPWD) including specifications listed in this Bid Document will be followed. BIS codes of latest revision shall be referred wherever necessary. All works shall be carried out in conformity to the specifications contained in relevant I.S codes available for the purpose, except in so far as inconsistency between the two specifications of any work are not given in either the I.S. code or here in the work shall be carried out in all respects in accordance with the instructions of the Engineer-in-charge given from time to time. A copy of each of the relevant IS codes shall be made available at site office by the Contractor for reference. In case any specification is missing, the work shall be carried out in all respects in accordance with the instructions of the Engineer-in-charge. The specifications are only for guidance purpose, the decision of Engineer-in-charge shall be final.

3.2 The contractor shall not do any work other than that mentioned in the agreement without the written orders of the Engineer-in-charge. No claim, whatsoever, shall be entertained for any unauthorized work.

3.3 No claim shall be entertained by the Nigam in respect of any theft, loss or damages/injuries or death of any personnel of the Contractor, due to accident occurring for any reason whatsoever. The contractor shall be responsible for the safety of the working personnel, works and the materials issued to him for the work.

3.4 No claim shall be entertained for idle labor for any reason whatsoever.

3.5 The Engineer-in-charge shall have the right to take possession of or use any completed part of work. Such possession or use shall not be deemed as taking over any work not completed in accordance with the contract.

3.6 All the works during the progress and after the completion may be subjected to the technical audit, any defects of materials of workmanship discovered during such audit and established as shall be rectified by the contractor at his own cost. Any recoveries or reduction in rates on any account considered necessary shall be made from the contractor even if the work has been accepted by the Engineer-in-charge from the subsequent bills or securities of the contractor.

3.7 All materials arranged by the contractor shall be subjected to approval of the Engineer-in-Charge. At any instance, if any material is found to be sub-standard and/or unfit to use in work, shall immediately be removed from the working premises at the cost and responsibility of the Contractor, failing which an unconditional penalty will be imposed upon the Contractor to remove the rejected materials from the site, without assigning any reason.

3.8 No claim for the interest or damages will be entertained by the Nigam with respect to any money or balance which may be lying with the Nigam or may become due owning to any disputes, difference or misunderstanding between the Engineer-in-charge on the one and the contractor on the other hand or with respect to any delay on the part of the Engineer-in-charge in making periodical of final payment or in any respect whatsoever.
4. MATERIALS

4.1 CEMENT:

4.1.1 Cement shall be fresh, dry and free from any lump and shall be arranged by the Contractor himself. Cement shall be Ordinary Portland Cement (OPC) and/or Portland Pozzolana Cement (PPC) in conformity to IS 269 / IS 8112 and/or IS 1489 and/or as directed by the Engineer-in-Charge. Every bag shall contain 50kg of the cement. Test Certificates for conformity to the physical and chemical requirements of cement in accordance with IS 269, 445,1489 and 8112 from any approved laboratory shall be submitted once for each source of supply and occasionally when called for in case of long and/or improper storage.

4.1.2 Contractor shall make his own arrangements of cartage from market to site of work. He shall be responsible for any loss to the pilferage of cement due to rain or dampness from ground or otherwise including pilferage. Detailed information about the source of receipt, brand and make of the cement proposed to be used in work shall be informed well in advance for approval of the Engineer-in-Charge before placing order for supply to site.

4.1.3 Construction of the curing tank, Water tank and bench mark pillage etc. as per direction of the Engineer-in-charge shall be made under bona-fide requirements.

4.2 STEEL:

4.2.1 Steel required for reinforcement shall conform to IS 1786 and shall be arranged by the Contractor himself. Contractor shall make his own arrangements of cartage from market to site of work.

4.2.2 Detailed information about the source of receipt, brand and make of the reinforcements proposed to be used in work shall be informed well in advance for approval of the Engineer-in-Charge before placing order for supply to site.

4.3 AGGREGATES:

4.3.1 Aggregates (Coarse and Fine) shall conform to IS 383 & 2386 and shall be collected from the approved quarry as directed by the Engineer-in-charge. It shall be free from clays, grass and other organic impurities in conformity to IS 2386(PI) and shall be screened before use.

4.3.2 All the quarry charges, taxes and royalty shall be done by Contractor himself.

4.3.3 Fine sand of F.M. not less than 1.2 shall be used in Masonry work and plaster only.

4.3.3 Coarse sand of F.M. more than 2.0 shall be used in all concrete and R.C.C. works.

4.3.4 Sand shall be used by volume in dry condition and a suitable allowance for bulkage shall be added if the sand found moist at the time of its use.

4.3.5 Coarse aggregates shall be well graded as described in the following table and shall be clean and free from any organic or objectionable matter, subject to the limit as defined in IS 2386(PII).

4.3.6 Well graded aggregates of maximum size of 40mm crushed from hard, tough stone shall be used in foundation and floor base concrete and well graded crushed aggregate of
maximum size 20mm shall be used in R.C.C. and plain cement concrete work.

4.3.7 It shall be approved by the Engineer-in-charge at the site of quarry before it is actually cartage to site of work and shall be crushed and graded as per table given below:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nominal size of stone ballast</th>
<th>Percent passing on I.S. sieve</th>
<th>Fineness Modulus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40mm</td>
<td>20mm</td>
<td>16mm</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3(a)</td>
<td>3(b)</td>
</tr>
<tr>
<td>1.</td>
<td>95-100</td>
<td>30-70</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>100</td>
<td>95-100</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>-</td>
<td>100</td>
<td>90-100</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>-</td>
<td>90-100</td>
</tr>
</tbody>
</table>

4.3.8 All the quarry charges, taxes and Royalty and transportation shall be borne by the Contractor himself. Receipts for taxes & royalty paid by the Contractor shall be attached along with the Running Bills, failing which no such Bill of the Contractor will be entertained.

4.3.9 Contractor may be asked by the Engineer-in-charge to wash and screen the aggregates to achieve proper gradation before use.

4.4 ADMIXTURES
Admixtures shall be suitable plasticizers and chemical admixtures, free from calcium chlorides, confirming to IS 1093. The admixtures as approved by the Engineer-in-Charge shall be of uniform consistency and quality and shall be maintained at the job site at uniform strength of solution. Admixtures shall be batched separately in liquid form in dispensers capable of measuring at one time the full quantity of each admixtures required for each batch.

4.5 WATER:
Water for use in mixing and curing shall be of drinkable quality. Water shall be free from injurious pills, oils & greasy matters, alkaline and acidic reactions and organic matters and other impurities that may be deleterious to concrete or steel. Water shall conform to IS 456.

5. SITE CLEARANCE:

5.1 All plants, shrubs & bushes, roots and other objectionable materials from site of work within the area required to be cleared, shall be completely removed from the site and disposed of as directed by the Engineer-in-charge.

5.2 The layout of foundations shall be clearly marked on the ground by dabbling and constructing level pillars as per drawing and direction of Engineer-in-charge before starting any digging work.
6.1 STEEL:

6.1.1 Steel required shall conform to IS 1786 and shall be arranged by the Contractor himself. Contractor shall make his own arrangements of cartage from market to site of work.

6.1.2 Detailed information about the source of receipt, brand and make of the reinforcements proposed to be used in work shall be informed well in advance for approval of the Engineer-in-Charge before placing order for supply to site.

6.1.3 The steel work in single section of R.S. joists, flats, Tees Angles fixed independently with or without connecting plate, is described in these clauses.

i. Fabrication
The steel sections as specified shall be straightened and cut square to correct lengths and measured with a steel tape. The cut ends exposed to view shall be finished smooth. No two pieces shall be welded or otherwise jointed to make up the required length of member. All straightening and shaping to form, shall be done by pressure. Bending or cutting shall be carried out in such a manner as not to impair the strength of the metal.

ii. Painting
All surfaces which are to be painted, oiled or otherwise treated shall be dry and thoroughly cleaned to remove all loose scale and loose rust. Surfaces not in contact but inaccessible after shop assembly, shall receive the full specified protective treatment before assembly. This does not apply to the interior of sealed hollow sections. Part to be encased in concrete shall not be painted or oiled. A priming coat of approved steel primer such as Red Oxide/Zinc Chromate primer conforming to IS 2074 shall be applied before any member of steel structure are placed in position or taken out of workshop.

iii. Erection
Steel work shall be hoisted and placed in position carefully without any damage to itself and other building work and injury to workmen. Where necessary mechanical appliances such as lifting tackle winch etc. shall be used. The suitability and capacity of all plant and equipment used for erection shall be up to the satisfaction of the Engineer-in-charge.

iv. Measurements
The work as fixed in place shall be measured in running metres correct to a millimetre and weights calculated on the basis of standard tables correct to the nearest kilogram. The standard weight of steel sections shall conform to IS 808 with tolerance in sizes as per IS 1852. Tolerance in weight is given in Table 10.3. Steel sections shall be acceptable within tolerance limits. Payment for steel sections shall be made as per actual weight within tolerances. Sections having weight on higher side than permissible pieces, separators, diaphragm gussets (taking overall square dimension) fish plates, etc. shall be added to the weight of respective items. In riveted work allowance is to be made for weight of rivet heads. Unless otherwise specified an addition of 2.5% of the weight of structure shall be made for shop and siterivet heads in riveted steel structures. No deduction shall be made for rivet/ or bolt holes (excluding holes for anchor or holding down bolts). Deduction in case of rivet or bolt hole shall
however be made if its area exceeds 0.02 sqm. The weight of steel sheets, plates and strips shall be taken from relevant Indian standards based on 7.85 Kg/m² for every millimetre sheet thickness. For rolled sections, steel rods and steel strips, weight given in relevant Indian Standards shall be used.

v. Rate

Rate includes the cost of labour and materials required for all the operations described above.

STEEL WORK IN BUILT UP SECTIONS (RIVETED AND BOLTED)

The steel work in built up section (Riveted and bolted) such as trusses, framed work etc. is specified in this clause.

i. Laying Out

A figure of the steel structure to be fabricated shall be drawn on a level platform to full scale. This may be done in full or in parts, as shown on drawings or as directed by the Engineer-in-Charge. Steel tape shall be used for measurements.

ii. Fabrication

Fabrication shall generally be done as specified in IS 800. In major works or where so specified, shop drawings giving complete information for the fabrication of the component parts of the structure including the location, type, size, length and details or rivets, bolts or welds, shall be prepared in advance of the actual fabrication and approved by the Engineer-in-charge. The drawings shall indicate the shop and field rivets, bolts and welds. The steel members shall be distinctly marked or stenciled with paint with the identification marks as given in the shop drawings. Great accuracy shall be observed in the fabrication of various members, so that these can be assembled without being unduly packed, strained or forced into position and when built up, shall be true and free from twist, kinks, buckles or open joints. Wooden or metal sheet templates shall be made to correspond to each member, and position of rivetholes shall be marked accurately on them and holes drilled. The templates shall then be laid on the steel members, and holes for riveting and bolting marked on them. The ends of the steel members shall also be marked for cutting as per required dimensions. The base of steel columns and the positions of anchorbolts shall be carefully set out at the required location.

The steel section shall be straight or to be straightened or flattened by pressure unless required to be of curvilinear form and shall free from twists. These shall be cut square either by shearing or sawing to correct length and measured by steel tape. No tow pieces shall be welded or joined to make up for the required length of member.

iii. Making Holes:

Holes through more than one thickness of materials for members, such as compound stanchion and girder flanges shall, where possible, be drilled after the members are assembled and tightly
clamped or bolted together. Punching may be permitted before assembly, provided the holes are punched 3mm less in diameter than the required size and reamed after assembly to the full diameter. The thickness of material punched shall be not greater than 16 mm.

**Rivet Holes**

The diameter for rivets and black bolts holes shall be taken as the nominal diameter of a rivet/black bolts plus 1.5 mm for rivets/bolts of nominal diameter less than or equal to 25 mm” and 2.0 mm for rivets of nominal diameter exceeding 25 mm, unless specified otherwise. Holes for turned and fitted bolts shall be drilled or reamed large by 0.2 to 8 mm depending upon the dia. of bolts. Holes shall have their axis perpendicular to the surface bored through. The drilling or reaming shall be free from burrs, and the holes shall be clean and accurate. Holes for rivets and bolts shall not be formed by gas cutting process. Holes for counter sunk bolts shall be made in such a manner that their heads sit flush with the surface after fixing.

**iv. Assembly:**

Before making holes in individual members, for fabrication and steel work intended to be riveted or bolted together shall be assembled and clamped properly and tightly so as to ensure close abutting, or lapping of the surfaces of the different members. All stiffeners shall be fixed (or placed) tightly both at top and bottom without being drawn or caulked. The abutting joints shall be cut or dressed true and straight, and fitted close together. Web plates of girders, which have no cover flange plates, shall have their ends flush with the tops of angles unless otherwise required. The web plate when spliced, shall have clearance of not more than 5mm. The erection clearance of cleated ends of members connecting steel to steel shall preferably be not greater than 1.5 mm. The erection clearance at the ends of beams without web cleats shall not be more than 3 mm at each end but where for practical reasons, greater clearance is necessary, seating designed suitably shall be provided. Column splices and butt joints of struts and compression members requiring contact for stress transmission shall be accurately, machined and close butted over the whole section. In column caps and bases, the ends of shafts together with the attached gussets, angles, channels etc. after riveting altogether shall be accurately machined so that the parts connected, butt against each other over the entire surfaces of contact. Connecting angles or channels shall be fabricated and placed in position with great accuracy so that they are not unduly reduced in thickness by machining. The ends of all bearing stiffeners shall be machined or grounded to fit tightly both at top and bottom.

**v. Riveting:**

Rivets shall be used, where slip under load has to be avoided.

Preliminaries before Rivetings:-
Members to be riveted shall have all parts firmly placed and held together before and during riveting, and special care shall be taken in this respect for all single riveted connections. For multiple riveted connections, a service bolt shall be provided in every third or fourth hole.

Process of Riveting

The riveting shall be carried out by using machines of the steady pressure type. However, where such facilities are not available hand riveting may be permitted by the Engineer-in-charge. The rivets shall be heated red hot, care being taken to control the temperature of heating so as not to burn the steel. Rivets of diameter less than 10mm may be driven cold. Rivets shall be finished neat with heads full and of equal size. The heads shall be central on shanks and shall grip the assembled members firmly. All loose, burnt, or badly formed rivets with eccentric or deficient heads shall be cut out and replaced. Incutting out rivets, care shall be taken so as not to injure the assembled members. Caulking and recapping shall not be permitted.

For testing rivets, a hammer weighing approx. 0.25 kg shall be used and both heads of the rivet (specially the machine head) shall be tapped. When so tested, the rivets shall not give a hollow sound and a jar where so specified, other tests shall be carried out to ensure the soundness of rivets. All rivets heads shall be painted with approved steel primer paint within a week of their fixing.

v. Bolting:

The nominal length of the bolt shall be the distance from the underside of the head to the further end of the shank. The nominal diameter of the bolt shall be the diameter at the shank above the screwed threads. Bolts, nuts and washers shall be thoroughly cleaned and dipped in double boiled linseed oil, before use. All bolts heads and nuts shall be hexagonal unless specified otherwise. The screwed threads shall conform to IS 1363 and the threaded surface shall not be tapered. The bolts shall be of such length as to project at least two clear threads beyond the nuts when fixed in position, and these shall fit in the holes without any shake. The nuts shall fit in the threaded ends of bolts properly. Where necessary, washers shall be tapered or otherwise suitably shaped to give the heads and nuts of bolts a satisfactory bearing. The threaded portion of each bolt shall project through the nut at least two threads. In all cases where the full bearing area of the bolt is to be developed, the bolt shall be provided with a washer of sufficient thickness under the nuts to avoid any threaded portion of the bolt being within the thickness of the parts bolted together. Where there is a risk of the nuts being removed or becoming loose due to vibrations or reversal of stresses, these shall be secured from slackening by the use of lock nut, spring washers as directed by the Engineer-in-charge.

vi. Erection

Steel members shall be hoisted and erected in position carefully, without any damage to itself, other structures and equipment and injury to workmen. The method of hoisting and erection proposed to be adopted by the contractor shall be got approved from the Engineer-in-charge in advance. The contractor however shall be fully responsible for the work being carried out in a safe
and proper manner without unduly stressing the various members and proper equipment such as
derricks, lifting tackles, winches, ropes etc. shall be used.

The work of erection may be done in suitable units as may be directed by the Engineer-
incharge. Fabricated members shall be lifted at such points so as to avoid deformation or
excessive stress in members. The structure or part of it placed in position shall be secured against
over-turning or collapse by suitable means. During execution, the steel members shall be securely
bolted or otherwise fastened when necessary, temporarily braced to provide for all loads including
those due to erection equipments and its operation to be carried safely by structure during
erection. The steel members shall be placed in proper position as per approved drawing, final
riveting or permanent bolting shall be done only after proper alignment has been checked and
confirmed.

Trusses shall be lifted only at nodes. The trusses above 10 m in span shall not be lifted by slinging
at two mid points of rafters, which shall be temporary braced by a wooden member of a
suitable section. After the trusses are placed in position, purlins and wind bracings shall be fixed
as soon as possible. The end of the truss which faces the prevailing winds shall be fixed with
holding down bolts, and the other end kept free to move. In case of trusses of spans up to 10 m the
free end of the truss shall be laid on lead sheet or steel plate as per design, and the holes for
holding down bolts shall be made in the form of oblong slots so as to permit the free movements
of the truss end. For larger spans the truss shall be provided with proper bearing as per design.

Columns and stanchions shall be erected truly vertical with the necessary cross bracing etc.
and the base shall be properly fixed with the foundation concrete by means of anchor bolts etc. as
per drawing.

Anchor bolts to be placed in the concrete foundation should be held in position with a
wooden template. At the time of concreting anchor bolt locations shall be provided with suitable
timber mould or pipe sleeve to allow for adjustment which shall be removed after initial setting of
concrete. The spaces left around anchor bolts shall be linked to a stopping channel in the concrete
leading to the side of the pedestal and on the underside of the base plate to allow the spaces being
grouted up after the base plate is fixed in the position along with the column footing. Grouting
shall be of cement mortar 1:3 (1 cement: 3 coarse sand) or as specified.

vii. Bedding of Column, Stanchions etc.:-

Bedding shall not be carried out until the steel work has been finally levelled, plumbed and
connected together. The stanchion shall be supported on steel wedges and adjusted to make the
column plumb. For multistoreyed buildings, the bedding shall not be done until sufficient number
of bottom lengths of stanchions have been properly lined, levelled and plumbed and sufficient
floor beams are fixed in position. The base plates shall be wedged clear of the bases by M.S.
wedges and adjusted where necessary to plumb the columns. The gaps under the baseplate may
be made upto 25 mm which shall be pressure grouted with cement grouts. With small columns, if
permitted by the Engineer-in-charge, the column base shall be floated on a thick cement grout on
the concrete pedestal. The anchor bolt holes in the base plate may be made about 10 to 15 mm larger than the bolts. In such cases suitable washers shall be provided.

viii. Painting

Before the members of the steel structure are placed in position or taken out of the workshop these shall be painted as specified.

ix. Measurements

The work as fixed in position shall be measured in running metres correct to a millimeter and their weight calculated on the basis of standard tables correct to the nearest kilogram. The standard weight of steel sections shall conform to IS 808 with tolerance in sizes as per IS 1852.

STEEL WORK IN BUILT UP SECTION (WELDED)

The steel work in built up sections (welded) such as in trusses, form work etc. is specified in this clause.

i. Laying out

It shall be as specified.

ii. Fabrication

Straightening, shaping to form, cutting and assembling, shall be as per 10.3.2 as far as applicable, except that the words “riveted or bolted” shall be read as “welded” and holes shall only be used for the bolts used for temporary fastening as shown in drawings.

iii. Welding:

Welding shall generally be done by electric arc process as per IS 816 and IS 823. The electric arc method is usually adopted and is economical. Where electricity for public is not available generators shall be arranged by the contractor at his own cost unless otherwise specified. Gas welding shall only be resorted to using oxyacetylene flame with specific approval of the Engineer-in-charge. Gas welding shall not be permitted for structural steel work. Gas welding required heating of the members to be welded along with the welding rod and is likely to create temperature stresses in the welded members. Precautions shall therefore be taken to avoid distortion of the members due to these temperature stresses. The work shall be done as shown in the shop drawings which should clearly indicate various details of the joint to be welded, type of welds, shop and site welds as well as the types of electrodes to be used. Symbol for welding on plans and shop drawings shall be according to IS 813. As far as possible every effort shall be made to limit the welding that must be done after the structure is erected so as to avoid the improper welding that is likely to be done due to heights and difficult positions on scaffolding etc. apart from the aspect of economy. The maximum dia of electrodes for welding work shall be as
per IS 814. Joint surfaces which are to be welded together shall be free from loose mill scale, rust, paint, grease or other foreign matter, which adversely affect the quality of weld and workmanship.

iv. **Precautions**

All operation connected with welding and cutting equipment shall conform to the safety requirements given in IS 818 for safety requirements and Health provision in Electric and gas welding and cutting operations.

v. **Inspection and testing of welds shall be as per IS 822.**

vi. **Assembly:**

Before welding is commenced, the members to be welded shall first be brought together and firmly clamped or tack welded to be held in position. This temporary connection has to be strong enough to hold the parts accurately in place without any disturbance. Tack welds located in places where final welds will be made later shall conform to the final weld in quality and shall be cleaned off slag before final weld is made.

vii. **Erection:**

The specification shall be as described in 10.3.3 except that while erecting a welded structure adequate means shall be employed for temporary fastening the members together and bracing the frame work until the joints are welded. Such means shall consist of applying of erection bolts, tack welding or other positive devices imparting sufficient strength and stiffness to resist all temporary loads and lateral forces including wind. Owing to the small number of bolts ordinarily employed for joints which are to be welded, the temporary support of heavy girders carrying columns shall be specially attended. Different members which shall be fillet welded, shall be brought into as close contact as possible. The gap due to faulty workmanship or incorrect fit if any shall not exceed 1.5 mm if gap exceeds 1.5 mm or more occurs locally the size of fillet weld shall be increased at such position by an amount equal to the width of the gap.

viii. **Painting:**

Before the member of the steel structures are placed in position or taken out of the workshop these shall be painted as specified

ix. **Measurements**

The mode of measurements shall be the same as specified in 10.2.4 except that weight of welding material shall not be added in the weight of members for payment and nothing extra shall be paid for making and filling holes for temporary fastening of members during erection before welding.

x. **Rate**

The rate shall include the cost of all labour and materials involved in all the operations described above.
8. CEMENT CONCRETE WORK

1. CONCRETE WORKS

1.1. Concrete in Structures

1.1.1. General

The items in the BOQ for concrete in the structures includes all cast-in-place concrete in
the structure.

Cast-in-place concrete for the structures shall confirm to the requirement, miscellaneous
metal work, mechanical and electrical equipment and other items forming a part of the
structures are provided for elsewhere in this specification.

The structures shall be built to the lines, grades and dimensions shown on the drawings.
The dimensions of each structure as shown on the drawings will be subject to such
modifications as may be found necessary by the Project Manager to adopt the structure
to the conditions disclosed by the excavation or to meet other conditions. Where the
thickness of any portion of a concrete structure is variable, it shall vary uniformly
between the dimensions shown. Where necessary, as determined by the Project
Manager, the contractor shall be furnished additional detail drawings of the structures to
be constructed. The contractor will not be entitled to any additional allowances above
the price bid in the bill of quantities by reason of the dimensions fixed by the Project
Manager or by reasons of any modifications or extension of a minor character to adopt a
structure at site, as determined by the Project Manager.

The cost of furnishing all materials and performing all work for installing timber, metal
and other accessories for which specific price are not provided in the BOQ, shall be
included in the applicable prices bid in the BOQ for the work to which such items are
appurtenant.

1.2. General concrete requirements

1.2.1. Preparation of concrete

Concrete shall be composed of cement, sand, coarse aggregate, water admixtures (if any)
as specified and all well mixed in batching & mixing plant by weight or by concrete
mixture by volume / weight and brought to the proper consistency. Batching plant, if
deemed required for large volume of concrete work, shall conform to IS code No. 4925.
For works in which water tightness is required the specification in IS 3370 shall be
applied. Concrete shall be mixed in a fully automatic batching plants. In the works
involving very small quantities of concrete, Project Manager may allow the use of proper
mechanical mixer for the production of concrete. No other mixers shall be allowed for concrete mixing. The concrete batching plant shall have the cloud based memory for accessing the production data in real time. The batching plant shall be able to produce concrete as per 3 to 4 types of mix. Output from batching plant shall be as dense as possible, plastic enough to consolidate well and stiff enough to stay in place on the slopes. Mixing shall be continued until there is a uniform mixing of the materials and the concrete is uniform in color and consistency. The time of mixing shall be as shown in Table 1 of IS 457 and reproduced in the table below.

<table>
<thead>
<tr>
<th>Capacity of Mixer</th>
<th>Minimum Time of Mixing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural Aggregates</td>
</tr>
<tr>
<td>3 cu m (or 3 cu yd) or larger</td>
<td>2 minutes</td>
</tr>
<tr>
<td>2 cu m (or 2 cu yd)</td>
<td>1½ minutes</td>
</tr>
<tr>
<td>1 cu m (or 1 cu yd) or smaller</td>
<td>1½ minutes</td>
</tr>
</tbody>
</table>

a) **Nominal maximum size of aggregates**
For sizes of aggregates IS 383 shall apply. The coarse aggregate to be used in concrete shall be as large as practicable, consistent with required strength, spacing of reinforcement and embedded items, and placement thickness. The size of the coarse aggregates to be used will be determined by the Project Manager and may vary incrementally according to the conditions encountered in each concrete placement. Nominal maximum size of aggregate for concrete in structures and dam lining shall be as indicated in the relevant drawings appended to the contract documents. Medium coarse aggregate than specified shall be used where in the opinion of the Project Manager that proper placement of concrete is impracticable with the size of the aggregate specified in the drawings.

b) **Mix proportions**
Grades of concrete to be used shall be as per the specification in the approved drawing. The proportions of various ingredients to be used in the strength based concrete for different items of the work are to be determined from mix design. In volume proportion of concrete; the quantity of both cement and aggregate should be determined by volume. Water shall be either measured by volume in calibrate tanks or weighed. Batching plant shall confirm IS 4925. \{Indian Standard Specification for batching and mixing plant\}. All measuring equipment shall be maintained in a clean serviceable condition and their accuracy periodically
checked. The acceptance or rejection of concrete shall be as per the acceptance criteria laid down in clause 16 of I.S. 456-2000.

The net water cement ratio exclusive of water absorbed by the aggregate shall be sufficiently low to provide adequate durability in concrete. The water-cement ratio shall normally be governed by Table 5 of IS 456:2000, reproduced below, and firmed up by the trial mix designs, which shall be intimated to the Contractor by the Project Manager.

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Minimum Cement Content kg/m³</th>
<th>Maximum Free Water-Cement Ratio</th>
<th>Minimum Grade of Concrete</th>
<th>Minimum Cement Content kg/m³</th>
<th>Maximum Free Water-Cement Ratio</th>
<th>Minimum Grade of Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Mild</td>
<td>220</td>
<td>0.60</td>
<td>–</td>
<td>300</td>
<td>0.55</td>
<td>M 20</td>
</tr>
<tr>
<td>ii) Moderate</td>
<td>240</td>
<td>0.60</td>
<td>M 15</td>
<td>300</td>
<td>0.50</td>
<td>M 25</td>
</tr>
<tr>
<td>iii) Severe</td>
<td>250</td>
<td>0.50</td>
<td>M 20</td>
<td>320</td>
<td>0.45</td>
<td>M 30</td>
</tr>
<tr>
<td>iv) Very severe</td>
<td>260</td>
<td>0.45</td>
<td>M 20</td>
<td>340</td>
<td>0.45</td>
<td>M 35</td>
</tr>
<tr>
<td>v) Extreme</td>
<td>280</td>
<td>0.40</td>
<td>M 25</td>
<td>360</td>
<td>0.40</td>
<td>M 40</td>
</tr>
</tbody>
</table>

Notes:
1. Cement content prescribed in this table is irrespective of the grades of cement and it is inclusive of additions mentioned in 5.2. The additions such as fly ash or ground granulated blast furnace slag may be taken into account in the concrete composition with respect to the cement content and water-cement ratio if the suitability is established and as long as the maximum amounts taken into account do not exceed the limit of pozzolana and slag specified in IS 1449 (Part 1) and IS 455 respectively.
2. Minimum grade for plain concrete under mild exposure condition is not specified.

The water cement ratio for various grades of concrete shall be as determined and ordered by the Project Engineer.

c) Consistencies:

The slump of concrete at the placement shall be governed by IS : 456-2000:

If the specified slump is exceeded at the placement, the concrete is unacceptable. The Project Manager reserves the right to require lesser slump whenever concrete of such lesser slump can be consolidated readily into place by means of vibration specified by the Project Manager. To maintain concrete at proper consistency, the amount of water and sand batched for concrete shall be adjusted to compensate for any variation in the moisture content or grading of the aggregates as they enter the mixer. Addition of water to compensate for stiffening of the concrete after mixing but before placing will not be permitted. Uniformity in concrete
consistency from batch to batch shall be maintained.

1.3. **Concrete Quality Control Measures and Concrete Quality Assurance Test Program**

   a) **Concrete quality control measures**

      i. The contractor shall be fully responsible for providing quality concrete to ensure compliance of the contract requirements.

      ii. Making and curing concrete test specimens in the field, transporting to the laboratory and testing concrete specimen shall confirm to relevant clauses of I.S 516.

      iii. Testing of concrete shall be carried out by the Contractor on representative samples taken at the site of laying the concrete in accordance with relevant clauses of I.S. 1119.

1.4. **Sampling procedure and frequency**

   A random sampling procedure shall be adopted to ensure that each concrete batch has a reasonable chance of being tested, i.e. the sampling should be spread over the entire period of concreting and should cover all mixing units. The minimum frequency of sampling of concrete of each grade shall be in accordance with the IS:456-2000 (section 15.2.2 and reproduced below) & I.S:1199.

   The minimum frequency of sampling of concrete of each grade shall be in accordance with the following:

<table>
<thead>
<tr>
<th>Quantity of Concrete in the Work, m³</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 5</td>
<td>1</td>
</tr>
<tr>
<td>6 - 15</td>
<td>2</td>
</tr>
<tr>
<td>16 - 30</td>
<td>3</td>
</tr>
<tr>
<td>31 - 50</td>
<td>4</td>
</tr>
<tr>
<td>51 and above</td>
<td>4 plus one additional sample for each additional 50 m³ or part thereof</td>
</tr>
</tbody>
</table>

   NOTE—At least one sample shall be taken from each shift. Where concrete is produced at continuous production unit, such as ready-mixed concrete plant, frequency of sampling may be agreed upon mutually by suppliers and purchasers.

a) **Test specimen**

   Three test specimens shall be made from each sample for testing at 28 days. Additional cubes may be required for various purposes, such as to determine the strength of concrete
at 7 days or at the time of striking formwork, or to determine the duration of curing or to check the testing cubes cured by accelerated methods as described in IS: 9013. The specimen shall be tested as described in IS:516.

b) Test strength of samples

a) The test strength of the sample shall be the average of three specimens. Individual variation shall not be more than 15 percent of the average.

b) Testing shall be carried out at the testing laboratories set up at the site or at any other laboratory that the Project Manager may decide upon and the results given thereby shall be considered as correct and authentic and acceptable to the Contractor.

c) Acceptance criteria

Acceptance criteria will be as per clause 16 and clause 17 of IS: 456-2000 and Table 11 of IS 456-2000, which is reproduced below.

<table>
<thead>
<tr>
<th>Specified Grade</th>
<th>Mean of the Group of 4 Non-Overlapping Consecutive Test Results in N/mm²</th>
<th>Individual Test Results in N/mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 15 and above</td>
<td>( f_{c} \geq 0.825 \times \text{established standard deviation} ) (rounded off to nearest 0.5 N/mm²) or ( f_{c} + 3 \text{ N/mm}^2 ), whichever is greater</td>
<td>( f_{c} \geq 3 \text{ N/mm}^2 )</td>
</tr>
</tbody>
</table>

Note: the above criterion is as per Amend No.3 to IS 456:2000 (Fourth Revision, April 2007)

1.5 Cement

Cement shall conform to relevant clause 5 of IS. 456:2000 and include 33 Grade ordinary Portland cement (IS 269); 43 Grade ordinary Portland cement (IS 8112); 53 Grade ordinary Portland cement (IS 12269); Portland pozzolana cement (fly ash based) conforming to IS 1489 (Part I); Portland slag cement (IS 455); Low heat Portland cement (IS 12600); and Sulphate Resisting cement (IS 12330). Cement to be used shall be with
the prior approval of Project Manager. The provisions of this paragraph apply to cement for use in cast-in-place concrete required under these specifications.

The contractor shall make his own arrangements for the procurement of cement to specifications required for the works. Transportation from the place of supplying to the batching plant shall be in any weather tight means which will protect the cement completely from exposure to moisture. Cement bags shall not be stacked more than 1.5 m high. Each shipment of bagged cement shall be stored separately so that it may readily be distinguished from other shipment and shall be stored in a dry enclosed area protected from moisture. Storage of materials shall be as described in I.S. 4082 (I.S. recommendation on stacking and storage of construction materials at site). To prevent under aging of bagged cement after delivery, the contractor shall use bags of cement in the chronological order in which they were delivered to the job site. All storage facilities shall be subject to approval of the Project Manager. The manufacturer test certificate of cement must show that the alkali content is less than 0.6 % and should also show the chloride content.

1.6. Admixtures

When only deemed necessary, the contractor shall use Accelerating, retarding, water reducing and Air entraining agents & other admixtures like —Polypropylene Fiber as directed by the Project Manager. Admixtures shall be of uniform consistency and quality and shall be maintained at the job site at uniform strength of solution. An admixture's suitability and effectiveness shall be verified by trial mixes with the other materials used in the works. If two or more admixtures are to be used simultaneously in the same concrete mix, their interaction shall be checked and trial mixes done to ensure their compatibility. There should also be no increase in risk of corrosion of reinforcement or other embedment’s. Admixtures shall be batched separately in liquid form in containers capable of measuring at one time the full quantity of each admixture required for each batch. Chemical admixtures which harm the quality and strength of concrete shall not be used in the concrete.

Admixtures to be used in concrete shall confirm to I.S. 9013-1979 Indian Standard Specifications for admixtures for concrete.

a) Chemical Admixtures:

Chemical admixtures are used in concrete mixes of low water-cement ratio to improve their workability to enable easy placement and consolidation of concrete. Chemical admixtures are plasticizers / super plasticizers which are organic compounds and are used to improve the workability of fresh concrete. A super plasticizer allows the production of concrete of higher workability (slump) with the same water-cement ratio.
Concrete with low water-cement ratio (0.40, 0.45, 0.50) and concrete with very low water-cement ratio (0.25, 0.28; 0.30; 0.35 etc) becomes harsh and presents problems in placement and compaction/consolidation. M25, M 30, M35, M40 concrete mixes are designed with low water-cement ratio ranging from 0.50 to 0.40. High strength concrete mixes (M60, M70, M80, M90 ) are designed with very low water-cement ratio ranging from 0.33 to as low as 0.28. Chemical admixtures are to be added to increase their slump and workability without addition of any extra water whatsoever. Following types of admixtures are commercially available and can be used with the approval of Project Manager:

- MLS (Modified Lignosulphonates).
- SNF (Sulphonated Napthalene Formaldehyde).
- SMF (Sulphonated Melamine Formaldehyde).
- PCE (Poly Carboxylic Ether)

The first three types (MLS, SNF, SMF) are conventional super plasticizers and the last one, PCE is considered to be the state-of-art new generation super plasticizer. MLS, SNF and SMF types of super plasticizers give water reduction from about 15 % to 20 %, where as, PCE super-plasticizer can give water reduction up to about 30 to 35 %. As such, PCE is known as “high range water reducing admixture”.

Dosage of Chemical Admixture / Super plasticizer: The dosage of the respective super plasticizer is given in the brochure / literature of the manufacturer. Dosage is also best determined through trial mixes. It may range from about 0.70 % to about 2 % by weight of cement or by weight of cementitious material (cement plus mineral admixture, if used).

Example for Illustration. M30 Design Mix made with 43 Grade OPC (Ordinary Portland Cement).

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Cement (Kg/m³)</th>
<th>Admixture (litres)</th>
<th>W/C Ratio</th>
<th>Slump (mm)</th>
<th>1 day</th>
<th>7 days</th>
<th>28 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>375</td>
<td>NIL</td>
<td>0.57</td>
<td>55</td>
<td>10</td>
<td>26</td>
<td>40</td>
</tr>
<tr>
<td>2.</td>
<td>375</td>
<td>3.75</td>
<td>0.57</td>
<td>140</td>
<td>11</td>
<td>30</td>
<td>43</td>
</tr>
</tbody>
</table>
The above illustrates that with the addition of 3.75 litres of chemical admixture, the slump of M30 concrete mix has increased from 55 mm to 140 mm without addition of any extra water what so ever while maintaining the same specified water-cement ratio (W/C) of 0.57 as is of M30 concrete mix without any admixture. Thus, super plasticized concrete allows concrete of high workability with very low water-cement ratio, excellent homogeneous & cohesive mix and easy placement in congested reinforcement affording very good finish.

b) Mineral Admixtures:

Mineral Admixtures are used as part replacement of Ordinary Portland Cement (OPC). These are by-products/ waste products of thermal plants and metallurgical industries. Principal mineral admixtures are:

(a) Fly ash. It is the by product from the coal-based thermal power plants. It is used to manufacture Portland Pozzolana Cement (fly ash based) with fly ash content ranging from 20 % to about 25 %. Fly ash improves cohesiveness of concrete mix; reduces thermal cracking; improves resistance to Alkali-Silica Reaction (ASR); and reduces permeability of concrete.


Table 1 Chemical Requirements
(Clause 6.1)

<table>
<thead>
<tr>
<th>Si No.</th>
<th>Characteristic</th>
<th>Requirements</th>
<th>Method of Test, Ref to</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td></td>
<td>SiO₂ plus Al₂O₃ plus Fe₂O₃</td>
<td>70</td>
<td>50</td>
</tr>
<tr>
<td>i)</td>
<td>Silicon dioxide (SiO₂) plus aluminium oxide (Al₂O₃) plus iron oxide (Fe₂O₃) in percent by mass, Min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii)</td>
<td>Silicon dioxide (SiO₂) in percent by mass, Min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii)</td>
<td>Reactive silica in percent by mass, Min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv)</td>
<td>Magnesium oxide (MgO) in percent by mass, Max</td>
<td></td>
<td></td>
</tr>
<tr>
<td>v)</td>
<td>Total sulphur as sulphur trioxide (SO₃) in percent by mass, Max</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi)</td>
<td>Available alkalis as sodium oxide (Na₂O) in percent by mass, Max</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vii)</td>
<td>Total chlorides in percent by mass, Min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>viii)</td>
<td>Loss on ignition in percent by mass, Max</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Optional test. 2. For the purpose of this test, wherever reference to cement has been made, it may be read as pulverized fuel ash.

(b) Silica / Micro silica. It is the by product in the production of ferro- silicon alloys or silicon from quartz & carbon in an electric arc furnace. It contains 85 % to 90 % Silicon Dioxide (SiO₂.). It is an extremely fine powder and is a highly reactive pozzolana having particles of an average diameter of 0.1 micron. The average specific surface area of silica fume is as much as about 20,000 m² / kg to 25,000 m² / kg compared to about 250 – 275 m² / kg fineness of Ordinary Portland cement. Thus, micro silica particle is about 100 times finer than the cement particle and
imparts high strength to the concrete mix.

Use of Micro Silica. Micro Silica is an important constituent in the design of ‘High Strength Concrete Mixes’ ranging from M60 to M 90 and even higher. It is also used in the ‘Steel Fibres Reinforced Shotcrete (SFRS). Dosage of Micro Silica Dosage varies between 8 % to 15 % of the cement content depending upon the strength of the mix to be designed. Its dosage in SFRS is about 7 % of cement content.

Specifications Of Silica Fume / Micro Silica – Indian Standard IS: 15388-2003 and Tables 1 and 2 of the code are reproduced below.

<table>
<thead>
<tr>
<th>Table 1 Chemical Requirements (Clause 4)</th>
<th>Table 2 Physical Requirements (Clause 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sl No.</td>
<td>Characteristic</td>
</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>i)</td>
<td>SiO₂, percent by mass, Min</td>
</tr>
<tr>
<td>ii)</td>
<td>Moisture content, percent by mass, Max</td>
</tr>
<tr>
<td>iii)</td>
<td>Loss on ignition, percent by mass, Max</td>
</tr>
<tr>
<td>iv)</td>
<td>Alkalis as Na₂O, percent, Max</td>
</tr>
</tbody>
</table>

(C) Ground Granulated Blast Furnace Slag (ggbs). It is the byproduct of steel plants manufacturing pig iron. It is used in the manufacture of Portland Slag Cement (IS 455) and the slag content varies from 50 % to 70 %. Use of Portland Slag Cement with at least 50 % slag in the cement concrete offers many advantages, such as (a) significantly decreases the permeability of concrete, thereby increasing its durability (b) increases resistance to corrosion of steel reinforcement resulting in longevity of structures (d) reduces heat of hydration, thereby minimizing thermal cracking (e) provides increased resistance to ASR (Alkali Silica Reaction). Slag content in the Portland Slag Cement (IS 455) can be increased to as much as 70 %.

Fineness (Blaine) \(= 275 \text{ m}^2 /\text{kg}\)  
Soundness \(= 10 \text{ mm Max.}\)  

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass content</td>
<td>(= 67 % \text{ Min.})</td>
</tr>
<tr>
<td>Loss on ignition</td>
<td>(= 3 % \text{ Max.})</td>
</tr>
<tr>
<td>Chloride content</td>
<td>(= 0.1 % \text{ Max.})</td>
</tr>
<tr>
<td>Manganese content</td>
<td>(= 2 % \text{ Max.})</td>
</tr>
</tbody>
</table>

Compressive Strength (70 % ggbs& 30 % OPC):

<table>
<thead>
<tr>
<th>Duration</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-day</td>
<td>12 N/mm(^2) Min.</td>
</tr>
<tr>
<td>28-day</td>
<td>32.5 N/mm(^2) min.</td>
</tr>
</tbody>
</table>

1.7. **Synthetic fibre additives**

When only deemed necessary, synthetic fibres, made of 100% virgin grade polypropylene, should be added to concrete for special application to enhance properties (Clause 5.8 of IS 456 as per amendment 3 August 2007). The fibre should be as per guidelines of ASTM C 1116 (Type III) or equivalent. Synthetic fibres can be used in cement plaster/concrete lining/Shotcrete work/guniting work. Synthetic fibres may be used 6mm (in Plaster/Guniting) / 12mm (in PCC/RCC/concrete lining/Shotcreting) @ 125 gm per 50 kg of cement or in the ratio as specified by the manufacturer specification and direction of Project Manager. For effective performance of concrete, the recommended dosage rate of polypropylene fibers is 0.9 kg/m\(^3\), approximately 0.1% by volume or as decided during mix design of concrete.

1.8. **Steel fibres**

When only deemed necessary, steel Fibres are used in Concrete and Shotcrete. Advantages of Steel Fibres. Specifications of Steel Fibres. Addition of steel fibres in concrete and shotcrete mixes gives the following advantages:

- Improves flexural strength of concrete/shotcrete.
- Improves ductility of concrete/shotcrete.
- Improves shear strength of concrete/shotcrete.
- Improves impact resistance of concrete/shotcrete.
- Improves crack resistance of concrete/shotcrete.
- Steel fibres transform concrete/shotcrete from brittle to ductile material.
- Steel Fibres Reinforced Concrete offers better resistance against abrasion & erosion.

The most important aspects that control the performance of steel fibres in concrete and shotcrete are:

- Aspect Ratio (Length/Diameter)
- Tensile strength.
- Geometrical Shape.
- Fibre Network.
The higher the aspect ratio and fibre network of a high strength fibre, the better the performance of “High Strength Steel Fibre Reinforced Concrete” / “Steel Fibre Reinforced Shotcrete (SFRS)”. Aspect Ratio of 60 to 80 is considered to be good. With smaller diameter fibres, the number of fibres per unit weight increases which densify the fibre network, thereby, making the concrete / shotcrete more efficient. Two types of steel fibres are tabulated below for illustration:

<table>
<thead>
<tr>
<th>Fibre Type (L/Dia)</th>
<th>Length</th>
<th>Diameter</th>
<th>Aspect Ratio (Length/Diameter)</th>
<th>Fibre Network (m/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>35/0.55</td>
<td>35 mm</td>
<td>0.55 mm</td>
<td>65</td>
<td>556</td>
</tr>
<tr>
<td>30/0.60</td>
<td>30 mm</td>
<td>0.6 mm</td>
<td>50</td>
<td>450</td>
</tr>
</tbody>
</table>

Usually, steel fibres of 36 mm length and 0.45 mm diameter (Aspect Ratio of 80) are used in the High Strength Fibre Reinforced Concrete Mix.

**Shape of Fibres.** The steel fibres shall have “hooked ends” to provide superior anchorage. Glued steel fibres bundled together with a water soluble glue have now been developed which afford much better mixing and their uniform dispersion throughout the entire concrete matrix / shotcrete matrix instead of using loose fibres which pose mixing problem and do not spread evenly/uniformly in the concrete mix / shotcrete mix. Steel fibres of reputed manufacturer shall be used. DramixRsteelfibres are considered to be of high quality. Such steel fibres are depicted in Annex 2 for illustration.

**Tensile Strength of Steel Fibres.** The tensile strength of steel fibres shall be higher than 900 MPa (900 N/mm²). It should preferably be 1000 MPa (1000 N/mm²). The fibres shall not be galvanized.

**Dosage of Steel Fibres.** Dosage of steel fibres may vary from about 5 % to 6 % of the cement content used in the Concrete mix / Shotcrete mix.

1.9. **Specifications Of Synthetic Fibre Admixture**

The fibre should be as per guidelines of ASTM C 1116 (Type III) or equivalent. The Polyfin( Polypropylene and Polyethylene) fibres should have the following properties:

- Compliance - ASTM C 1116 (Type III)
- Length of Fibre - Minimum 6mm (in Plaster / Guniting) / 12mm (in PCC / RCC / concrete lining / Shotcreting)
- Construction - Straight / Fibrillated Mesh Fibre
Melting Point - 165 Degree Celcius
Absorption - Nil
Acid Resistant - Excellent
Alkali Resistant - Excellent
Salt Resistant - High
Thermal conductivity - Low
Tenacity - 6.5 GDP + Elongation @ 19 % maximum
Specific gravity - 0.92 gm /cc
Elastic Modulus - 500-700 Ksi

1.10. Water

The water used in making and curing of concrete, mortar and grout shall be clean and free from objectionable quantities of silt, organic matter, injurious amounts of oils, acids, salts and other impurities. Potable water is generally considered satisfactory for mixing concrete. However, water shall be tested and shall conform to the following acceptable limits. At least 3 tests shall be conducted for all period of concreting and one test every 3 months for grouting work.

Acceptable Limits:

pH 6.0 -8.5. (ii) Sulphates (as SO3 ) = 400 ppm max. (iii) Organic impurities = 200 ppm max

(Chloride 250 ppm max (v) Total dissolved solids = 1000 ppm max. (vi) Total hardness= 500 ppm max.

B.I.S. specification is No. 456-2000.

1.11. Sand (Fine Aggregate)

a) General

(i) Sand shall be from approved sources of natural deposit and must be free from silt, organic impurities and other deleterious materials as per I.S.383 & I.S.2386.

(ii) Sand as collected for concrete, shall have a uniform and stable moisture content. Determination of moisture content shall be made as frequently as possible, the frequency for a given job being determined by the Project Manager according to weather conditions, (I.S. 456 - 2000).
(iii) Sand may be rejected if it fails to meet any of the following quality requirements.

(iv) The Contractor shall carry out tests on sand at periodic intervals for the presence of any inorganic impurities (silt, clay) and the presence of any organic impurities. These tests shall be duly documented in a register and copy of tests shall be furnished to the Project Manager.

(v) For every 500 m³ of sand, Soundness Tests on sand shall be conducted by the Contractor. Soundness after 5 cycles by Mg SO4 (Magnesium Sulphate) shall be less than 15 % and Soundness after 5 cycles by Na2 SO4 (Sodium Sulphate) shall be less than 10 % for the acceptance of sand.

b) Specific gravity:
The sand to be used shall have minimum specific gravity of 2.6

Sand shall be screened before use. If sand brought to site is not clean it must be washed clean in water. Fine draft sand or sea sand or sand containing saline impurities shall on no account be used.

c) Grading

The sand as batched shall be well graded and when tested by means of standard sieves shall confirm to the limits given in I.S. 383 and shall be described as fine aggregates, grading zones I, II, III and IV. Sand complying with the requirements of any of the four grading zones is suitable for concrete. But, sand confirming to the requirements of grading zone -IV shall not be used for reinforced cement concrete work.

1.12. Coarse Aggregate

a) General

For the purposes of these specifications, the term “Coarse Aggregate” designate clean well graded aggregate most of which is retained on 4.75 mm I.S. Sieve and containing only so much finer material as permitted for various types described under relevant clause of I.S. 383. Coarse Aggregate for concrete shall be furnished by the Contractor from the approved quarries.

b) Quality

The coarse aggregate shall consist of naturally occurring stones, and shall be hard, strong, durable, clear and free from veins and adherent coating, and free from injurious amounts of disintegrated pieces, alkali, vegetable matter and other deleterious materials. Coarse aggregate will be rejected if it fails to meet any of the following requirements:

1. LOS-ANGLES ABRASION TEST
The abrasion value of Aggregates when tested in accordance with the method specified in I.S 2386 (Part -IV) using Los-Angles machine shall not exceed 30% for Aggregates to be used in concrete for wearing surface and 50% for aggregate to be used in other concrete.

2. AGGREGATE CRUSHING STRENGTH TEST

Aggregate crushing value, when determined in accordance with I.S. 2386 (Part- IV) 1963 shall not exceed 45 % for aggregate used for concrete other then wearing surface and 30 % for wearing surfaces. As an alternative to the crushing strength test, aggregate impact value shall be found out with the method specified in I.S. 2386 (Part - IV) 1963. The aggregate impact value shall not exceed 45 % by weight for aggregates used for concrete for other then wearing surfaces, and 30 % by weight for concrete for wearing surfaces.

3. SOUNDNESS TEST

The coarse aggregate to be used for all concrete works shall pass a sodium-or magnesium sulphate accelerated soundness test specified in I.S. 2386 (Part - V) 1963 and the average loss of weight after 5 cycles shall not exceed the limits specified in clause 3.6 of I.S. 383-1970.

For every 500 m3 of coarse aggregate, Soundness Tests on coarse aggregate shall be conducted by the Contractor. Soundness after 5 cycles by MgSo4 (Magnesium Sulphate) shall be less than 18 % and Soundness after 5 cycles by Na2 SO4 (Sodium Sulphate) shall be less than 12 % for acceptance of the coarse aggregate.

4. SPECIFIC GRAVITY :

The coarse aggregate shall have specific gravity of 2.60 minimum.

5. DELETERIOUS MATERIAL

The maximum quantity of deleterious materials in coarse aggregates shall not exceed the limits specified in Table I of I.S. 383-1 970 when tested in accordance with I.S. 2386-1 963.

No separate payment will be made for tests of materials. If sand and coarse aggregate are to be obtained from a deposit not previously tested and approved by the Project Manager, the contractor shall submit representative samples for pre-construction test and approval, well in advance before the sand and coarse aggregates are required for use. Each sample shall approximately consist of 100 Kg. of material. In addition to pre-construction tests, the approval of deposits, the Project Manager may test the aggregates for their suitability during their processing. The contractor shall provide
such facilities as may be necessary for procuring representative samples free of cost at the aggregate processing plant and at the batch plant. Final compliance of aggregates will be based on the samples taken from the batch plant or mixing platform.

Use and development of any such deposit shall be subject to the approval by the Project Manager. Any royalties (or other charges) required for materials taken from deposits either owned by the State Government or controlled by the Department of Mines and Geology, Government of India or owned by any other person shall be paid by the Contractor.

c) Approval of Quarry / Quarries for Obtaining Coarse Aggregate & Fine Aggregate

Some aggregates containing particular varieties of silica may be susceptible to attack by alkalis (Na2 O and K2 O) originating from cement or other sources, producing an expansive reaction which can cause cracking and disruption of concrete. This is known as Alkali-Silica Reaction (ASR) or Alkali – Aggregate Reaction (AAR). ASR / AAR is a ‘concrete cancer’. It is therefore essential that following tests are got conducted to pre-screen the coarse & fine aggregate sources / quarries in respect of the presence of any reactive aggregates. These being special tests, these are to be got conducted from reputed institutions well versed in conducting such tests, such as, National Council of Cement & Building Materials, Ballabgarh (under Govt. of India) or CSMRS (Central Soil & Materials Research Organization, Delhi under GOI).

(a) Petrographic Examination of Aggregates. Potentially reactive components of an aggregate can be identified and quantified through petrographic examination. It is a very useful screening procedure that should be done early in the development and testing of the source of aggregate. In case, the petrographic examination shows presence of more than 20 % strained quatz having an undulatory extinction angle (an optical property indicating deformed crystals) greater than 15 degrees, the aggregate is considered potentially reactive and it is required to be tested for deleterious expansion as per Indian Standard IS:383-2016.

(b) Mortar Bar Expansion Test. It is an important test to determine whether a cement-aggregate combination is potentially alkali-silica reactive or not. This test is explained in ASTM C 227 (American Society of Testing Materials C 227). An average length change (for 3 mortar bars) greater than 0.05 % at 3 months and greater than 0.10 % at 6 months is considered to be excessive and is indicative of potentially deleterious ASR (Alkali-Silica Reaction). Specimens exhibiting expansion greater than 0.05 % at 3 months but less than 0.10 % at 6 months are not considered to be deleterious by ASTM C 33. This test is considered to be an accurate
indicator of a highly reactive silicious aggregate’s potential for deleterious reactivity with alkalis in concrete.

(c) Accelerated Mortar-Bar Expansion Test. This test is modification of ASTM C 227 test. As per this test, if after 22 days, the average expansion is less than or equal to 0.10 %, the cement-aggregate combination is considered to be non reactive. If the average expansion is more than 0.10 %, the aggregate is considered to be deleteriously reactive. The accelerated mortar bar test is quick and reliable.

**d) Preventive Measures**

In case, the aggregates are determined to be reactive, alternate sources / quarries shall be explored for obtaining non reactive aggregates. If still not possible, preventive measure / measures for controlling Alkali-Silica Reaction shall be taken. A practical and result-oriented measure is to use “fly ash” in the design of concrete mixes. Inclusion of fly ash substantially reduces the Alkali-Silica Reaction (ASR), there by, protecting the concrete (and the steel reinforcement) from deterioration which results from the expansion. Decrease in ASR comes from the fact that fly ash reacts chemically with and absorbs Alkalis in the cement, there by, making these unavailable for reaction with reactive aggregate.

**1.13. Batching Of Concrete**

Production of concrete shall be done with fully automatic intelligent concrete batcher. All the production data of batcher should be program in the plan. The computer of plant shall be protected from password, once the mix ratio has been program. Password of plant shall be kept with Project Manager. All the data of production of concrete shall be stored in memory of batcher and also stored in cloud through internet. This will facilitate the employer to access the production data from remote. Contractor shall submit hard copy of batching details along with the running bills. The contractor shall notify the Project Manager 24 hours before batching concrete. Unless inspection is waived in each case, batching shall be performed only in the presence of an Engineer authorized by Project Manager.

The contractor shall provide, maintain and operate the equipment as required to accurately determine and control the prescribed amounts of the various materials entering the concrete mixers. The quantities of cement sand and each size of coarse aggregate entering each batch of concrete shall be determined by individual weight. Cement has to be weighed separately from the aggregates. Sand and coarse aggregate may be weighed with separate scales and hoppers.
The grading of aggregates shall be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportions, the different sizes being stacked in separate stock piles, the materials shall be stock piled a day before use. The grading of coarse and fine aggregates will be checked as frequently as directed by the Project Manager. Water shall be added by weight or measured by volume in calibrated tanks. The amount of added water shall be adjusted to compensate for any observed variations in the moisture contents. Determinations of moisture content in the aggregate shall be in accordance with I.S 2386 (Part -III) 1963 (Indian Standard Method of test for aggregate for concrete Part -111). The amount of surface water carried by aggregates will be determined in accordance with IS 456-1978.

1.13.1. Mixing

a) General

The concrete ingredients shall be thoroughly mixed in fully automatic mixers designed to positively ensure uniform distribution of all the component materials. Mixing shall be done as per clause 9 of I.S 456-2000. The mixer should comply with I.S. 1791-1985 (I.S Specifications for batch type concrete mixers). Where small quantities of concrete are involved and work sites are fairly scattered, Project Manager may allow use of standard mechanical mixers for the production of concrete. The mixers shall be fitted with water measuring (metering) devices. In the absence of the metering device, it shall be ensured by the Contractor that measured quantity of water is added to the concrete mix ingredients with calibrated transparent buckets / transparent plastic mugs duly calibrated in order to strictly maintain the specified water-cement ratio. Also, proper “gauge boxes” shall be used for specified proportioning of cement, sand, fine aggregate and coarse aggregate. Mixing time of the concrete mix ingredients shall be at least 2 minutes to ensure that there is a uniform distribution of materials and the mass is uniform in colour and consistency. If any ‘segregation’ is observed in the concrete mix after unloading from the mixer, the concrete shall be remixed. Workability (slump) shall be checked at frequent intervals.

The concrete as discharge from the mixer, shall be uniform in composition and consistency from batch to batch. Workability shall be checked at frequent intervals as per I.S. 1199-1959. Mixers shall be examined regularly by the Project Manager or his authorized Engineer for changes in condition due to accumulation of hardened concrete or mortar or to wear of blades. The mixing shall be continued until there is a uniform in color and consistency and to the satisfaction of the Project Manager. If there is aggregation after unloading the concrete should be remixed.
b) Temperature Of Concrete

Fresh structural concrete and fresh dam lining concrete shall be placed at temperature of between 15° C to 30° C. During hot or cold weather, the concreting should be done as per the procedure set in I.S. 7861-(Part-D-1975 or I.S 7861 (Part – II).

The temperature of concrete at the batch plant shall be adjusted to assure that the specified concrete temperature is attained at the placement. The contractor shall not be entitled for any additional compensation due to the foregoing requirements.

1.14. FORM WORK

a) General

Form Work should confirm criteria stipulated in IS 456 and IS 14687.

Form shall be used wherever necessary, to confine the concrete and shaping it to the required lines. If a type of form does not consistently perform in an acceptable manner, as determined by the Project Manager, the type of form shall be changed and method of erection shall be modified by the Contractor subject to approval of the Project Manager.

Plumb and string lines shall be installed before, and maintained during concrete placement. Such lines shall be used by the Contractor's personnel and by the Project Manager and shall be in sufficient number and properly installed as determined by the Project Manager. During concrete placement, the contractor shall continuously monitor plumb and string line, form positions and immediately correct deficiencies.

Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete and shall be maintained rigidly in position. Where form vibrators are to be used, forms shall be sufficiently rigid to effectively transmit energy from the form vibrators to the concrete, while not damaging or altering the positions of forms. Forms shall be sufficiently tight to prevent loss of mortar from the concrete. Chamfer strips shall be placed to produce beveled edges on permanently exposed concrete surfaces. Interior angle of intersecting concrete surfaces and edges of construction joints shall not be beveled except where indicated on the drawings.

Suitable struts or stiffeners or ties shall be used for the form work wherever necessary. All supports shall be braced and cross braced into two directions. All splices and braces shall be secured by bolting unless specially intended otherwise. All struts shall be firmly supported against settlement and slipping, by suitable means as directed. All supports shall be cut square at both ends and firmly supported against settlement and slipping. When the form work is supported on soils, sleepers etc., shall be used to properly disperse
the loads. In case, the supports rest on already, completed beam or slab, suitable props shall be provided under the latter.

b) The form work shall be of well seasoned timber or steel of appropriate thinness as per specification to avoid any undulations during the use. When timber forms are used, they shall be lined with M.S. Sheet or other suitable smooth faced non-absorbent materials as specified. Supports may be of timber or steel. Suitable wedges in pairs to facilitate adjustment and subsequent releasing of forms shall be provided preferably at the upper end of the supports. The details of the proposed form work and supports shall be submitted to the Project Manager and got approved before erection.

c) In case of columns, retaining walls or deep vertical component, the height of the column shall facilitate placement and compaction of concrete and suitable arrangement may be made for securing the forms to the already poured concrete for placing the subsequent lifts. No steel ties or wires used for securing this form work shall be left exposed of the face of the finished work.

d) Suitable inserts for blackouts for electrical and other service fixtures where necessary shall be provided in the required locations as specified.

e) Cleaning and oiling of Forms:- At the time the concrete is placed in forms, the surfaces of the forms shall be free from encrustations of mortar, grout or other foreign material. Before concrete is placed, the surface of the forms shall be oiled with commercial forms of oil.

f) Removal of Forms:

The stripping of form work shall conform to relevant clause of I.S 456-2000. The Contractor shall be liable for damage and injury caused by removing forms before the concrete has gained sufficient strength. Forms on upper sloping faces of concrete such as forms on the water sides of warped transitions, shall be removed as soon as the concrete has attained sufficient stiffness to prevent sagging. Any needed repairs or treatment required on such slopping surfaces shall be performed at one and be followed immediately by the permitted curing.

To avoid injury appearance of concrete that might result from swelling of forms, wood forms for wall openings shall be loosened as soon as the loosening can be accomplished without damages to the concrete. Forms for the opening shall be constructed as to facilitate such loosening. Forms shall be removed with care so as to avoid injury to concrete and any concrete so damaged shall be repaired.
g) Cost

The cost of furnishing all materials and performing all work for constructing forms, including any necessary treatment or coating of forms will be paid at applicable prices bid in the schedule.

h) Measurement and payment

The formwork will be measured in Sqm. of surface area of concrete surface to which forms are necessary.

Payment for formwork in BOQ includes 1) all costs for supplying labor, materials, T&P, machineries and consumables required for erecting the forms to line, level and plumb as per approved drawing and all such costs necessary for removing the forms after the concrete has hardened, 2) all other costs necessary for carrying out formwork operation mentioned, 3) All costs for carrying out repair of hardened concrete 4) any other incidental expenditure to complete the finished item of work as per specification and direction of Project Manager.

1.15. TOLERANCES FOR CONCRETE CONSTRUCTIONS

a) General

Tolerances are defined as allowable variations from specified lines, grades, and dimensions and as the allowable magnitude of the surface irregularities. Allowable variations from specified lines, grades and dimensions are listed as given under sub paragraph (b) below.

The intent of this paragraph is to established tolerances that are consistent with modern construction practice that is governed by the effect that permissible variations may have upon a structure. The Project Manager reserves the right to diminish the tolerances set-forth herein if such tolerances impair the structural action, operational function or architectural appearance of a structure or position thereof.

Concrete shall be within all stated tolerances even though more than one tolerance may be specified for a particular concrete structure. Provided that the specified variation for one element of the structure shall not apply when it will permit another element of the structure to exceed its alterable variation. Where tolerances are not specified for particular structure, tolerances shall be those specified for a similar work. As an exception to the general provisions, specific tolerances shown herein in connection with any dimension shall govern. The Contractor shall be responsible for finishing the concrete forms within the limits necessary to insure that the completed work will be within the tolerance limits specified. The defective work where the tolerance limit is exceeded shall be remedied in
accordance with the provisions mentioned under Concrete surface irregularities” in succeeding paragraphs.

b) Variations From Specified Lines, Grades And Dimension

Hardened concrete structure shall be checked by the contractor and will be subject to such inspection and measurement as needed to determine that the structures are within the tolerance specified in the table below.

Variation is defined as the distance between the actual position of the structure or any element of the structure and the specified position in plan for the structure or the particular element. Plus or minus variations shown indicate a permitted actual position up or down and in or out from the specified position in plan. Variations not designated as plus or minus indicate the maximum deviation permitted between designated successive points on the completed element of construction.

Specified position in plan is defined as the lines, grade and dimensions described in those specifications or shown on the drawings or as otherwise prescribed by the Project Manager.

c) Tolerances For Dam Structures

1. Deviations from specified dimensions of cross section of columns, beams, piers and slabs[(-6) mm to (+) 12 mm]

2. Deviations from dimensions of footing:
   a) Dimensions in plan = (-) 12 mm to (+) 50 mm
   b) Eccentricity = (±) 0.02 times width of footing in the direction of deviation but not more than 50 mm.
   c) Thickness = (±) 0.05 times the specified thickness.

Note: Tolerances apply to concrete dimensions only, but not for positioning of vertical reinforcing bars or dowels.

d) Concrete surface irregularities

i. GENERAL

Bulges, depressions and offsets are defined as concrete surface irregularities. Concrete surface irregularities are classified as "abrupt" or "gradual" and are measured relative to the actual concrete surface.
ii. ABRUPT SURFACE IRREGULARITIES

Abrupt surface irregularities are defined herein as offsets such as those caused by misplaced or loose forms, loose knots in form, or other similar forming faults. Abrupt surface irregularities are measured using a straight edge held firmly against the concrete surface over the irregularity and the magnitude of the offset is determined by direct measurement.

iii. GRADUAL SURFACE IRREGULARITIES

Gradual surface irregularities are defined herein as bulges and depressions resulting in gradual changes on the concrete surface. Gradual surface irregularities are measured using a suitable template conforming to the design profile of the concrete surface being examined. The magnitude of the gradual surface irregularities is defined herein as measures of the rate of change in slopes of the concrete surface.

The surface irregularities shall not exceed 6 mm for bottom slab and 12 mm for side slopes when tested with a straight edge of 1.5 meter in length.

The magnitude of gradual surface irregularities on concrete shall be checked by the Contractor to ensure that the surfaces are within the specified tolerances. The Project Manager will also make such checks of hardened concrete surfaces as determined necessary to insure compliance with such specifications.

iv. Repair Of Hardened Concrete Not Within Specified Tolerances

Hardened concrete which is not within specified tolerances shall be repaired to bring it within those tolerances. Such repair shall be in accordance and shall be accomplished in a manner approved by the Project Manager. Concrete repair to bring concrete within the tolerances shall be done only after consultation with a representative of Project Manager regarding the method of repair. The Project Manager shall be notified as to the time when repair will be performed.

Concrete shall be finished in a manner which will result in concrete surface with a uniform appearance. Any rough projections can then be rubbed down and the whole surface brought to an even finish by rubbing with a wooden float using a mortar of one part cement by two parts of coarse sand as an abrasive, the mortar at the same time filling the voids. A neat cement wash shall than be applied to give a smooth surface. If the concrete has set hard, the fins and rough projections, if any, shall be removed by using carborundum brick or a paved grinding machine by chipping, before finishing off with the smoothing wash. If the work of chipping is not done with care or if the surface exposed after removal of the forms cannot be satisfactorily dealt with in this manner due to bad
work or for other reasons, a coat of cement plaster of 1:2 of thickness as ordered by the Project Manager shall be applied.

**No extra payment will be given for finishing concrete surface as instructed above in this clause.**

v. **Prevention Of Repeated Failure To Meet Tolerances**

When concrete placements result in hardened concrete that does not meet the specified tolerances, the contractor shall submit to the Project Manager an outline of all prevention actions such as modification to form, modified procedure for setting screeds, and different finishing techniques to be implemented by the contractor to avoid repeated failure.

The Project Manager reserves the right to delay concrete placement until the contractor implements such preventive actions which are approved by the Project Manager.

1.16. **PLACING OF CONCRETE**

a) **General**

The contractor shall notify the Project Manager before batching begins for placement of concrete. Placing shall be performed only in the presence of Project Manager's representative. Placement shall not begin until after preparations are complete and the concrete placement check out card has been signed by the contractor or his representative and the authorized representative of the Project Manager substantiating completion of all preparation for that placement.

b) **Transportation**

The transportation of concrete shall conform to clause 13 of I.S. 456-2000. Concrete shall be deposited as near as practical to its final position. The use of Aluminum pipe or Aluminum chutes for delivery of concrete will not be permitted. Concrete buckets shall be capable of promptly discharging concrete of the specified mix design and the dumping mechanism shall be capable of discharging at one location, Medium portions of concrete from a full bucket.

c) **Placing**

The placing of concrete shall be in accordance with relevant clause of I.S. 456-2000. Concrete shall be deposited as nearly as practical in its final position and shall not be allowed to placed in running water and placed concrete shall not be subjected to running water until the concrete has hardened.
Concrete shall be deposited as nearly as practical in its final position and shall not be allowed to flow in such a manner that the lateral movement will cause segregation of the coarse aggregate from the concrete mass. Methods and equipment employed in depositing concrete in forms shall minimize clusters of coarse aggregates, clusters that occur shall be scattered before the concrete is vibrated.

Forms shall be constantly monitored and their position adjusted as necessary during concrete placement in accordance.

All concrete except dam lining shall be placed in approximately horizontal layers. The depth of layers shall not exceed 45 cm. The Project Manager reserves the right to require lesser depths of layers where concrete cannot otherwise be placed and consolidated in accordance with the requirements of these specifications. All contraction joints which intersect exposed concrete surface shall be made level and straight to plumb except as shown otherwise on the drawings.

A cold joint is an unplanned joints resulting when a concrete surface hardens before the next batch is placed against it, cold joints would be allowed only in the event of equipment breakdown or other unavoidable prolonged interruption of continuous placing. If such unavoidable delays in placing occur which make it appear that unconsolidated concrete may harden to the extent that later vibration will not fully consolidate it, the contractor shall immediately consolidate such concrete to a stable and uniform slope. If delay of placement is then short enough to permit penetration of the underlying concrete placement shall resume with particular care being taken to thoroughly penetrate and re-vibrate the concrete surface placed before the delay. If concrete cannot be penetrated with vibrator, the cold joint shall be then treated as a construction joint.

Care shall be taken to prevent cold joints when placing concrete in any part of the work. The concrete placing rate shall ensure concrete is placed while the previously placed adjacent concrete is plastic so that the concrete can be made monolithic by normal use of vibrators / tamping.

Concrete shall not be placed in rain sufficiently heavy or prolonged to wash mortar from concrete. A cold joints may necessarily result from prolonged heavy rainfall.

The contractor shall not be entitled to any additional payment, over the unit price bid in the scheduled for concrete by reason of any limitation in the placing of concrete, required under the provisions of this paragraph.

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The contractor shall not be entitled to any additional payment, over the unit price bid in the scheduled for concrete by reason of any limitation in the placing of concrete, required under the provisions of this paragraph.

The Contractor shall introduce strict supervision and ensure that the reinforcement is erected as shown in the drawings and, that, the ‘Nominal Cover’ is within the tolerance levels specified in IS:456-2000 to the effect that actual concrete cover shall not deviate from the required nominal cover by + 10 mm & minus 0 mm. The 'Minimum Nominal Cover' to meet Durability Requirements shall be as indicated below, as per IS:456-2000:

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Nominal Cover in mm not Less Than</th>
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<tbody>
<tr>
<td>Mild</td>
<td>20 mm</td>
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<tr>
<td>Moderate</td>
<td>30 mm</td>
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</table>
Severe 45 mm  
Very Severe 50 mm  
Extreme 75 mm  

IMPORTANCE of Maintaining Specified Nominal Cover for Durability Of RCC Structures. It is essential that RCC structures remain durable for a very long period and, that, they do not suffer pre-mature deterioration due to corrosion of steel reinforcement embedded in. It is of paramount importance to strictly maintain the ‘nominal cover of steel reinforcement’ since the ‘cover thickness’ is the path through which the environmental elements (carbon dioxide, moisture, oxygen, chlorides etc) penetrate the body of concrete and travel to reach the reinforcement bars and initiate the corrosion process. In case, due to lack of supervision by the Contractor, the actual cover of reinforcement bars is much less than the designed / specified cover, the deleterious environmental elements will quickly reach the bars and shall initiate the corrosion thereof. Subsequently, in few years time, steel bars shall suffer heavy corrosion. Product of corrosion being almost two times that of the original volume of steel, bursting pressure shall cause cracking & spalling of concrete making the RCC structure suffer severe premature deterioration and damages.

Monitoring Of Nominal Cover with Logging Cover Meter. In order to ensure that the Contractor erects the reinforcement strictly adhering to the designed / specified Nominal Cover within the tolerance levels and, that, the reinforcement does not get displaced during concrete placement, Project Manager or his Representative shall check the actual nominal cover after the concrete is placed in the respective lifts through deployment of ‘Logging Cover Meter’. It is a device which measures the depth of concrete cover over the reinforcement bars. A pre set value of Nominal Cover (viz designed cover/specified cover) is entered into the ‘Data logger’ and the head of the Logging Cover Meter is moved over the concrete surface. All values of Nominal Cover less than the pre-set value are recorded automatically. Also, an audible alarm signal is given by the device. This device is battery operated and all data can also be downloaded to any PC-Compatible computer. In case, scanning of the concrete surface of a particular lift indicates the actual cover to be less than the designed/specified cover, Project Manager can direct the contractor to dismantle the particular lift and re-do the job at his expense itself. Thus, monitoring by the Logging Cover Meter shall act as a big deterrent and make the Contractor do the job correctly.
1.17. CONSTRUCTION JOINTS

Joints shall confirm criteria specified in IS 456 and IS 11817.

When the work has to be resumed on a surface which has hardened, such surface shall be roughened. It shall then be swept clean & thoroughly wetted. For vertical joints neat cement slurry shall be applied on the surface before it is dry. For horizontal joints the surface shall be covered with a layer of mortar about 10 to 15 mm thick composed of cement and sand in the same ratio as the cement and sand in concrete mix. This layer of cement slurry or mortar shall be freshly mixed and applied immediately before placing of the concrete.

Where the concrete has not fully hardened all imperfections shall be removed by scrubbing the wet surface with wire or bristle brushes, care being taken to avoid dislodgement of particles or aggregate. The surface shall be thoroughly wetted end all free water removed. The surface shall then be coated with neat cement slurry and fresh concrete laid.

1.18. CONTRACTION JOINTS

Contraction joints serve to provide for volumetric shrinkage of monolithic concrete and or movement between monolithic unit at established joints, thus preventing formation of objectionable shrinkage cracks elsewhere in concrete. Prior to application of wax based curing compound to contraction joints, the surfaces of all joints shall be cleaned thoroughly of accretion of concrete or other foreign material by scraping, chipping or other means approved by the Project Manager. Water stops, reinforcing bars and other embedded items shall be free of curing compound when adjoining concrete is placed.

1.19. COMPACTION

The compaction of concrete shall conform to clause 13.3 of I.S 456-2000.

Concrete shall be consolidated by vibrators/ tampers. The vibrations shall be sufficient to remove all undesirable air voids from the concrete, including the air voids trapped against the forms. After consolidation, the concrete shall be free of rock pockets and honey comb areas and shall be closed against all surfaces of forms and embedded materials. All concrete shall be properly consolidated before it hardens.

Except as herein after provided, consolidation of all concrete shall be by immersion-type vibrators, immersion type vibrators shall be operated in nearly vertical position and the vibrating head shall penetrate and re-vibrate the concrete in the upper portion of the underlying layer. Care shall be exercised to avoid contact of the vibrating head with embedded items and with formed surfaces which will later be exposed to view. Concrete
shall not be placed upon either plastic concrete until the previously placed concrete has been thoroughly consolidated.

Immersion type vibrators shall be operated at speeds of at least 7000 revolutions per minute when immersed in concrete. Form vibrators shall operate at speeds of at least 8000 revolutions per minute when being used to consolidate concrete. The Contractor shall immediately replace improperly operating vibrators with acceptable vibrators.

Form vibrators shall be used in conjunction with slip form lining machines to consolidate concrete in dam linings. Such vibrators shall be arranged for effective uniform consolidation of the concrete. The Project Manager or his representative may remove samples of the hardened concerns for testing and examination, and the Contractor shall repair, at no cost to the Government, concrete from which such samples are removed.

1.20. **FINISHES AND FINISHING**

The requirements for finishing of concrete surface shall be as specified in this paragraph, or as otherwise indicated on the drawings. The contractor shall notify the Project Manager before finishing concrete. Unless inspection is waived, in each specific case, finishing of concrete shall be performed only when Project Manager's representative is present. Concrete surface will be tested by the Project Manager in accordance, where necessary to determine whether the concrete surface is within the specified tolerances. Finished concrete which is not within the specified tolerances shall be repaired in accordance.

Interior surface shall be sloped for drainage where shown on the drawings or as directed. Surfaces which will be exposed to the weather and which would normally be level, shall be sloped for drainage.

Floating may be performed by use of hand or power driven equipment. Floating shall be started as soon as the screened surface has stiffened sufficiently and shall be the minimum necessary to produce a surface that is free from screened marks and is uniform in texture. Joints and edges shall be tooled where shown on the drawing or as directed.

After the surface of road way slabs of concrete bridges, have been wood floated, the surfaces shall be given a broom finish. The finish shall be applied when the water sheet has practically disappeared. The broom shall be drawn transversely across the pavement with adjacent strokes slightly overlapping. The brooming shall be completed before the concrete is in such condition that the surface will be torn or unduly roughened by the operation. The finished surfaces shall have a uniform appearance and shall be free of corrugations exceeding 1.5 millimeter in depth. Broom shall be of quality, size and
construction be so operated as to produce a surface finish satisfactory to the Project Manager.

1.21. PROTECTION

The contractor shall protect all concrete against damage until final acceptance by the Project Manager.

When precipitation appears imminent, the contractor shall immediately make ready at the placement site all materials which may be required for protection of fresh concrete. The Project Manager may delay placement of concrete until adequate provisions for protection against weather are made.

All fresh concrete surfaces shall be protected from contamination and from foot traffic until the concrete has hardened. Hardened concrete surfaces which have to receive finish shall be protected against damage from foot traffic and the construction activity by covering with protective mats, plywood, or by other effective means. Method of protection shall be subject to approval by the Project Manager.

1.22. CURING

a) General

The curing is guided by Clause 13.5 of IS: 456-2000.

The contractor shall furnish all materials and perform all work required for curing concrete. All concrete including bed and sides of dam lining shall be cured by water curing for 28 days.

The uniformed top surfaces of bridges decks shall be cured for 28 days with a damp sand cover or curing mat cover. The sand or curing mats shall not be kept so wet as to allow water to drain from them and stain other concrete. The sand or curing mats shall be removed after the expire of the curing period.

All concrete surfaces shall be treated as specified to prevent loss of moisture from the concrete until the required curing period elapsed or until immediately prior to placement of other concrete or backfill against those surfaces. Only sufficient time to prepare construction joint surfaces and to bring them to a surface dry condition shall be allowed between discontinuance of curing and placement of adjacent concrete.

Forms shall be removed after the concrete has hardened sufficiently conforming to clause 11.3 of I.S 456-2000 to prevent structural collapse or other damage by careful form removal. Where required, repair of all minor surface imperfection shall be made immediately after form removal and prior to curing, minor surface repair shall be
completed within 2 hours after form removal and shall be immediately followed by the initiation of curing by the applicable method specified herein. Concrete surfaces shall be kept continuously moist after form removal until initiation of curing.

In case, the Project Manager finds that the curing arrangements mobilized by the Contractor are deficient and, that, he is not doing efficient curing of concrete, the Project Manager shall have the right to direct the Contractor to undertake curing of concrete with ‘Membrane-Forming Curing Compound.’

**Specifications Of Curing Compound.** The Curing Compound shall be white pigmented membrane forming compound conforming to ASTM –C-309 – 81 Type 2 Standard. The white pigmented compound is advantageous since it reflects sun light, there by, minimizing the evaporation of water from concrete / shotcrete surfaces. Contractor shall procure the Curing Compound from a reputed supplier. The Curing Compound shall meet the requirement of the ‘water-retention test’ as per ASTM – C- 156-80 which specifies that the loss of water is to be not more than 0.55 kg/m² of the surface area in 72 hours. The Curing Compound shall also conform to the ASTM – E – 97 test to the effect that the ‘day light reflectance’ of the Curing Compound is not less than 60 % of that of Magnesium Oxide (MgO₂). The Curing Compound shall be sprayed mechanically with a power nozzle uniformly on the concrete surface as soon as the bleeding water or shine disappears. A dosage of one litre of Curing Compound for covering 4 m² surface area of concrete is O.K. to provide effective curing

b) Materials

Concrete cured with water shall be kept wet for at least 28 days from the time the concrete has attained sufficient set to prevent detrimental efforts to the concrete surfaces. The concrete surfaces to be cured shall be kept wet covering them with water-saturated materials by using a system of perforated pipes, mechanical sprinklers or porous hose, or by other methods which will keep all surface continuously (not periodically) wet. All curing methods are subject to approval of Project Manager.

c) COST

The cost of furnishing all materials and performing all work for curing concrete shall be included in the price bid in the bill of quantities for the concrete on which the particular curing methods are required.

### 1.23. REPAIR OF CONCRETE

Concrete shall be repaired in accordance with clause 5.7 of I.S 3873-1978. Imperfections and irregularities on concrete surface shall be corrected in accordance.
1.23.1. TYPES OF REPAIR

Repairs to concrete surfaces and addition where required shall be made by cutting regular opening into the concrete and placing fresh concrete to the required lines. The chipped openings shall be sharp and shall not be less than 70 mm. in depth. The fresh concrete shall be reinforced and chipped and troweled to the surface of the openings. The concrete shall be placed in layers not more than 20 mm, in thickness after being completed each layer shall be compacted thoroughly. All exposed concrete surfaces shall be cleaned of impurities, lumps of mortar or grout and unsightly stains.

1.23.2. COST

The cost of furnishing all materials and performing all work required in the repair of concrete shall be borne by the contractor.

1.24. MEASUREMENT OF CONCRETE

Measurement for payment of concrete required to be placed directly upon or against surfaces of excavation will be made to the lines of construction as per approved drawing.

Measurement for payment of concrete will be made to the neat lines of structures constructed as shown on the approved drawings and prescribed in the specification. The unit of measurement will be cubic meter. In measuring concrete for payment, the volume of all opening, fixtures, embedded pipes and metal work, each of which is larger than 0.1 square meter in cross section will be deducted.

1.24.1. PAYMENT FOR CONCRETE

Concrete works of different grades and specifications are to be executed as per items of BOQ. The measurements for these items will be recorded in cubic meter basing on dimensions of concrete as per execution with reference to approved drawings. The item rates for different concrete items includes all costs for labor, material, T&P, machineries, equipments and consumables required for carrying out the following operations.

(i) Carrying out all necessary operations for setting out works, clearing, preparation of beds, removal of silt etc. described under Technical Specifications..

(ii) Laboratory testing of sample of aggregates, cement, water.

(iii) Procurement of fine aggregates, coarse aggregates, cement, admixtures and water at site of work. (Procurement cost of Reinforcement bars & placement are excluded)

(iv) Batching, mixing, laying of concrete, vibrating and curing as per Specifications.

(v) Erection of gangways, scaffolding, chutes and dismantling the same after completion of work.
(vi) Construction of approach road, haul road, site illumination, construction of coffer
dam till completion of the work and subsequent removal at appropriate time, and all
mobilization and demobilization cost to complete the above operations.

(vii) Recording of photographs. Quality control works.

(viii) Payment of all taxes, royalties, GST etc.

(ix) Provision of contraction joints and provision for embedment of items as per
approved drawings.

(x) Cost of all safety precautions.

(xi) Any other incidental cost to complete the items of work as per specification and
direction of Project Manager.

(xii) Measurement & Payment will be made as per BOQ regardless of methods and type
of equipments used for execution of the work.

The cost of concrete used in (1) wasted concrete, (2) in replacement of damaged or
defective concrete, (3) in extra concrete required as a result of over excavation, (4) in
concrete placed by the contractor in excavations intentionally performed to facilitate the
contractor's operations, and (5) Extra concrete due to tolerance in concrete finish shall be
borne by the contractor. No extra payment shall be made to contractors for such
additional quantity.
9 Quality Assurance & Quality Control

Quality Assurance Plan & Quality Checking shall be prepared by Contractor within 21 days of issue of Letter of Acceptance by Employer & jointly agreed to with in next 15 days their- after.

9.1 Quality Control:

The Engineer-in-Charge shall introduce O.K. Card System to ensure methodical enforcement of specifications during the execution of various works to promote construction quality of works. The printed O.K. Cards, work-wise, shall be filled activity-wise by the contractor/his authorized representative and then, put up to the field engineers(JE/AE/AEE/ EE). Any deficiency observed by the field engineer/quality control engineer shall be promptly rectified by the contractor, failing which work may be rejected.

In order to ensure QA & QC aspects of the construction activities, the E-I-C would control through second party.
11. QUALITY CONTROL MEASURES & FREQUENCY OF TESTING

11.1 General

(i) For all field test contractor shall established a fully equipped field laboratory at site at his own cost with all testing equipment, laboratory personnel as desired by Project Manager for smooth working of quality control lab. The Contractor will maintain the record of testing.

(ii) Also the contractor will provide all necessary laboratory personnel labor, tools, equipment etc for observing the testing of material and other as and when demand at site at his own level.

(iii) Any test / periodically test which are being conducted time to time outside field laboratory will be got conducted by contractor at his own cost, as per direction of Project Manager from recognized laboratory.

(iv) The quality control manual and relevant IS Code shall be basis of conducting all such tests.

(iv) The sample of each specimen shall be preserved under the sealed cover duly signed by the site Engineer and Authorized representative of contractor. The sample shall be preserved and deposited in the office of the executive wing by the Contractor.

(vi) The contractor shall have to exercise quality control measures and frequency of testing as defined in the specification.

(i) The Quality control of the department and relevant specification and IS Code shall be basis for testing of materials, Civil work and required testing after completion of the work in case of any discrepancy relevant IS Code shall be final.

The actual frequencies shall be determined by the Project Manager to suit the nature and variability of material placed and the rate of fill placement with the objective of ensuring best quality control and quality construction.

11.2 Quality Control Measures”

A Central Quality Control Laboratory and field labs with requisite equipment as per requirement satisfactory to the Project Manager, to be established by the contractor at convenient location as per direction of Project Manager, along with the required number of mobile testing units with requisite testing equipment relevant to the tests required to be performed in the Package. vehicles and personnel regarding testing of material and other test concerning with specification of work, shall be arranged by the bidder. Tests which
cannot be conducted at central laboratory will have to be got done at Dehradun or at such other laboratory of repute as directed by Project Manager by the bidder at his own cost. No separate payment will be made to the bidder on this account by the Department.

O.K. cards shall have to be maintained by contractor for each major activity specified in bid document, bidder shall get it issued from Project Manager. The O.K. cards contain important entries/information during execution of work at all stages and liable to be referred/perused at a later stage also.

The O.K. card is condensed form of specifications and essential requirement for achieving specified workmanship and quality level of output. Each work is subdivided into various construction activities in proper sequence/order methodology for construction of work.

Besides the location and type of work, the first column of O.K. card is to be filled by the construction agency (Contractor) by preparing each feature and making it ready for inspection by project construction engineer who okay through his signatures and then puts up to Q.C. engineer for his final O.K. If Q.C. Engineer is not available at site then O.K. given by construction engineer will be treated as final, if anything otherwise is not observed. If anything otherwise be found, the O.K. card shall not be signed by him and ask the construction engineer/Agency for necessary rectification before start the work.

Subsequently, O.K. card should refer to defects removed, if pointed out previously in O.K. card and counter reference to the previous check and should be singed of Okayed.

Note: All expenditure towards testing before commencement of work, doing work and after completion to test finished section shall have to be borne by bidder. The expenditure towards laboratory testing, transportation of samples, vehicles requires for supervision of work etc. shall have to be borne by bidder. The bidder should quote his rate accordingly. Separate payment for their activity shall not be payable.
11.2.1 O.K. Card for Quality Control of Works

*PLAIN & REINFORCED CEMENT CONCRETE*

Name of Division: -
Name of work: -
Agreement No.:
Name of Agency: -
Date: -
Location: -

<table>
<thead>
<tr>
<th>Description of activities</th>
<th>Remarks &amp; Dated Signature</th>
<th>Remarks &amp; Dated Signature of Construction Staff</th>
<th>Remarks &amp; Dated Signature of Q.C./inspection Engineer</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Supervisor</td>
<td>JE</td>
</tr>
</tbody>
</table>

**MATERIAL SUITABILITY**

1. Cement

2. Steel

3. Aggregate 20 mm

4. Sand

5. Water

6. Admixture

**OK FOR MATERIALS**

**Form work & Centering**

(i) Tightness, Stability, Smoothness

(ii) Cleaning, oiling, Perfectness of form work

(iii) R.L. of Centering/lift and its alignment

(iv) Checking of reinforcement

**OK FOR REINFORCEMENT**

**Tool & Plants**

(i) Mixers & Vibrator
<table>
<thead>
<tr>
<th>Description of activities</th>
<th>Remarks &amp; Dated Signature</th>
<th>Remarks &amp; Dated Signature of Construction Staff</th>
<th>Remarks &amp; Dated Signature of Q.C./inspection Engineer</th>
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<tbody>
<tr>
<td>(ii) Adequacy of concrete production/transportation, placement, consolidation</td>
<td></td>
<td>Supervisor</td>
<td>JE</td>
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<tr>
<td><strong>OK FOR PLACEMENT</strong></td>
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<tr>
<td>1. Design mix. measurement</td>
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<tr>
<td>2. Mixing/Consistency</td>
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<td>3. Slump</td>
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<td>4. Compaction of concrete</td>
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<td>5. Joints</td>
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<tr>
<td>6. Finishing</td>
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<td>7. Casting of cubes</td>
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<tr>
<td>8. Curing</td>
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<tr>
<td>9. Compressive strength 28 days</td>
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<tr>
<td><strong>FINAL O.K.</strong></td>
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Note: Before pouring of concrete the reinforcement should be checked by Q.C. Unit working stand by vibrator & mixer should be kept at site before start of concreting.
LOAD REGISTER

Name of Division:-
Name of work :
Agreement No.
Name of Agency :
Date :
Location :

<table>
<thead>
<tr>
<th>S. No</th>
<th>Cement</th>
<th>Sand</th>
<th>Agg 10mm</th>
<th>Agg 20mm</th>
<th>Water</th>
<th>AEA / Other</th>
<th>Sig.</th>
<th>Remarks</th>
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### SIEVE ANALYSIS COARSE AGGREGATE

Name of Division: -  
Name of work: -  
Agreement No. -  
Name of Agency: -  
Date: -  
Location: -  
Source--------------------------      Sample No.-----------------

Note: Specimen of course aggregate form query & form site shall be preserved as per instruction of Project Manager/Project Manager.

### F.M. TESTING FINE AGGREGATE

Name of Division: -  
Name of work: -  
Agreement No. -  
Name of Agency: -  
Date: -  
Location: -  
Source--------------------------      Sample No.-----------------

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Sieve Size</th>
<th>4.75</th>
<th>2.36</th>
<th>1.18</th>
<th>600</th>
<th>300</th>
<th>150</th>
<th>75</th>
<th>Pan</th>
<th>Total</th>
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<td>1.</td>
<td>Weight Retained</td>
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<td>Cumulative Wt. Retained</td>
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<td>3.</td>
<td>Cumulative % Retained</td>
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<td>Cumulative % weight Passing</td>
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% O/S

% SILT

F.M = \frac{\text{F.M}}{100}

Note: Specimen of fine aggregate form query & form site shall be preserved as per instruction of Project Manager/Project Manager.
# CUBE CASTING & TESTING REGISTER

Name of Division:-
Name of work :
Agreement No.
Name of Agency :

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Date of casting</th>
<th>Specimen no.</th>
<th>Location of Sample Block RD</th>
<th>Mark on the Cube</th>
<th>Proportion W/C Ratio</th>
<th>Slump</th>
<th>Compressive Strength 7 days</th>
<th>28 days</th>
<th>Sig. of Site in-charge</th>
<th>Dated initial of QC unit</th>
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**Note:**

1. Three specimen shall be tested after 7 days and three after 28 days as per frequency specified in specification.

2. One specimen from each sample shall be preserved duly signed by bidder for his authorized representative & Project Manager or his authorized representative duly marked with date.
**INSPECTION REGISTER**
(for Departmental Officer’s)

Name of Division: -  
Name of work :  
Agreement No.  
Name of Agency:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Remark of Inspecting Officer</th>
<th>Name and Designation of Inspecting Officer</th>
<th>Date</th>
<th>Compliance by execution Units</th>
<th>Name and designation of officer</th>
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### INSTRUCTION/INSPECTION REGISTER
(For Contractor)

Name of Division:-
Name of work :
Agreement No.
Name of Agency :

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Remark of Department Officers</th>
<th>Name and Designation of Department Officer</th>
<th>Date</th>
<th>Dated initial of bidder of is authorize representative as a token of acceptance</th>
<th>Compliance made by bidder</th>
<th>Dated initial of bidder</th>
<th>Signature of accepting officers</th>
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HINDRANCE REGISTER

(Refer Note 3 of items No.23 of Appendix-XIII of PWF&AR Part-II)

- Name of Work:
- Agreement No. & Date:
- Name of Contractor/Firm:
- Contract amount:
- Date of commencement:
- Stipulated date of completion:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Details of Hindrance</th>
<th>Date of occurrence of Hindrance</th>
<th>Communication date in writing from contracting firm w.r.t. Hindrance</th>
<th>Date of overcame of Hindrance</th>
<th>Details of corrective measures taken by Engineer(s)*</th>
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Total days of Hindrance (7=5-3)

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<tr>
<th>Days attributable to contractor (with reasons)</th>
<th>Days not attributable to contractor (with reasons)</th>
<th>Signature of Engineer</th>
</tr>
</thead>
<tbody>
<tr>
<td>JEn.</td>
<td>AEn.</td>
<td>Ex En.</td>
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</table>

*It should mention specific like letters written or meetings done to sort out Hindrances.

(DETAILS AT APPENDIX QA - QC attached)
APPENDIX- QA - QC

QUALITY ASSURANCE, SAFETY, CONTRACTORS FIELD TEMPORARY FACILITIES:

1. Quality Assurance Plan
   1.1 Quality System and Procedures
   The Contract obligates the Contractor to implement and maintain a quality assurance system to demonstrate compliance with all of the requirements of the Contract. The Contractor shall operate a Quality System throughout the duration of the Contract covering all Site, offsite and design office activities, and all supplies and subcontractors, in compliance with ISO 9001 standards. Within twenty eight (28) days of the Commencement Date, the Contractor shall prepare and submit the Project Assurance Plan for review and consent by the Engineer. Wherever possible, diagrams, charts and organograms should be used in preference to lengthy descriptions. The Contractor shall fully co-operate in audits by the Engineer or his representatives and shall implement all required corrective and preventative actions.

   Consistent with the accepted Quality Assurance Plan, the Contractor shall prepare a Project Procedures Manual, for the approval of the Engineer, and implement the approved procedures together with suitable communication systems for the efficient management of the Contract covering responsibilities, communications, document control, meetings, reporting and administration.

   The Quality Assurance Plan and Procedures Manual shall be reviewed, updated and resubmitted for acceptance by the Engineer as necessary throughout the period of the Contract.

   The Quality Assurance Plan shall specifically address the procedures for maintaining the Project Quality requirements with respect to the use of subcontractors, vendors and suppliers. The requirements for Quality surveillance shall reflect the criticality of the item or material concerned. The criteria for assessment of criticality shall be approved by the Engineer.

   1.2 Procedures
   The Contractor shall not commence any item of Permanent Works until he has submitted to the Engineer a written statement of his own inspections of that items, recording such inspections of that item, and recording the Engineer’s inspection and obtaining the Engineer’s written approval thereof. Every such statement shall identify the individuals on the Contractor’s or Subcontractors staff who are responsible for the item in question, the place of inspection, the stages at which inspections and tests are to be made and the detailed aspects to be verified or measured in each inspection. Each inspection shall be recorded.

   1.3 Contractor’s Inspection
   The Contractor shall be responsible for testing and inspecting all materials and workmanship. No work shall be covered up without the written approval of the Engineer. All items of work concealed in the finished work shall be inspected by the Contractor immediately before they are covered up. Inspection and testing shall be recorded.
according to the procedure specified in below Sub-Clause 1.4 of the Specification.

1.4 Test and Inspection Records
The record shall identify the inspector, the place, the date and time when the inspection was completed, the section of the Works and the materials tested or inspected, and its state of completion. Reference shall be made to the relevant detailed working drawings and the specific aspects or properties which were checked or measured shall be recorded. Two copies of each record of inspection by the Contractor shall be submitted to the Engineer. The records of inspections and tests shall be stored in an orderly fashion on Site by the Contractor until the issue of the Taking-Over Certificate for the whole of the Works, or such earlier time as the Engineer may instruct, and the Engineer shall have the right of access to them at all times.

After the issue of the Performance Certificate for the whole of the Works, or such time as the Engineer may instruct, the Contractor shall, as instructed by the Engineer, either dispose of the records or deliver them as directed.

1.5 Engineer’s Testing and Inspection
In addition to the Contractor testing and inspection, the Contractor shall afford and facilitate access at all times for the Engineer’s inspection and testing of materials and workmanship on Site and, whenever required by the Engineer, off-site and at manufacturers’ workshops. The Contractor shall provide means of safe access and assistance as may reasonably be required by the Engineer. For all items of work the Contractor shall give adequate notice in writing to the Engineer that the item in question is complete and is ready for inspection, and shall not cover it by subsequent work until the Engineer has confirmed in writing that it has been inspected and is approved. No inspection or approval by the Engineer shall relieve the Contractor or any of his duties, obligations and responsibilities under the Contract. The Contractor shall ensure that such access and records are also provided for all off-site fabricated items and proprietary products.

1.6 Inspection and Test Plans
The Contractor shall prepare, and submit for approval, inspection and Test Plans for all supplies, materials and prefabricated items and for all works on Site, unless otherwise agreed by the Engineer. The format of such plans shall be to the approval of the Engineer and shall indicate all test, inspection and hold points for inspections, audits and approvals to be carried out by the manufacturer, third party inspection body, Contractor’s or Engineer’s representative. The plans shall cover manufacture, transportation, acceptance, storage, installation, commissioning and tests, as appropriate. All references in the Contract of the need for the Contractor to obtain the Engineer’s approval or consent shall be deemed a Hold Point unless otherwise agreed by the Engineer to designate any as witness points.

CONSTRUCTION SUPERVISION:
Supervision of construction work will be done by the Engineer-in-Charge and his site staff on a day-to-day basis and periodically by the concerned Superintending Engineer and Chief Engineer in charge of the Project / Dam.
MATERIALS AND SAMPLES:

The Contractor shall submit to the Engineer-in-Charge a list of all suppliers of manufactured items from whom proposes to purchase, and the locations of quarries, material sources from which he proposes to extract material aggregates, stones, fill materials etc. If the contractor is purchasing the aggregates from the vendor he should obtain the materials from the licensed quarry where the State Pollution Control Board has given Consent for Establishment and operation for the crusher. In addition the Contractor should enclose a copy of the Consent for establishment and operation as part of the Vendor approval. All materials and articles shall, whether specified or otherwise, be suitable to the use intended and shall be approved by the Engineer-in-Charge. Samples of all materials or articles to be cooperated in the works as may be called for by the Engineer-in-Charge or his Representative shall be submitted as when required for retention by the Engineer-in-Charge’s Representative. Manufacturer’s test certificates shall be supplied in respect of cement, steel, pipes etc.

The Contractor shall maintain a detailed record of all materials delivered to his stores or working areas, and all make these records available to the Engineer-in-Charge’s representative. All goods and materials used in the permanent works shall be new, unused, of the most recent or current models, and incorporate all recent improvements design and materials unless provided otherwise in the contract.

All materials and works rejected by the Engineer-in-Charge’s representative shall be promptly removed from the site.

INTERFERENCE WITH EXISTING WORKS:

The Contractor shall not interfere in any way with any existing works whether they are the property of the employer or of a third party and whether the position of such works is indicated to the Contractor by the Engineer-in-Charge or not, except where such interference is specifically described as part of the works either in the Contractor of in the Engineer-in-Charge’s instructions.

The Contractors shall at his own expense provide and erect, to the approval of the Engineer-in-Charge, such export as may be required to protect efficiently all structures or works which may be endangered by the execution of the works and he shall remove such supports on completion of the works or otherwise take such permanent measures may be required by the Engineer-in-Charge to protect the structures or works.

The Contractor is to execute the works in such a manner that he does not damage or interfere with existing services which are located in proximity to the site. The Contractor shall be responsible for any damage or interference shall may be caused to these services due to the execution of the works and shall carry out all necessary repairs at his expense and to the satisfaction of the Engineer-in-Charge.

FIELD RECORDS AND AS-BUILT DRAWINGS:

During the progress of the work, the Contractor shall maintain a continuous up to date copy and record of all drawings, specifications, supplementary data, latest revisions and field deviations from the drawings, if any, approved by the Engineer-in-Charge.

As soon as any section of the works has been completed the Contractor shall bring the construction drawings up to “As-Built” status incorporating all modifications, additions,
alternations etc. which may have been made during the construction period. All “As-Built” drawings shall be subject to verification and several by the Engineer-in-Charge. Within the contractually stated period following the date of the issue of the Certificate of completion for the works or parts of the works, the Contractor shall complete and submit one full set of such approved drawings together with one set of auto – positives to the Engineer-in-Charge.

PROTECTION OF COMPLETED WORKS:

The Contractor shall protect completed works from damage from subsequent operations, from the weather or any other cause, including the naturally aggressive nature of the environment in which the works are to be constructed to make good any damage so arising until the work is fully completed and handed over to the Engineer-in-Charge.

SIGNBOARD:

Notice Boards shall be in Regional Language, Hindi and English and shall be displayed in suitable position on the Sites to the Employers name together with the name of the Project and the names of the Co-financer, Consultant and Contractor. The boards shall have a minimum overall size of 1.5m x 1m and shall be in a format to be provided by the Engineer-in-Charge.

SAFETY MEASURES:

The Contractor shall be responsible for ensuring throughout the contract period all the safety measures at site of work so as to prevent loss of life, property and damage of partially or completed works.

Safety Precautions:

The Contractor shall comply with any safety instruction given by the Engineer-in-Charge. In the performance of the works, the Contractor shall exercise every reasonable precaution to protect persona or property from injury. The contractor shall erect and maintain all necessary temporary fencing, barricades, barriers, sign and lights and provide the alarm, fire extinguishing and firefighting services at strategic points on the site. The Contractor shall adopt and enforce such rules and regulations as may be necessary, desirably or proper to safeguard the public and all persona engaged in the work and its supervision.

Safety Officer:

The Contractor shall constantly assign, during the progress of the works, and employee qualified in safety and familiar with the type of work being performed, whose assignment shall include initiation of measures for the protection of health and the prevention of accidents and who shall see, by personal inspection, that all safety rules and regulations are enforced. The contractor shall hold regularly safety meetings with contractor’s workers/ labours, supervisors and foremen for “work instructions” on daily basis and also with JE/ AE on daily basis, at least once each month scheduled with the Engineer-in-Charge, When directed additional meetings will be held. The Contractor will keep the Engineer-in-Charge advised as to when these meetings are to be held and shall provide the Engineer-in-Charge with a copy of the proposed with action plan with copy of minutes of his daily meeting & to seek his directions.

Safety Procedures:

The Contractor shall:

(a) comply with all applicable safety regulations,
(b) take care for the safety of all persons entitled to be on the Site,
(c) use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,
(d) provide fencing, lighting, guarding and watching of the Works until completion and taking over
(e) provide any Temporary Works (including roadways, footways, guards and fences,) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

**Safety equipments for Workforce Safety:**
The Contractor will maintain minimum 50 sets of Personal Protective Equipments at all times and will ensure that the

1. Safety Helmets
2. Safety harness
3. Day glow waist coat
4. Industrial goggles
5. Safety boots
6. Gloves
7. Nasal masks
8. Ear plugs

In case failure to provide the equipments within 2 weeks time from the commencement of works, penalty @ Rs. 2000/- per item there off in addition to the actual cost of the above items will be imposed.

**Measurement of Payments**
The unit number of PPEs shall be measured and the stock shall be verified by the Engineer

**Rate**
The contract rate for PPEs shall include unit number of PPEs procured on production of valid proof of procurements.

**Health Checkups and AIDS/HIV Awareness Programme**
The contractor shall conduct quarterly health and safety awareness programmes focusing on HIV/AIDS and other sexually transmitted and other communicable diseases through NGOs or other medical experts.

**Safety Measures:**
The safety measures taken by Contractor shall include but shall not be limited to the following:

a) **Temporary Fencing** - The Contractor shall erect, maintain and remove suitable and approved temporary fencing to enclose such areas of the Permanent works and areas of land occupied by the Contractor within the site as may be necessary to implement his obligations under the contract, to the satisfaction of the Engineer-in-Charge. Where any temporary fence has to be erected alongside a public road, footpath etc. it shall be of the type required by and shall be erected to the satisfaction of the Government authority concerned.

b) **Lighting** – The Contractor shall provide sufficient lighting in all places where work is in progress, such that –
   i) Safe working conditions are provided both for the Contractor’s personnel, sub-contractor’s personnel and for personnel of the Engineer-in-Charge.
   ii) The works can be constructed in complete compliance with the contract and
   iii) A complete inspection of all works in progress can be made by the Engineer-in-Charge.
c) The minimum service luminance on ground or working surfaces to be provided for the various operations or work areas shall be as directed by the Engineer-in-Charge.

d) The Contractor shall supply a suitable instrument to the Engineer-in-Charge for measuring the intensity of illumination.

e) All mobile equipment or plant used during night operations, as and when approved by the Engineer-in-Charge, shall be equipped with sufficient lights and reflectors to ensure safe working conditions.

f) Not less than fourteen (14) days before the start of night operations, the Contractor shall submit his proposals for lighting in the areas in which he proposes to work at night to the Engineer-in-Charge. The Contractor shall modify the proposals if required by the Engineer-in-Charge, and shall not begin operations at night until the proposals for lighting (in and amended form if required) have been approved.

g) Approval of the Contractor’s proposals for lighting shall not relieve the Contractor of any of his liabilities or obligations under the Contract.

h) **Work in the vicinity of electrical equipment** – In the interest of safety and security, the Contractor shall complete the erection of any safety fencing around electrical and mechanical apparatus by the time that the said apparatus is connected to any electricity supply.

i) **Explosives** – In the use, handling and storage of explosives, the contractor shall comply with the guidelines given in Section 3.4, under Earthworks of this specifications and with all statutory regulations of law. The contractor’s attention is drawn to the fact that, depending on the nature of work in progress, the Engineer-in-Charge may require the Contractor to discontinue the handling or use of explosives during the approach and progress of severe thunderstorms in which case all persons shall be removed from danger areas to a place of safety during such periods.

j) **Safety Instructions** – The Contractor shall at his own cost supply and issue to his employees and those of his subcontractors and the staff of the Engineer-in-Charge the Safety printed booklets, of pocket size, on the scale of one per person, in English and in other languages used by his employees at site, instructions based on good practice. Within sixty (60) days of the Engineer-in-Charge’s written order to commence the works at site, proof copies of the booklet shall be submitted for approval before printing and amendments shall be made to the booklet to his entire satisfaction. The Contractor shall issue the booklet immediately after printing as required by this clause and ensure that all employees are fully conversant with the instructions. Safety instruction shall deal with all safety including –

   (i) Protective clothing, headgear and footgear.
   (ii) Use of lifting equipment.
   (iii) Use of drilling equipment.
   (iv) Contract with and use of electrical equipment.
   (v) Use and storage of explosives.
   (vi) Compressed air.
   (vii) Welding.
   (viii) Routine for accidents or fires and
   (ix) Watchmen, warning notices and barriers.

The Contractor shall allow for 20 booklets for the use of the Engineer-in-Charge.

k) The Contractor shall provide for the Engineer-in-Charge’s supervisory staff the protective clothing, headgear and footwear necessary for the proper discharge of their duties on site.

l) **Accident Report** – The Contractor shall promptly report to the Engineer-in-Charge, all
accidents involving death or serious injury to staff or workmen, and furnish monthly reports of all accidents to staff or workmen involving loss of time, giving such information as may be prescribed by the Engineer-in-Charge.

The Contractor shall provide all necessary signs for the works.

m) These shall include, but not be limited to –

- Use of sirens before blasting and all clear indication
- Standard road signs
- Warning signs
- Danger signs
- Control signs
- Safety signs and
- Direction signs

n) Wording on all signs shall be in English and State / regional and other approved languages. The size, colour, lettering and location of all signs will be subject to approval and attention shall be paid to international signs.

o) The Contractor shall maintain all signs placed by him as well as those placed by the Employer.

p) If the Engineer-in-Charge considers that the system of signs provided by the Contract is inadequate to ensure safety, or unsatisfactory in other respects, the contractor shall add to amend, or otherwise change the system to the satisfaction of the Engineer-in-Charge.

q) The Contractor shall at his own cost make suitable replacement as directed by the Engineer-in-Charge in case of loss or damage to any signs provided by the contractor under this Sub-Clause.

r) The Contractor shall at his own cost adopt such measures as the Engineer-in-Charge may consider reasonable and necessary to minimize nuisance from dust, noise or other disturbance created while or in carrying out the works.

Separate payment will not be made for complying with the provisions of this clause(s) and all costs shall be deemed to be included in the various rates in the priced Bill of Quantities.

FIRE PREVENTION:
The Contractor shall provide and maintain adequate fire-fighting equipment and take adequate fire precautions measures for the safety of all personnel, temporary and permanent works, and shall take action to prevent damage to or situation by fire of trees, shrubs or grasses.

Separate payment will not be made for the provision of fire prevention measures.

FIRST AID & MEDICAL FACILITIES:

General:
The Contractor shall in all respects be fully responsible for ensuring necessary first aid services to his employees and employees of the subcontractors, including transport for injured personnel to hospital or other appropriate accommodation as and when required.

Staff:
To enable the fulfilment of this obligations under this clause, the contractor shall engage qualified resident field staff, and shall arrange for the treatment of causalities on the site in first aid units and for removal by ambulance of injured or site employees to hospitals or their homes.

Separate payment will not be made for first aid and medical facilities provided by the Contractor for his employees and the employees of his subcontractors. The facilities shall be also available for the use of staff of Engineer-in-Charge.
Contractor with the help of local medical department should conduct AIDS awareness Campaign for every month to bring awareness to the labour employed by him.

PROTECTION OF REAL ESTATE:
The Contractor shall control the movement of his crews and equipment on any right of way, including access has approved by the Engineer-in-Charge so as to minimize damage to crops and property and shall endeavor to avoid marring the lands. Ruts and scars shall be obliterated, damage to land shall be corrected and the land shall be restored as neatly as practicable to its original condition.
The Contractor shall be responsible directly to the Employer for any excessive or unnecessary damage to crops or lands resulting from the Contractor’s operations whether on lands adjacent to a right of way or on approved roads, the deductions shall be made from payments due to the contractor to cover the amount of such excessive necessary damage as determined by the Engineer-in-Charge.

No separate payment shall be made to the Contractor for complying with the stipulations of this Sub.-clause.

ENVIRONMENTAL PROTECTION WORKS: (detailed separately also)
The environment is defined as meaning the surrounding area, including human and natural resources, to be affected by the execution and completion of the works.
The Contractor shall take all precautions for safeguarding the environment during the course of the construction of the works. He shall abide by all prevailing laws, rules and regulations governing pollution and instrumental protection.
The Contractor shall prohibit employees from unauthorised use of explosives, poaching wildlife and cutting trees. The contractor shall be responsible for the action of his employees.

Environmental protection works, among others, shall include:

Hazardous Materials:
The Contractor shall not store hazardous materials near water surface. The Contractor shall provide protective clothing or appliances when it is necessary to use hazardous substances.

High concentration of airborne dust resulting in deposition and damage to crops and water resources shall be provided. The contractor shall take every precaution to control excessive noise resulting in disruption to wildlife and human population.

Provision and Maintenance of Stores, and Equipment:
Space allocated for storage of materials such as cement, gabion wire, reinforcing wire etc. shall in general be damp-free, rainproof and away from petroleum products storage.
Written information must be given to, and approval be taken from, the Engineer-in-Charge regarding the paper establishment and maintenance of such stores. Failure to comply with the Executive Engineer’s instruction in respect of overall standards will lead to the reduction or withholding of payment.

Sanitation:
The Contractor is to arrange for a high standard of sanitation to be maintained throughout his offices. Stores, warehouses, and the works, Sanitary conveniences for the use of persons employed in the works shall be provided the maintained by the contractor in accordance with the
appropriate laws and regulations in force in India to the extend in such a manner and at such places as may be approved by the Executive Engineer, and all persons connected with the works shall be obliged to use them.

**Reinstatement of Environment:**
The Contractor shall arrange and executive works as well as related activities in such a way that environmental solutions are reinstated. He may be required to carry out filling, removal and disposal works, along with planting of grass and trees at identified locations to reinstate environment as directed by the Engineer-in-Charge.

**CONTRACTORS TEMPORARY FACILITIES:**
*Contractor’s Offices, Stores etc.,:*
The contractor shall be responsible for the land he deemed necessary for his offices, stores and warehouse and the housing and welfare of his employees. The contract shall also be responsible for the construction, maintenance, operation and subsequent removal of such temporary facilities. These facilities shall be equipped with the electricity and portable water supplies. The temporary quarters and camp accommodation shall be run and maintained in an efficient manner for the time of the contract, and shall be open to the inspection of the Government Medical Officers of Health at all times, for instruction given by him for the cleaning, disinfecting and general maintenance thereof shall be carried out by the contractor. The above buildings shall from the time of their erection until the completion of the works will remain with the employer and the contractor shall not demolish or remove any buildings or part thereof without the permission of the Engineer-in-Charge. On the completion of the works they shall become the property of the Contractor who shall, if so ordered, remove them and the associated services and restore the site to the approval of the Engineer-in-Charge, before release of final bill. The contractor shall submit, for the approval of the Engineer-in-Charge, within fourteen (14) days from the commencement date his detailed plan and / or construction drawings of his offices, stores, and warehouse that he is construct or rent, including his proposals for water and power supply and sewage facilities. All buildings shall conform to the Employer’s standards.

**CONTRACTOR’S TRANSPORT:**
The contractor shall make his own arrangements for the transport, where necessary, of his staff and workmen of the site of the works at his own expenses. No payment shall be made on this item, and such costs in this named to be covered in the unit rate.

**TEMPORARY ACCESS ROAD:**
The contractor shall construct and maintain the temporary access roads including temporary access bridges, necessary for the construction of the Works and transportation of the materials. The access roads to the borrow pits and the constructing the canals and roads shall be constructed by rehabilitating and reinforcing the existing roads, where possible. The access roads shall be constructed in such a manner that all of the temporary access roads and bridges ensure the passage of heavy equipment and trucks during the whole construction period. The Contractor shall also pay compensation to the owner(s) if he constructs the temporary access roads on privately owned land. To the possible extent the contractor should avoid agricultural land sand forest land.
Not less than 14 days before he intends to start construction of any part of the temporary access roads, the contractor shall submit to the Engineer-in-Charge his detailed construction programme and drawing of—
1) The temporary access roads including temporary access bridges and
2) Any other temporary works which he considers necessary for the proper execution of the works.

The Contractor shall not start the construction of any temporary access road until the Engineer-in-Charge approval thereto has been obtained. However, such approval shall not relieve the contractor of any liability or obligation under the contract.

The Contractor shall construct the temporary access roads and bridges in accordance with the approved drawings and construction program and shall maintain and repair such roads so as to ensure the passage of heavy equipment and trucks throughout the construction period of the works, giving special attention to watering the access road(s) unless otherwise specified or directed by the Engineer-in-Charge. On completion of the works, such as canal, road, bridge, culvert etc. he shall remove such access road and bridge from the site as directed by the Engineer-in-Charge.

The public and village roads may also be used as temporary access road. The contractor shall maintain and them to the satisfaction of the authorities concerned.

The Contractor shall facilitate the use of such roads by the public in a friendly co-operative manner.

All costs, including cost of land compensation, therefore incurred by the Contractor in complying with the requirement of this sub. Clause shall be deemed to be included in the respective item rates in the Bill of Quantities. No payment for these items shall be made.

BORROW AREA & QUARRIES:

The Engineer-in-Charge shall have the power to disallow the method of construction and/or the use of any quarry area if, in his opinion, the stability and safety of the works or any adjacent structure is endangered, or unique interference with the natural or artificial drainage, or the method or use of the area will promote undue.

All areas susceptible to erosion shall be protected as soon as possible either by temporary or permanent works. All necessary measures shall be taken to prevent concentration of surface water and to avoid erosion of slopes and other areas. Any newly formed channels shall be backfilled.

Borrow/quarries shall be located away from the population centres, drinking water intakes and drainage the cutting of trees shall be minimised. Temporary ditches and/or settling basins shall be dug to prevent the undesirable ponding of water shall be prevented through temporary drains discharging into natural drainage channels.

Narrow pits shall be dug within 5m of the toe of the embankment, if there depth is less than 0.5m and in depth is more than 0.5m or within such a distance from the toe of the bank where a 4:1 hydraulic gradient line cuts the ground surface, whichever is more.

Now pits shall not be more than 1m in depth and 25m in length. A clear distance of 1m shall be left pit. The bed of borrow pits shall be left reasonably smooth and even.

Now pits shall be drained to avoid stagnation of water and the bottom level of borrow pits should be fixed to the prevailing ground slope towards the nearest natural drainage course.

Now pits should be avoided within the forest areas.

Earthwork operations shall be strictly limited to the areas to be occupied by the permanent works.
and approved borrow areas and quarries, unless otherwise permitted by the Engineer-in-Charge. Due provision shall be made for temporary drainage. Erosion and/or instability and/or sediment deposition arising from earthwork operations not in accordance with the specifications shall be made good immediately.

The contractor shall obtain the permission of the Engineer-in-Charge before opening up any borrow pits or quarries. Such borrow pits and quarries may be prohibited or restricted in dimensions and depth by the Engineer-in-Charge where –

i) They might affect the stability or safety of the works or adjacent property.

ii) They might interfere with natural or artificial drainage or irrigation

iii) They may be environmentally unsuitable

iv) The contractor should enter into an equitable agreement with landowner for borrow area redevelopment if any land owner required and after completion of the borrow area the contractor obtains a “Satisfaction Letter” or “No Objection Letter” from the land owner on a stamp paper.

At least 14 days before he intends to commence opening up any approved borrow pit or quarry, the contractor shall submit to the Engineer-in-Charge his intended method of working and restoration. These shall include but not be limited to –

i) The location, design and method of construction of any access track.

ii) The volume and nature of materials to be removed.

iii) The sequence and method of excavation of materials.

iv) Measures for controlling runoff and sediment from the site during operation and

v) Proposals for site restoration including approximate finished levels, drainage erosion and sediment control, slope stabilisation and re-vegetation, including reinstatement of any access track.

The operation of borrow pits or borrow areas shall not be permitted until the method of working for that particular pit or areas has been approved by the Engineer-in-Charge in writing. Restoration shall be to the satisfaction of the Executive Engineer.

**DISPOSAL OF CONSTRUCTION DEBRIS:**

Materials in excess of the requirements for permanent works and unsuitable materials shall be disposed of in locations, and in the manner as agreed with the Engineer-in-Charge. The location of disposal sites shall be such as not to promote instability, destruction of properties and water supply system. Exposed areas of such disposal sites shall be mainly dressed and be planted with suitable vegetation.

The Contractor shall plan his works in such a way that there is no spillage or seepage of petroleum products to the surface or sub surface water.

**CONSTRUCTION PROGRAMME:**

In amplification of Construction Programme, the particulars supplied by the Contractor with the programme shall include the following –

1) If statement giving the numbers and categories of supervisory and technical staff and skilled/unskilled labour to be employed on the works.

2) If list and type/details of the Contractors Equipment’s (including vehicles) which the contractor proposes to employ on the works, stating whether they are to be acquired from inside or outside India including programmed dates for order and delivery.
3) A list detailing the purchase and delivery of materials and plant from both inside and outside India.

4) Details of the Contractors methods of working for all operations including construction by sequence. The programme shall also indicate the proposed temporary flow diversions and arrangements for de-watering illustrating the sequence of various critical stages of construction.

5) In statement and outline layout giving the proposals for location of offices and stores at the site and –

6) Details of the programme for the construction of the works from the Commencement date, including a complete resources allocation showing the number of units and allotted times for each unit of the Contractors equipment, plant, materials and labour allocated for each part of the works.

7) The programme shall show the start and completion dates of the various activities, in order to complete the entire project by the intended completion date.

No separate payment shall be made to the Contractor for complying with this Sub-clause.

PROGRESS REPORTING AND REVIEW MEETINGS:

Monthly Report:
The Contractor shall furnish to the Engineer-in-Charge, at the Contractor’s own cost, at regular one (1) month arrival and in a form and number of copies determined by the Engineer-in-Charge, the following.

i) Physical and financial progress for the preceding months and estimated progress for the report month.

ii) Completion schedules (target and actual) based on the approved Construction Programme.

iii) Estimated expenditure for the report month.

iv) Tabulation of construction equipment, listing the major items and pieces of equipment which were utilised for performance of the works during the preceding month.

v) Tabulation of employees, showing the supervisory staff and the numbers of several classes of labours employed by the contractor in the preceding month.

vi) Purchase and expenditure report covering the plant and materials furnished by the Contractor for the works.

vii) The climatic conditions prevailing during the report month.

viii) The environmental and social measures carried out by the contractor and

ix) Any report which may be specifically required by the Employer and / or the Engineer-in-Charge.

Final or Completion Report:
Within 30 days from the provisional acceptance Date, the contractor shall submit to the Engineer-in-Charge completion Report in 30 copies. The report should include –

i) Inventory of executed works

ii) Financial Statements

iii) Main issues encountered

iv) List of the equipment and staff mobilized and

v) Recommendations.
The report should also include:  As-built drawings of the various structures.

Site / Works Meetings:
The Contractor shall attend all the site / work Meetings (Periodical or Exceptional) called by the Engineer-in-Charge. A Minutes of Meeting should be prepared and jointly signed by the Contractor (or its representative) and the Engineer-in-Charge.

Site Diary Book:
The Contractor shall maintain a site diary book in which all the main activities in the site should be daily recorded including inventory of existing staff and equipment, works progress, incidents, executed tests and samples collection visits and particular or exceptional events. The diary should be jointly signed by the Contractor’s representative and the Engineer-in-Charge.

Audits by the Employer:
The contractor shall note that the employer shall be entitled, as its discretion, to conduct audits in respect to:
   a) Costs incurred in the event of termination and
   b) Any other costs that the contractor claims from the employer which are not specifically covered by the terms of the contract.
The contractor shall be obliged to keep accurate up to date accounts with records concerning the above items.

OTHER CONDITIONS:
1. Contractor will arrange his own arrangement for communication among his employees/Workers.
2. Contractor shall abide by the rules and regulations of the Nigam inside the project area.
3. The contractor shall follow all the safety rules applicable to Dam/Barrage of hydropower Projects.
4. It is the responsibility of the contractor to get the material approved from Er.-in-Charge before taking into use at site.
5. Contractor or his authorized representatives shall keep close liaison daily with J.E./A.E. concerned for taking daily instructions/progress/complaints pertaining to the work.
6. Contractor has to follow the labour rules, other rules applicable for this type of work and statutory rules laid by GOUK/GOI.
7. During execution of work, samples of materials and items such as concrete, sandstone ballast, steel and any other material may be referred for laboratory test by Er.-in-Charge and bill thus raised by concerned laboratory shall be paid by contractor.

Signature of Contractor    Executive Engineer
Drawings

As built drawing will be provided during the construction period.
Supplementary Information- NA
PART 3 – Conditions of Contract and Contract Forms
Section VIII - General Conditions of Contract

These General Conditions of Contract (GCC), read in conjunction with the Particular Conditions of Contract (PCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties.

These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.
General Conditions of Contract

1. Definitions

Boldface type is used to identify defined terms.

(a) The **Accepted Contract Amount** means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.

(b) The **Activity Schedule** is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump-sum contract. It includes a lump-sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.

(c) The **Adjudicator** is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.

(d) **Bank** means the financing institution named in the PCC.

(e) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.

(f) **Compensation Events** are those defined in GCC Clause 46 hereunder.

(g) The **Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 57.1.

(h) The **Contract** is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.

(i) The **Contractor** is the party whose Bid to carry out the Works has been accepted by the Employer.

(j) The **Contractor’s Bid** is the completed bidding document submitted by the Contractor to the Employer.

(k) The **Contract Price** is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.

(l) **Days** are calendar days; months are calendar months.

(m) **Dayworks** are varied work inputs subject to payment on a time basis for the Contractor’s employees and Equipment, in addition to payments for associated Materials and Plant.
(n) A **Defect** is any part of the Works not completed in accordance with the Contract.

(o) The **Defects Liability Certificate** is the certificate issued by Project Manager upon correction of defects by the Contractor.

(p) The **Defects Liability Period** is the period named in the PCC pursuant to GCC Sub-Clause 38.1 and calculated from the Completion Date.

(q) **Drawings** means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

(r) The **Employer** is the party who employs the Contractor to carry out the Works, as specified in the PCC.

(s) **Equipment** is the Contractor’s machinery and vehicles brought temporarily to the Site to construct the Works.

(t) “**In writing**” or “**written**” means hand-written, typewritten, printed or electronically made, and resulting in a permanent record;

(u) The **Initial Contract Price** is the Contract Price listed in the Employer’s Letter of Acceptance.

(v) The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The **Intended Completion Date** is specified in the PCC. The **Intended Completion Date** may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

(w) **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.

(x) **Plant** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

(y) The **Project Manager** is the person named in the PCC (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.

(z) **PCC** means Particular Conditions of Contract.
(aa) The Site is the area defined as such in the PCC.

(bb) Site Investigation Reports are those that were included in the bidding document and are factual and interpretative reports about the surface and subsurface conditions at the Site.

(cc) Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

(dd) The Start Date is given in the PCC. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

(ee) A Subcontractor is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

(ff) Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

(gg) A Variation is an instruction given by the Project Manager which varies the Works.

(hh) The Works are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the PCC.

(ii) “Contractor’s Personnel” refers to all personnel whom the Contractor utilizes on the Site or other places where the Works are carried out, including the staff, labor and other employees of each Subcontractor.

(jj) “Key Personnel” means the positions (if any) of the Contractor’s personnel that are stated in the Specification.

(kk) “ES” means Environmental and Social (including Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH)).

(ll) “Sexual Exploitation and Abuse” “(SEA)” means the following:

Sexual Exploitation is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;

Sexual Abuse is defined as the actual or threatened
physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions.

(mm) “Sexual Harassment” “(SH)” is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by the Contractor’s Personnel with other Contractor’s or Employer’s Personnel; and

(nn) “Employer’s Personnel” refers to the Project Manager and all other staff, labor and other employees (if any) of the Project Manager and of the Employer engaged in fulfilling the Employer’s obligations under the Contract; and any other personnel identified as Employer’s Personnel, by a notice from the Employer or the Project Manager to the Contractor.

2. Interpretation

2.1 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.

2.2 If sectional completion is specified in the PCC, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

2.3 The documents forming the Contract shall be interpreted in the following order of priority:

(a) Agreement,
(b) Letter of Acceptance,
(c) Contractor’s Bid,
(d) Particular Conditions of Contract,
(e) General Conditions of Contract, including Appendices,
(f) Specifications,
(g) Drawings,
(h) Bill of Quantities,\(^\text{30}\) and
(i) any other document listed in the PCC as forming part of the Contract.

\(^{30}\) In lump-sum contracts, delete “Bill of Quantities” and replace with “Activity Schedule.”
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<thead>
<tr>
<th>Section</th>
<th>Paragraph</th>
<th>Text</th>
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<tbody>
<tr>
<td>3. Language and Law</td>
<td>3.1</td>
<td>The language of the Contract and the law governing the Contract are stated in the PCC.</td>
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<td></td>
<td>3.2</td>
<td>Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Employer’s country when</td>
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<td></td>
<td>(a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country; or</td>
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<td></td>
<td>(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.</td>
</tr>
<tr>
<td>4. Project Manager’s Decisions</td>
<td>4.1</td>
<td>Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Employer and the Contractor in the role representing the Employer.</td>
</tr>
<tr>
<td>5. Delegation</td>
<td>5.1</td>
<td>Unless otherwise specified in the PCC, the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.</td>
</tr>
<tr>
<td>6. Communications</td>
<td>6.1</td>
<td>Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.</td>
</tr>
<tr>
<td>7. Subcontracting</td>
<td>7.1</td>
<td>The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor’s obligations. The Contractor shall require that its Subcontractors execute the Works in accordance with the Contract, including complying with the relevant ES requirements and the obligations set out in Sub-Clause 28.1.</td>
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<tr>
<td>8. Other Contractors</td>
<td>8.1</td>
<td>The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the PCC. The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.</td>
</tr>
<tr>
<td></td>
<td>8.2</td>
<td>The Contractor shall also, as stated in the Specifications or as instructed by the Project Manager, cooperate with and allow</td>
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appropriate opportunities for the Employer’s or any other personnel, notified to the Contractor by the Employer or Project Manager, to conduct any environmental and social assessment.
9. Personnel and Equipment

9.1 The Contractor shall employ the Key Personnel and use the Equipment identified in its Bid, to carry out the Works or other personnel and Equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of Key Personnel and Equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.

9.2 The Project Manager may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Key Personnel (if any), who:

(a) persists in any misconduct or lack of care;
(b) carries out duties incompetently or negligently;
(c) fails to comply with any provision of the Contract;
(d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment;
(e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution of the Works;
(f) has been recruited from the Employer’s Personnel;
(g) undertakes behavior which breaches the Code of Conduct for Contractor’s Personnel (ES).

If appropriate, the Contractor shall then promptly appoint (or cause to be appointed) a suitable replacement with equivalent skills and experience.

Notwithstanding any requirement from the Project Manager to remove or cause to remove any person, the Contractor shall take immediate action as appropriate in response to any violation of (a) through (g) above. Such immediate action shall include removing (or causing to be removed) from the Site or other places where the Works are being carried out, any Contractor’s Personnel who engages in (a), (b), (c), (d), (e) or (g) above or has been recruited as stated in (f) above.

9.3 The Contractor shall take all necessary safety measures to avoid the occurrence of incidents and injuries to any third party associated with the use of, if any, Equipment on public roads or other public infrastructure. The Contractor shall monitor road safety incidents and accidents to identify negative safety issues, and establish and implement necessary measures to resolve them.

9.4 Labor

9.4.1 Engagement of Staff and Labor. The Contractor shall provide and employ on the Site for the execution of the Works such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within the Country.
10. Employer’s and Contractor’s Risks

10.1 The Employer carries the risks which this Contract states are Employer’s risks, and the Contractor carries the risks which this Contract states are Contractor’s risks.

11. Employer’s Risks

11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Employer’s risks:

(a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to

   (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or

   (ii) negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.

(b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer’s design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an Employer’s risk except loss or damage due to:

(a) a Defect which existed on the Completion Date,

(b) an event occurring before the Completion Date, which was not itself an Employer’s risk, or

(c) the activities of the Contractor on the Site after the Completion Date.

12. Contractor’s Risks

12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer’s risks are Contractor’s risks.

13. Insurance

13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the PCC for the following events which are due to the Contractor’s risks:
(a) loss of or damage to the Works, Plant, and Materials;
(b) loss of or damage to Equipment;
(c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
(d) personal injury or death.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager’s approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.

13.5 Both parties shall comply with any conditions of the insurance policies.

14. Site Data

14.1 The Contractor shall be deemed to have examined any Site Data referred to in the PCC, supplemented by any information available to the Contractor.

15. Contractor to Construct the Works

15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.

15.2 If the Contract specifies that the Contractor shall design any part of the permanent Works, the Contractor shall take into account the Employer’s requirements which may include, if stated in the Specifications:

(a) designing structural elements of the Works taking into account climate change considerations;
(b) applying the concept of universal access (the concept of universal access means unimpeded access for people of all ages and abilities in different situations and under various circumstances; and
(c) considering the incremental risks of the public’s potential exposure to operational accidents or natural hazards, including extreme weather events.
## 16. The Works to Be Completed by the Intended Completion Date

16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

16.2 The Contractor shall not carry out mobilization to the Site unless the Project Manager gives approval, an approval that shall not be unreasonably delayed, to the measures the Contractor proposes to address environmental and social risks and impacts, which at a minimum shall include applying the Management Strategies and Implementation Plans (MSIPs) and Code of Conduct for Contractor’s Personnel submitted as part of the Bid and agreed as part of the Contract.

The Contractor shall submit, to the Project Manager for its approval any additional MSIPs as are necessary to manage the ES risks and impacts of ongoing Works. These MSIPs collectively comprise the Contractor's Environmental and Social Management Plan (C-ESMP). The Contractor shall review the C-ESMP, periodically (but not less than every six (6) months), and update it as required to ensure that it contains measures appropriate to the Works. The updated C-ESMP shall be submitted to the Project Manager for its approval.

## 17. Approval by the Project Manager

17.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.

17.2 The Contractor shall be responsible for design of Temporary Works.

17.3 The Project Manager’s approval shall not alter the Contractor’s responsibility for design of the Temporary Works.

17.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

17.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.


18.1 The Contractor shall be responsible for the safety of all activities on the Site.

18.2 The Contractor shall:

(a) comply with all applicable health and safety regulations and Laws;

(b) comply with all applicable health and safety obligations
specified in the Contract;

(c) take care for the health and safety of all persons entitled to be on the Site and other places, if any, where the Works are being executed;

(d) keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons;

(e) provide fencing, lighting, safe access, guarding and watching of the Works until the issue of the Contract Completion Certificate;

(f) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land;

(g) provide health and safety training of Contractor’s Personnel as appropriate and maintain training records;

(h) actively engage the Contractor’s Personnel in promoting understanding, and methods for, implementation of health and safety requirements, as well as in providing information to Contractor’s Personnel, training on occupational safety and health, and provision of personal protective equipment without expense to the Contractor’s Personnel;

(i) put in place workplace processes for Contractor’s Personnel to report work situations that they believe are not safe or healthy, and to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health.

(j) Contractor’s Personnel who remove themselves from such work situations shall not be required to return to work until necessary remedial action to correct the situation has been taken. Contractor’s Personnel shall not be retaliated against or otherwise subject to reprisal or negative action for such reporting or removal;

(k) where the Employer’s Personnel, any other contractors employed by the Employer, and/or personnel of any legally constituted public authorities and private utility companies are employed in carrying out, on or near the site, of any work not included in the Contract, collaborate in applying the health and safety requirements, without prejudice to the responsibility of the relevant entities for
the health and safety of their own personnel; and

(l) establish and implement a system for regular (not less than six-monthly) review of health and safety performance and the working environment.

Subject to GCC Sub-Clause 16.2, the Contractor shall submit to the Project Manager for its approval a health and safety manual which has been specifically prepared for the Works, the Site and other places (if any) where the Contractor intends to execute the Works.

The health and safety manual shall be in addition to any other similar document required under applicable health and safety regulations and laws.

The health and safety manual shall set out all the health and safety requirements under the Contract,

(a) which shall include at a minimum:

(i) the procedures to establish and maintain a safe working environment without risk to health at all workplaces, machinery, equipment and processes under the control of the Contractor, including control measures for chemical, physical and biological substances and agents;

(ii) details of the training to be provided, records to be kept;

(iii) the procedures for prevention, preparedness and response activities to be implemented in the case of an emergency event (i.e. an unanticipated incident, arising from both natural and man-made hazards, typically in the form of fire, explosions, leaks or spills, which may occur for a variety of different reasons including failure to implement operating procedures that are designed to prevent their occurrence, extreme weather or lack of early warning);

(iv) remedies for adverse impacts such as occupational injuries, deaths, disability and disease;

(v) the measures to be taken to avoid or minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases,

(vi) the measures to be implemented to avoid or minimize the spread of communicable diseases (including transfer of Sexually Transmitted Diseases
or Infections (STDs), such as HIV virus) and non-communicable diseases associated with the execution of the Works, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups. This includes taking measures to avoid or minimize the transmission of communicable diseases that may be associated with the influx of temporary or permanent Contract-related labor;

(vii) the policies and procedures on the management and quality of accommodation and welfare facilities if such accommodation and welfare facilities are provided by the Contractor in accordance with GCC Sub-Clause 9.4.6; and

(b) any other requirements stated in the Specification

18.3 Protection of the environment

The Contractor shall take all necessary measures to:

18.3.1 protect the environment (both on and off the Site); and

18.3.2 limit damage and nuisance to people and property resulting from pollution, noise and other results of the Contractor’s operations and/or activities.

The Contractor shall ensure that emissions, surface discharges, effluent and any other pollutants from the Contractor’s activities shall exceed neither the values indicated in the Specifications, nor those prescribed by applicable laws.

In the event of damage to the environment, property and/or nuisance to people, on or off Site as a result of the Contractor’s operations, the Contractor shall agree with the Project Manager the appropriate actions and time scale to remedy, as practicable, the damaged environment to its former condition. The Contractor shall implement such remedies at its cost to the satisfaction of the Project Manager.

19. Archaeological and Geological Findings

19.1 All fossils, coins, articles of value or antiquity, structures, groups of structures, and other remains or items of geological, archaeological, paleontological, historical, architectural or religious interest found on the Site shall be placed under the care and custody of the Employer. The Contractor shall:

(a) take all reasonable precautions, including fencing-off the area or site of the finding, to avoid further disturbance
and prevent Contractor’s Personnel or other persons from removing or damaging any of these findings;

(b) train relevant Contractor’s Personnel on appropriate actions to be taken in the event of such findings; and

(c) implement any other action consistent with the requirements of the Specifications and relevant laws.

The Contractor shall, as soon as practicable after discovery of any such finding, notify the Project Manager of such discoveries and carry out the Project Manager’s instructions for dealing with them.

20. Possession of the Site

20.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the PCC, the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.

21. Access to the Site

21.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager (including the Bank staff or consultants acting on the Bank’s behalf, stakeholders and third parties, such as independent experts, local communities, or non-governmental organizations), including to carry out environmental and social audit, as appropriate, access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

22. Instructions, Inspections and Audits

22.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.

22.2 The Contractor shall keep, and shall make all reasonable efforts to cause its Subcontractors and subconsultants to keep, accurate and systematic accounts and records in respect of the Works in such form and details as will clearly identify relevant time changes and costs.

22.3 Inspections & Audit by the Bank

Pursuant to paragraph 2.2 e. of Appendix A to the GCC- Fraud and Corruption, the Contractor shall permit and shall cause its agents (where declared or not), subcontractors, subconsultants, service providers, suppliers, and personnel, to permit, the Bank and/or persons appointed by the Bank to inspect the site and/or the accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have such accounts, records and other documents audited by
auditors appointed by the Bank. The Contractor’s and its Subcontractors’ and subconsultants’ attention is drawn to GCC Sub-Clause 25.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Bank’s inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank’s prevailing sanctions procedures).

23. Appointment of the Adjudicator

23.1 The Adjudicator shall be appointed jointly by the Employer and the Contractor, at the time of the Employer’s issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority designated in the PCC, to appoint the Adjudicator within 14 days of receipt of such request.

23.2 Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the PCC at the request of either party, within 14 days of receipt of such request.

24. Procedure for Disputes

24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 14 days of the notification of the Project Manager’s decision.

24.2 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.

24.3 The Adjudicator shall be paid by the hour at the rate specified in the PCC, together with reimbursable expenses of the types specified in the PCC, and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator’s written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator’s decision shall be final and binding.

24.4 The arbitration shall be conducted in accordance with the arbitration procedures published by the institution named and in the place specified in the PCC.
25. Fraud and Corruption

25.1 The Bank requires compliance with the Bank’s Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG’s Sanctions Framework, as set forth in Appendix A to the GCC.

25.2 The Employer requires the Contractor to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

26. Stakeholder Engagement

26.1 The Contractor shall provide relevant contract-related information, as the Employer and/or Project Manager may reasonably request to conduct Stakeholder engagements. “Stakeholder” refers to individuals or groups who:

(i) are affected or likely to be affected by the Contract; and
(ii) may have an interest in the Contract.

The Contractor may also directly participate in Stakeholder engagements, as the Employer and/or Project Manager may reasonably request.

27. Suppliers (other than Subcontractors)

27.1 Forced Labor: The Contractor shall take measures to require its suppliers (other than Subcontractors) not to employ or engage forced labor including trafficked persons as described in GCC Sub-Clause 9.4.14. If forced labor/trafficking cases are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.

27.2 Child Labor: The Contractor shall take measures to require its suppliers (other than Subcontractors) not to employ or engage child labor as described in GCC Sub-Clause 9.4.15. If child labor cases are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.

27.3 Serious Safety Issues: The Contractor, including its Subcontractors, shall comply with all applicable safety obligations, including as stated in GCC Sub-Clause 18.2. The Contractor shall also take measures to require its suppliers (other than Subcontractors) to adopt procedures and mitigation...
measures adequate to address safety issues related to their personnel. If serious safety issues are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.

27.4 Obtaining natural resource materials in relation to supplier: The Contractor shall obtain natural resource materials from suppliers that can demonstrate, through compliance with the applicable verification and/or certification requirements, that obtaining such materials is not contributing to the risk of significant conversion or significant degradation of natural or critical habitats such as unsustainably harvested wood products, gravel or sand extraction from river beds or beaches.

If a supplier cannot continue to demonstrate that obtaining such materials is not contributing to the risk of significant conversion or significant degradation of natural or critical habitats, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to demonstrate that they are not significantly adversely impacting the habitats.

28. Code of Conduct

28.1 The Contractor shall have a Code of Conduct for the Contractor’s Personnel.

The Contractor shall take all necessary measures to ensure that each Contractor’s Personnel is made aware of the Code of Conduct including specific behaviors that are prohibited, and understands the consequences of engaging in such prohibited behaviors.

These measures include providing instructions and documentation that can be understood by the Contractor’s Personnel and seeking to obtain that person’s signature acknowledging receipt of such instructions and/or documentation, as appropriate.

The Contractor shall also ensure that the Code of Conduct is visibly displayed in multiple locations on the Site and any other place where the Works will be carried out, as well as in areas outside the Site accessible to the local community and project affected people. The posted Code of Conduct shall be provided in languages comprehensible to Contractor’s Personnel, Employer’s Personnel and the local community.

The Contractor’s Management Strategy and Implementation Plans shall include appropriate processes for the Contractor to
verify compliance with these obligations.

29. Security of the Site

29.1 The Contractor shall be responsible for the security of the Site, and:

(a) for keeping unauthorized persons off the Site;

(b) authorized persons shall be limited to the Contractor’s Personnel, the Employer’s Personnel, and to any other personnel identified as authorized personnel (including the Employer’s other contractors on the Site), by a notice from the Employer or the Project Manager to the Contractor.

Subject to GCC Sub-Clause 16.2, the Contractor shall submit for the Project Manager’s No-objection a security management plan that sets out the security arrangements for the Site.

The Contractor shall (i) conduct appropriate background checks on any personnel retained to provide security; (ii) train the security personnel adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms), and appropriate conduct towards Contractor’s Personnel, Employer’s Personnel and affected communities; and (iii) require the security personnel to act within the applicable Laws and any requirements set out in the Specifications.

The Contractor shall not permit any use of force by security personnel in providing security except when used for preventive and defensive purposes in proportion to the nature and extent of the threat.

In making security arrangements, the Contractor shall also comply with any additional requirements stated in the Specification.”

B. Time Control

30. Program and Progress Reports

30.1 Within the time stated in the PCC, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump-sum contract, the activities in the Program shall be consistent with those in the Activity Schedule. The Project Manager’s approval of the Program shall not alter the Contractor’s obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.
30.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

30.3 The Contractor shall monitor progress of the Works and submit to the Project manager progress report and any updated Program showing the actual progress achieved and the effect of the progress achieved on the timing of the remaining Works, including any changes to the sequence of the activities, at intervals no longer than the period stated in the PCC. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount stated in the PCC from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of lump-sum Contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.

30.4 Unless otherwise stated in the Specifications, each progress report shall include the Environmental and Social (ES) metrics set out in Appendix B.

30.5 In addition to the progress reports, the Contractor shall inform the Project Manager immediately of any allegation, incident or accident in the Site, which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Employer’s Personnel, Project Manager’s personnel or Contractor’s Personnel. This includes, but is not limited to, any incident or accident causing fatality or serious injury; significant adverse effects or damage to private property; or any allegation of SEA and/or SH. In case of SEA and/or SH, while maintaining confidentiality as appropriate, the type of allegation (sexual exploitation, sexual abuse or sexual harassment), gender and age of the person who experienced the alleged incident should be included in the information.

The Contractor, upon becoming aware of the allegation, incident or accident, shall also immediately inform the Project Manager of any such incident or accident on the Subcontractors’ or suppliers’ premises relating to the Works which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Employer’s Personnel, or Contractor’s, its Subcontractors’ and suppliers’ personnel. The notification shall provide sufficient detail regarding such incidents or accidents. The Contractor shall provide full details of such incidents or accidents to the Project Manager within the timeframe agreed with the Project
Manager.

The Contractor shall require its Subcontractors and suppliers (other than Subcontractors) to immediately notify the Contractor of any incidents or accidents referred to in this Subclause.

31. Extension of the Intended Completion Date

31.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.

31.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

32. Acceleration

32.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Employer and the Contractor.

32.2 If the Contractor's priced proposals for an acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.

33. Delays Ordered by the Project Manager

33.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

34. Management Meetings

34.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

34.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended.
35. Early Warning

35.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

35.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

36. Identifying Defects

36.1 The Project Manager shall check the Contractor’s work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor’s responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.

37. Tests

37.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specifications to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.

38. Correction of Defects

38.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the PCC. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

38.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager’s notice.

39. Uncorrected Defects

39.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager’s notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.
D. Cost Control

40. Contract Price

40.1 The Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.

41. Changes in the Contract Price

41.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Employer.

41.2 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.

42. Variations

42.1 All Variations shall be included in updated Programs produced by the Contractor.

42.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Contractor shall also provide information of any ES risks and impacts of the Variation. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.

42.3 If the Contractor’s quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager’s own forecast of the effects of the Variation on the Contractor’s

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31 In lump-sum contracts, replace GCC Sub-Clauses 40.1 as follows:

40.1 The Contractor shall provide updated Activity Schedules within 14 days of being instructed to by the Project Manager. The Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. If payment for materials on site shall be made separately, the Contractor shall show delivery of Materials to the Site separately on the Activity Schedule.

32 In lump-sum contracts, replace entire GCC Clause 41 with new GCC Sub-Clause 41.1, as follows:

41.1 The Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor’s own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

33 In lump-sum contracts, add “and Activity Schedules” after “Programs.”
42.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

42.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

42.6 If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in GCC Sub-Clause 41.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.

42.7 Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following:

(a) the proposed change(s), and a description of the difference to the existing contract requirements;

(b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle cost) the Employer may incur in implementing the value engineering proposal;

(c) a description of any effect(s) of the change on performance/functionality; and

(d) a description of the proposed work to be performed, a program for its execution and sufficient ES information to enable an evaluation of ES risks and impacts.

The Employer may accept the value engineering proposal if the proposal demonstrates benefits that:

(a) accelerates the contract completion period; or

(b) reduces the Contract Price or the life cycle costs to the Employer; or

(c) improves the quality, efficiency, safety or sustainability

34 In lump-sum contracts, delete this paragraph.
of the Facilities; or

(d) yields any other benefits to the Employer, without compromising the functionality of the Works.

If the value engineering proposal is approved by the Employer and results in:

(a) a reduction of the Contract Price; the amount to be paid to the Contractor shall be the percentage specified in the PCC of the reduction in the Contract Price; or

(b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Contractor shall be the full increase in the Contract Price.

43. Cash Flow Forecasts

43.1 When the Program,\(^\text{35}\) is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

44. Payment Certificates

44.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

44.2 The Project Manager shall check the Contractor’s monthly statement and certify the amount to be paid to the Contractor.

44.3 The value of work executed shall be determined by the Project Manager.

44.4 The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed.\(^\text{36}\)

44.5 The value of work executed shall include the valuation of Variations and Compensation Events.

44.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

44.7 If the Contractor was, or is, failing to perform any ES obligations or work under the Contract, the value of this work or obligation, as determined by the Project Manager, may be

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\(^{35}\) In lump-sum contracts, add “or Activity Schedule” after “Program.”

\(^{36}\) In lump-sum contracts, replace this paragraph with the following: “The value of work executed shall comprise the value of completed activities in the Activity Schedule.”
 withheld until the work or obligation has been performed, and/or the cost of rectification or replacement, as determined by the Project Manager, may be withheld until rectification or replacement has been completed. Failure to perform includes, but is not limited to the following:

(a) failure to comply with any ES obligations or work described in the Works’ Requirements which may include: working outside site boundaries, excessive dust, failure to keep public roads in a safe usable condition, damage to offsite vegetation, pollution of water courses from oils or sedimentation, contamination of land e.g. from oils, human waste, damage to archeology or cultural heritage features, air pollution as a result of unauthorized and/or inefficient combustion;

(b) failure to regularly review C-ESMP and/or update it in a timely manner to address emerging ES issues, or anticipated risks or impacts;

(c) failure to implement the C-ESMP e.g. failure to provide required training or sensitization;

(d) failing to have appropriate consents/permits prior to undertaking Works or related activities;

(e) failure to submit ES report/s (as described in Appendix B), or failure to submit such reports in a timely manner;

(f) failure to implement remediation as instructed by the Project Manager within the specified timeframe (e.g. remediation addressing non-compliance/s).

45. Payments

45.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 28 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.

45.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
45.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.

45.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

46. Compensation Events

46.1 The following shall be Compensation Events:

(a) The Employer does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.

(b) The Employer modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.

(c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.

(d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.

(e) The Project Manager unreasonably does not approve a subcontract to be let.

(f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.

(g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.

(h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

(i) The advance payment is delayed.

(j) The effects on the Contractor of any of the Employer’s Risks.

(k) The Project Manager unreasonably delays issuing a Certificate of Completion.

46.2 If a Compensation Event would cause additional cost or would
prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

46.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor’s forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor’s forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager’s own forecast. The Project Manager shall assume that the Contractor shall react competently and promptly to the event.

46.4 The Contractor shall not be entitled to compensation to the extent that the Employer’s interests are adversely affected by the Contractor’s not having given early warning or not having cooperated with the Project Manager.

47. Tax

47.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 28 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 49.

48. Currencies

48.1 Where payments are made in currencies other than the currency of the Employer’s country specified in the PCC, the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor’s Bid.

49. Price Adjustment

49.1 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the PCC. If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies to each Contract currency:

\[ P_c = A_c + B_c \frac{I_{mc}}{I_{oc}} \]

where:

- \( P_c \) is the adjustment factor for the portion of the Contract Price payable in a specific currency “c.”
A_c and B_c are coefficients\textsuperscript{37} specified in the PCC, representing the nonadjustable and adjustable portions, respectively, of the Contract Price payable in that specific currency “c;” and

Im_c is the index prevailing at the end of the month being invoiced and Io_c is the index prevailing 28 days before Bid opening for inputs payable; both in the specific currency “c.”

49.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

50. Retention

50.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the PCC until Completion of the whole of the Works.

50.2 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC Sub-Clause 57.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an “on demand” Bank guarantee.

51. Liquidated Damages

51.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the PCC for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the PCC. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor’s liabilities.

51.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of

\textsuperscript{37} The sum of the two coefficients A_c and B_c should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A_c, for the nonadjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable components. The sum of the adjustments for each currency are added to the Contract Price.
payment to the date of repayment, at the rates specified in GCC Sub-Clause 45.1.

**52. Bonus**

52.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day *stated in the PCC* for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

**53. Advance Payment**

53.1 The Employer shall make advance payment to the Contractor of the amounts *stated in the PCC* by the date *stated in the PCC*, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.

53.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

53.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

**54. Securities**

54.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount *specified in the PCC*, by a bank or surety acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 days from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of issue of the Certificate of Completion in the case of a Performance Bond.

**55. Dayworks**

55.1 If applicable, the Dayworks rates in the Contractor’s Bid shall
be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

55.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.

55.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

56. **Cost of Repairs**

56.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor’s cost if the loss or damage arises from the Contractor’s acts or omissions.

57. **Completion**

57.1 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.

58. **Taking Over**

58.1 The Employer shall take over the Site and the Works within seven days of the Project Manager’s issuing a certificate of Completion.

59. **Final Account**

59.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor’s account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

60. **Operating and Maintenance Manuals**

60.1 If “as built” Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the PCC.

60.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the PCC pursuant to GCC Sub-Clause 60.1, or they do not receive the Project Manager’s approval, the Project Manager shall withhold the amount stated in the PCC from payments due to the Contractor.
61. Termination  

61.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

61.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:

(a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;

(b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;

(c) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 84 days of the date of the Project Manager’s certificate;

(e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;

(f) the Contractor does not maintain a Security, which is required;

(g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the PCC; or

(h) if the Contractor, in the judgment of the Employer has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix A to the GCC, in competing for or in executing the Contract, then the Employer may, after giving fourteen (14) days written notice to the Contractor, terminate the Contract and expel him from the Site.

61.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

61.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

61.5 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 61.2 above, the Project Manager shall decide whether the breach is fundamental or not.

62. Payment upon  

62.1 If the Contract is terminated because of a fundamental breach of
Termination

Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as specified in the PCC. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

62.2 If the Contract is terminated for the Employer’s convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor’s personnel employed solely on the Works, and the Contractor’s costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

63. Property

63.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor’s default.

64. Release from Performance

64.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

65. Suspension of Bank Loan or Credit

65.1 In the event that the Bank suspends the Loan or Credit to the Employer, from which part of the payments to the Contractor are being made:

(a) The Employer is obligated to notify the Contractor of such suspension within 7 days of having received the Bank’s suspension notice.

(b) If the Contractor has not received sums due to it within the 28 days for payment provided for in GCC Sub-Clause 45.1, the Contractor may immediately issue a 14-day termination notice.
66. Force Majeure

66.1 Definition of Force Majeure

In this Clause, "Force Majeure" means an exceptional event or circumstance:

(a) which is beyond a Party's control,
(b) which such Party could not reasonably have provided against before entering into the Contract,
(c) which, having arisen, such Party could not reasonably have avoided or overcome, and
(d) which is not substantially attributable to the other Party

Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

(i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
(ii) rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war,
(iii) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel and other employees of the Contractor and Subcontractors,
(iv) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and
(v) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.
(vi) Spread of any Pandemic diseases

66.2 Notice of Force Majeure

If a Party is or will be prevented from performing any of its obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.

The Party shall, having given notice, be excused performance of such obligations for so long as such Force Majeure prevents it from performing them.
Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

66.3 Duty to Minimise Delay

Each Party shall at all times use all reasonable endeavors to minimise any delay in the performance of the Contract as a result of Force Majeure. A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure

66.4 Consequences of Force Majeure

If the Contractor is prevented from performing any of his obligations under the Contract by Force Majeure of which notice has been given under Sub-Clause 66.2 [Notice of Force Majeure], and suffers delay and/or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Clause 46 [Compensation Events] to:

(a) an extension of time for any such delay, if completion is or will be delayed, under Clause 31 Extension of the Intended Completion Date, and

(b) if the event or circumstance is of the kind described in sub-paragraphs (i) to (iv) of Sub-Clause 66.1 [Definition of Force Majeure] and, in the case of sub-paragraphs (ii) to (iv) occurs in the Country, payment of any such Cost.

After receiving this notice, the Engineer shall proceed in accordance with Clause 4 [Project Manager’s Decisions] to agreed or determine these matters.

66.5 Force Majeure Affecting Sub-Contractor

If any Sub-contractor is entitled under any contract or agreement relating to the works to relief force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.

66.6 Optional Termination, Payment and Release

If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 66.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 61.4 of Clause 61 [Termination].
Upon such termination, the Engineer shall determine the value of the work done and issue a Payment Certificate which shall include:

(a) the amounts payable for any work carried out for which a price is stated in the Contract;

(b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, and the Contractor shall place the same at the Employer's disposal;

(c) any other Cost or liability which in the circumstances was reasonably incurred by the Contractor in the expectation of completing the Works;

(d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and

(e) the Cost of repatriation of the Contractor's staff and labour employed wholly in connection with the Works at the date of termination.

66.7 **Release from Performance under the Law**

Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other Party of such event or circumstance:

(a) the Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and

(b) the sum payable by the Employer to the Contractor shall be the same as would have been payable under Sub-Clause 66.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 66.6.
APPENDIX A
TO GENERAL CONDITIONS

Fraud and Corruption
(Text in this Appendix shall not be modified)

1. Purpose
1.1 The Bank’s Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements
2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

i. “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

ii. “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii. “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv. “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v. “obstructive practice” is:

(a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
(b) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under paragraph 2.2 e. below.

b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

d. Pursuant to the Bank’s Anti- Corruption Guidelines and in accordance with the Bank’s prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;38 (ii) to be a nominated39 sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;

e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders(applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect40 all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

38 For the avoidance of doubt, a sanctioned party’s ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

39 A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

40 Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.
APPENDIX B

Environmental and Social (ES) Metrics for Progress Reports

The potential impacts and risks during execution of this work of “Replacement of Wooden Sleepers with Chequered Plates and Strengthening of Patel Bridge” (referred here as sub-project)” are summarised below:

Environmental Impacts and Risks
1. Environment risks and impacts, as assessed above, for various project activities under this sub-project are categorised as Low and Moderate due to localised nature of proposed activities i.e. activities remain limited to barrage area except for labour camp and muck/debris disposal.
2. Execution of civil and hydro-mechanical work within barrage body will generate localised impacts on physical environment and resource use; pose risk of exposure of workers requiring personal protective equipment (PPE) use.
3. Civil works will impact land environment due to disposal of same on ground.
4. Construction waste, muck etc from this work would require careful disposal at pre-identified and approved site to minimise the risk of pollution on this count.
5. Rehabilitation work would require labour to work on various sections of barrage involving working at height, working in confined spaces, working on reservoir side, etc; Further, workers will also be exposed to dust and noise and will have to handle chemicals/gases for some of the works; these will lead to occupational health and safety risks

Social Impacts and Risks
1. As the interventions are within the barrage premises and on the barrage structure, there shall be no adverse impacts on land and assets due to any sub-component or sub-activities.
2. The barrage is not located in the Schedule V area, though, there is about 6.58% scheduled tribe population in the district and there are scheduled tribe households in vicinity and downstream areas. These households shall not be directly impacted by project in any manner. These ST households will be taken into account during the implementation of Emergency Action Plan.
3. Influx of migrant labour will be low as these works require only few but very skilled labours. Also, these workers will mostly operate from labour camps in
proximity to the barrage premises and hence there would be minimal interface with communities and therefore significantly lower SEAH/GBV risks.

4. Waste generation from labour colony can pollute drinking water sources of community; risk is low and can be mitigated by providing adequate sanitation facilities.

5. No impacts are envisaged on cultural heritage as no such sites are identified in project vicinity.

6. Labour related risk would include:
   - Safety issues while at work like injuries/accidents/ fatalities leading to even death, while at work; Occupational health and safety risks due to exposure of workers to unsafe conditions while working at heights, working using lifts, handling of equipment and machinery, exposure to air and noise pollution etc. will be addressed through OHS guidelines.
   - Short terms effects due to exposure to dust and noise levels, while at work
   - Long term effects on life due to exposure to chemical /hazardous wastes
   - Inadequate accommodation facilities at work force camp, including inadequate sanitation and health facilities
   - Sexual harassment at work
   - Absence or inadequate or inaccessible emergency response system for rescue of labour/workforce in situations of natural calamities.
   - Health risks of labour relating to HIV/AIDS and other sexually transmitted diseases
   - Non-payment of wages
   - Discrimination in Employment (e.g. abrupt termination of the employment, working conditions, wages or benefits etc.)
   - Unclear terms and conditions of employment
   - Discrimination and denial of equal opportunity in hiring and promotions/incentives/training opportunities
   - Denial for workers’ rights to form worker’s organizations, etc.
   - Absence of a grievance mechanism for labour to seek redressal of their grievances/issues

Risk Classification
Environment risks of air, water, noise, land use, soil and resource use for this work are considered moderate. Similarly, environment and social risk of labour camp and disposal of debris has also been identified as moderate. Risk of all other activities has been identified as Low. These risks are low to moderate and localised, short term and temporary in nature which can be managed with standard ESMP and guidelines.
The contractor shall abide all these rules & regulations. The quoted price shall be deemed to include the all expenses to fulfillment of these rules & regulations by bidder for the protection of environment, occupational health and safety of workers and protection of workers and employment terms.

In addition to above, four ESS standards are found relevant to this sub-project as per reasons given in Table below:

**Table : WB ESF Standards applicable to the sub-project**

<table>
<thead>
<tr>
<th>Relevant ESS</th>
<th>Reasons for Applicability of the standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESS2: Labour and Working Conditions</td>
<td>Due to engagement of Direct worker, Contracted workers and Community workers (likely for EAP and other non-structural interventions) for rehabilitation work</td>
</tr>
<tr>
<td>ESS3: Resource Efficiency, Pollution Prevention and Management</td>
<td>Civil and hydro-mechanical work including resource consumption; requiring protection of physical environment and conservation of resources</td>
</tr>
<tr>
<td>ESS 4: Community Health and Safety</td>
<td>Rehabilitation work, although limited to barrage complex, can increase community exposure to risk and impacts; directly or indirectly.</td>
</tr>
<tr>
<td>ESS 10: Stakeholder Engagement Plan</td>
<td>For engagement of stakeholders in all structural and non-structural measures e.g. implementation of Early flood Warning system, siren systems, broadcasting facilities, Emergency Action Plan etc.</td>
</tr>
</tbody>
</table>

**Mitigation and Management of Risk & Impacts:**

Since risks and impacts are low to moderate category, a standard ESMP customised to sub-project will be prepared in accordance with the ESMF. It shall cover the following aspects:

a. ESMP will provide due measures for labour management and protection of environment quality and resource conservation (during handling of resources) in line with ESF standard ESS2 and ESS3 respectively. Likewise, due attention will be given to Occupational Health and Safety of workers and community in line with the requirements of ESS4 and World Bank Group guidelines on Occupational Health and Safety (OHS). SPMU/IA shall customise the standard ESMP in line with outline provided in the ESMF and ensure its adherence by contractor. The customised ESMP will address the following:

- Gender Based Violence or SEA/SH related actions (ESS1)
- Labour Management Procedure (ESS2)
- Resource Efficiency and Pollution Prevention (ESS3)
- Community Health and Safety (ESS4)
- Stakeholders Engagement Plan (ESS10)

b. Contractor shall submit BOQ as per ESMP of the sub project.

The contractor shall abide above legislative requirements and also ensure to prepare its own ESMP (C-ESMP) as outlined in ESMP for this sub-project and submit compliance reports to UJVNL on quarterly basis. UJVNL will share regular implementation status of ESMPs to CWC and The World Bank in line with ESMF on quarterly basis.

MINIMUM REQUIREMENTS FOR THE BIDDER’S CODE OF CONDUCT

Following ESHS requirements and code of conduct shall be comply by the contractor’s personnel (including sub-contractors and day workers) during execution of contract:

1. Compliance with applicable laws, rules, and regulations
2. Compliance with applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), the Employer’s and Project Manager’s personnel, and the Contractor’s personnel, including sub-contractors and day workers, (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment)
3. The use of illegal substances
4. Non-Discrimination in dealing with the local community (including vulnerable and disadvantaged groups), the Employer’s and Project Manager’s personnel, and the Contractor’s personnel, including sub-contractors and day workers (for example on the basis of family status, ethnicity, race, gender, religion, language, marital status, age, disability (physical and mental), sexual orientation, gender identity, political conviction or social, civic, or health status)
5. Interactions with the local community(ies), members of the local community (ies), and any affected person(s) (for example to convey an attitude of respect, including to their culture and traditions)
6. Sexual harassment (for example to prohibit use of language or behavior, in particular towards women and/or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate)
7. Violence including sexual and/or gender based violence (for example acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion, and deprivation of liberty
8. Exploitation including sexual exploitation and abuse (for example the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading behavior, exploitative behavior or abuse of power)
9. Protection of children (including prohibitions against sexual activity or abuse, or otherwise unacceptable behavior towards children, limiting interactions with children, and ensuring their safety in project areas)
10. Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer and not open areas)
11. Avoidance of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection)
12. Respecting reasonable work instructions (including regarding environmental and social norms)
13. Protection and proper use of property (for example, to prohibit theft, carelessness or waste)
14. Duty to report violations of this Code
15. Non retaliation against workers who report violations of the Code, if that report is made in good faith.
16. The code of conduct shall contain a statement that the term “child” / “children” means any person(s) under the age of 18 years.

The Code of Conduct should be written in plain language and signed by each worker to indicate that they have:
- received a copy of the code;
- had the code explained to them;
- acknowledged that adherence to this Code of Conduct is a condition of employment; and understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities

A copy of the code shall be displayed in a location easily accessible to the community and project affected people. It shall be provided in languages comprehensible to the local community, Contractor’s personnel (including sub-contractors and day workers), Employer’s and Project Manager’s personnel, and affected persons.

**PAYMENT FOR ESHS REQUIREMENTS**

The cost to comply the ESHS requirement during execution of work shall be deemed to include in the quoted price of respective items. No separate payment shall be made.

Bidders are requested to visit ‘clearances and reports’ on environment section on the website: [www.ujvnl.com](http://www.ujvnl.com) for ESHS requirement during the execution of the work. The ESDD and ESMP for Ichari Dam/Dakpathar Barrage has been uploaded on the website.
Section IX - Particular Conditions of Contract

A. General

<table>
<thead>
<tr>
<th>GCC 1.1 (d)</th>
<th>The financing institution is: The World Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCC 1.1 (r)</td>
<td>The Employer is UJVN Ltd, Dehradun through its MD UJVNL and his authorized representatives. Name: Executive Engineer, Project Civil maintenance, UJVN Limited dakpathar</td>
</tr>
<tr>
<td>GCC 1.1 (v)</td>
<td>The Intended Completion Date for the whole of the Works shall be 12 months (including rainy season) after commencement date</td>
</tr>
<tr>
<td>GCC 1.1 (y)</td>
<td>The Project Manager is Executive Engineer Project Civil Maintenance, Dakpathar, Dehradun-248125-India. The word Project Manager &amp; Engineer in charge is synonymous.</td>
</tr>
<tr>
<td>GCC 1.1 (aa)</td>
<td>The Site is Patel Bridge located at the downstream of the Chibro Power House</td>
</tr>
<tr>
<td>GCC 1.1 (dd)</td>
<td>The Start Date shall be 10 days after the date of issue of notice to proceed with works to the contractor.</td>
</tr>
<tr>
<td>GCC 1.1 (hh)</td>
<td>The Works consist of “Replacement of Wooden Sleepers with Chequered Plates and Strengthening of Patel Bridge”</td>
</tr>
<tr>
<td>GCC 1.1 (jj)</td>
<td>GCC 1.1 (jj) is replaced with the following: “Key Personnel are the Contractor’s personnel named in GCC 9.1 of the Particular Conditions of Contract.”</td>
</tr>
</tbody>
</table>

| GCC 2.2 | Sectional Completions are: [insert nature and dates, if appropriate] |

<table>
<thead>
<tr>
<th>Civil works</th>
<th>Time for completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mile Stone –I Completion of 50% of the work</td>
<td>6 months from the date of commencement of work</td>
</tr>
<tr>
<td>Mile Stone –II Completion of 100% of the work</td>
<td>12 months from the date of commencement of work</td>
</tr>
</tbody>
</table>
**GCC 2.3(i)** The following documents also form part of the Contract:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Document Description of the document</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Construction methodology given in bid amended as per comments of employer given in letter of acceptance.</td>
</tr>
<tr>
<td>2.</td>
<td>Quality control procedures and assurance plans given in the bid and amended as per comments of Employer given in letter of acceptance.</td>
</tr>
<tr>
<td>3.</td>
<td>Appendix A – Fraud and Corruption</td>
</tr>
<tr>
<td>4.</td>
<td>Appendix B - Environmental and Social (ES) Metrics for Progress Reports.</td>
</tr>
<tr>
<td>5.</td>
<td>Joint Venture Agreement (for JVs only).</td>
</tr>
</tbody>
</table>

**GCC 3.1** The following is inserted as a sub-clause at the end of GCC 3.1:

"Salient features of major labour and other laws that are applicable to construction industry in India are given as Appendix 1 to these General Conditions of Contract."

The language of the contract is *English*.

The law that applies to the Contract are the laws of Union of India.

**GCC 4.1** The following is inserted as a sub-paragraph at the end of GCC 4.1:

"However, if the Project Manager is required, under the rules and regulations and orders of the Employer, to obtain approval of some other authorities for specific actions, he will so obtain the approval. Provided further that any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Project Manager."

**GCC 5.1** The Executive Engineer *may* delegate any of his duties and responsibilities to subordinates as per the delegation powers prevailing in UJVNL.

**GCC 6.1** The following is inserted at the end of GCC 6.1:

"All oral instructions shall be confirmed in writing in seven working days."

**GCC 7** The first sentence of GCC 7.1 is modified as:

"The Contractor may subcontract with the approval of the Project Manager up to a ceiling **specified in PCC**, but may not assign the Contract without the approval of the Employer in writing."
The following sub-clauses are inserted at the end of GCC 7.1:

“7.2 The Project Manager should satisfy himself before recommending to the Employer whether:

a) the circumstances warrant such sub-contracting; and,

b) the sub-Contractor so proposed for the Work possesses the experience, qualifications and equipment necessary for the job proposed to be entrusted to him in proportion to the quantum of Works to be sub-contracted.

7.3 If payments are proposed to be made directly to that sub-contractor, this should be subject to specific authorization by the prime contractor so that his arrangement does not alter the contractor’s liability or obligations under the contract.

7.4 The Contractor shall not be required to obtain any consent from the Employer for:

(a) the sub-contracting of any part of the Works for which the Sub-Contractor is already named in the contract;

(b) the provision for labour, or labour component, and,

(c) the purchase of materials which are in accordance with the standards specified in the contract.

GCC 7.1  The ceiling for sub-contractor is 25% [This is in addition to what was stated in bid and incorporated in contract agreement.]. Hiding information about any sub-contracting not authorized by the Employer shall be treated as violation of Appendix A to General Conditions (Fraud and Corruption).

GCC 8.1  Schedule of other contractors: *Not applicable*

GCC 9  The following is inserted as a sub-clause at the end of GCC 9.2:

“In all the above cases, the contractor shall ensure that the person leaves the site within seven days and has no further connection with the work in the contract. The Contractor shall appoint a suitable replacement within 28 days or earlier as may be agreed to between the Project Manager and the Contractor.”

The following sentence is deleted from first paragraph of GCC 9.4.1:

“The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within the Country.”
GCC 9.4.3 and GCC 9.4.4 are deleted.

The following sub-clauses are inserted at the end of GCC 9.4:

“9.5 The Contractor shall not employ any retired Gazetted officer who has either not completed two years after the date of retirement or has not obtained permission from the Government authorities for employment with the Contractor.

9.6 During continuance of the Contract, the Contractor and his Sub-Contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour laws (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law prevailing on the Base Date either by the State or the Central Government or the local authority. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contraventions including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Project Manager/ Employer shall have the right to deduct any money due to the Contractor including his amount of performance security and if applicable, the Environmental and Social (ES) Performance Security. The Employer/ Project Manager shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

9.7 The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

9.8 The Contractor shall duly comply with the provisions of the Apprentices Act 1961 (III of 1961) and the rules made there under, and comply, failure or neglect to shall be subject to all liabilities and penalties provided in the said Act and Rules.”

| GCC 9.1 | [insert the name/s of each Key Personnel agreed by the Employer prior to Contract signature, Schedule of Key Personnel and equipment as indicated in accepted bid & construction methodology]. |
| GCC 13.1 | The minimum insurance amounts and deductibles shall be: |

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Description</th>
<th>Minimum cover for</th>
<th>Maximum deductible for</th>
</tr>
</thead>
</table>

41 Based on Government Directives.
| (i) | Works and Plant and Materials which are incorporated in works | 110% of the contract value | Rs 0.75 lacs |
| (ii) | Loss or damage to Construction Equipment | Rs 1.00 lacs | Rs 0.10 lacs |
| (iii) | Other Property | Rs 2.00 lacs | Rs 0.10 lacs |
| (iv) | Personal injury or death insurance: | Rs 2.00 lacs | Rs 0.50 lacs |
| | a) for other people; | | |
| | b) for Contractor’s Employees | In accordance with the statutory requirements applicable in India |

**GCC 14.1**

Site Data are:

Patel Bridge is located at the downstream of Chibro Power House. The bridge is located at 14 kms from Dakpathar. It is a truss bridge with deodar sleepers forming the deck. An expert team from IIT Roorkee has inspected the present condition of the bridge and have recommended to replace the wooden sleepers forming the deck of the bridge which are deteriorated with metal plates. It has recommended to paint the bridge immediately and to avoid corrosion by regular painting and maintenance. The access to intake structure of the head race tunnel for Khodri Power house will be inaccessible in absence of this bridge. The work proposed includes replacement of wooden sleepers by chequered plates and providing necessary safety provisions which shall include provision of bolts wherever necessary and structural steel members of sufficient strength. The work shall also include painting of bridge to prevent it from corrosion and further deterioration of its structural strength.

**GCC 15.1 (Add new 15.1.1 & 15.1.2)**

GCC 15.1 is replaced with the following:

“The Contractor shall construct and install the Works in accordance with the Specifications and Drawings and as per instructions of Project Manager.”

15.1.1 The lugeon value in the post grouting scenario in the overburden shall be approximately 5 lugeon.

15.1.2 The contractor shall submit the following details in respect of over-burden grouting for approval of the client:

(i) Methodology and approach for grouting procedures.
(ii) Drawings showing location, spacing, and diameter of holes including locations for water loss tests.
(iii) Grout mix design and Grout ability test results of trial grout mix

| GCC 18 (add new 18.3.3) | The following is inserted as a new sub-clause 18.3.3:  
“18.3.3 During continuance of the contract, the contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made thereunder, regulations, notifications and by-laws of the State or Central Government, or local authorities and other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority. Salient features of the major laws are given in Appendix 1 to the General Conditions of Contract.” |

| GCC 20.1 | The Site Possession Date(s) shall be: Within 10 days from issuance of letter of acceptance. |

| GCC 23 | The following is inserted as a new sub-clause 23.1.1:  
“23.1.1 The Adjudicator should be in position before “notice to proceed with work” is issued to the Contractor and an agreement should be signed with the Adjudicator jointly by the Employer and the Contractor in the form attached – Appendix 3.” |

| GCC 23.1 & GCC 23.2 | Name oftheagreed Adjudicator: shall be notified before signing of contract……..  
Appointing Authority for the Adjudicator, (if on dispute): Managing Director, UJVN Ltd, Dehradun |

| GCC 24 | In the first sentence in GCC 24.3, the words “The Adjudicator shall be paid by the hour at the rate” are replaced by the words “The Adjudicator shall be paid daily at the rate” |

| GCC 24.3 | Daily rate and types of reimbursable expenses to be paid to the Adjudicator: Rs 10000 /- per day with overall payment not more than Rs 50000/- and reimbursable expenses – boarding / lodging / travel etc as applicable to the designation as per Government of Uttarakhand, travelling allowance rules amended up to date of uploading of tenders. |

| GCC 24.4 | The procedure for adhoc arbitration will be as follows:  
(a) In case of Dispute or difference arising between the Employer and a Contractor relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 Arbitrators one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding Arbitrator. In case of failure of the two
Arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the Arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the* Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India).

(b) If one of the parties fails to appoint its Arbitrator in pursuance of sub-clause (a) above within 30 days after receipt of the notice of the appointment of its Arbitrator by the other party, then the *Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India), both in cases of Foreign Contractor as well as Indian Contractor, shall appoint the Arbitrator. A certified copy of the order of the* Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India), making such an appointment shall be furnished to each of the parties.

(c) Arbitration may be commenced prior to or after completion of the Works, provided that the obligations of the Employer, the Project Manager, the Contractor and the Adjudicator shall not be altered by reason of the arbitration being conducted during the progress of the Works.

(d) Arbitration proceedings shall be held at Deharadun, Uttarakhand and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.

(e) The decision of the majority of Arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the Arbitrator appointed by such party or on its behalf shall be borne by each party itself.

(f) Where the value of the contract is Rs.50 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority, namely the the Chairman, The Institute of Engineers, Uttarakhand State Center, Bangaluru

(g) The Arbitrator should give final award within 180 days of starting of the proceedings

(h) Performance under the contract shall continue during the arbitration
proceedings and payments due to the contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

### B. Time Control

<table>
<thead>
<tr>
<th>GCC 30.1</th>
<th>The Contractor shall submit for approval a Program for the Works within 14 days of delivery of the Letter of Acceptance. Any revision in Program should only be agreed in writing.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GCC 30.3</strong></td>
<td>The period between Program updates is 30 days. The amount to be withheld for late submission of an updated Program is INR 5,00,000/- The period for submission of progress reports is 30 days.</td>
</tr>
<tr>
<td>GCC 31</td>
<td>GCC 31.1 is replaced with the following: “31.1 The Project Manager shall extend the Intended Completion Date including milestones if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date as per the agreed milestones without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.” In GCC 31.2, replace the words “Intended Completion Date” at the first occurrence by the words “Intended Completion Date/ Milestones”; and at the second occurrence by the words “Intended Completion Date/ Milestone”.</td>
</tr>
<tr>
<td>GCC 34</td>
<td>GCC 34.1 is replaced with the following: “Either the Project Manager or the Contractor may require the other to attend a management meeting (which will be held at the place indicated in PCC. The periodicity shall be fixed by Project Manager/ Contractor jointly). The business of a management meeting shall be to review the progress of construction with reference to the construction program given in accordance with GCC 30.1, the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.”</td>
</tr>
<tr>
<td>GCC 34.1</td>
<td>Venue of management meeting will be...Dehradun..... The management meetings shall be held at intervals of 30 days</td>
</tr>
</tbody>
</table>
### C. Quality Control

<table>
<thead>
<tr>
<th>GCC 36</th>
<th>The following sub-clause is inserted at the end of GCC 36.1:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“36.2 The contractor shall permit the Employer’s Technical auditor to check the contractor’s work and notify the Project Manager and Contractor of any defects that are found. Such a check shall not affect the Contractor’s or the Project Manager’s responsibility as defined in the Contract Agreement.”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GCC 37</th>
<th>The following sub-clauses are inserted before GCC 37.1, and GCC 37.1 is re-numbered as GCC 37.3:</th>
</tr>
</thead>
</table>
|        | “GCC 37.1 :The Contractor shall institute Quality Assurance (QA) and Quality Control (QC) systems in accordance with Quality Assurance Plan to demonstrate compliance with the requirements of the Contract as approved by the Project Manager. Compliance with the QA/QC systems shall not relieve the Contractor of any of his duties obligations or responsibilities under the Contract.  

The Contractor shall be completely responsible for performing detailed quality control program during the execution of the work. This quality assurance program shall be subject to supervision, inspection, checking and monitoring by third party like NCCBM, CBIP, CSMRS or another reputed firm in this field.  

GCC 37.2 The Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labour, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently.” |

| GCC 38.1 | The Defects Liability Period is: **365 days.** |

<table>
<thead>
<tr>
<th>GCC 39.1</th>
<th>The following notes are added at the end of GCC 39.1:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Note: 1. Where in certain cases, the technical specifications provide for acceptance of works within specified tolerance limits at reduced rates, Project Manager will certify payments to Contractor accordingly.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>2. Where the failure to correct a particular defect within the specified time is considered as a fundamental breach of contract a notice should be given to the contractor as stated in GCC 61.2(e).</strong></td>
</tr>
<tr>
<td>Section</td>
<td>Modification</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>GCC 41</td>
<td>GCC 41.1 is replaced with the following, and existing GCC 41.2 is re-numbered as GCC 41.3:</td>
</tr>
<tr>
<td></td>
<td>“41.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change.</td>
</tr>
<tr>
<td></td>
<td>(a) If the quantity of work executed exceeds the quantity of the item in BOQ beyond the higher specified limit the Project Manager shall fix the rate to be applied for the additional quantity of the work executed.</td>
</tr>
<tr>
<td></td>
<td>(b) If the quantity of work executed is less than the quantity of the item in BOQ and is lesser than the lower specified limit, the Project Manager shall fix the rate to be applied for whole of the quantity of the work so executed.</td>
</tr>
<tr>
<td></td>
<td>41.2 The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Employer.”</td>
</tr>
<tr>
<td>GCC 42</td>
<td>In GCC 42.2, the first sentence is modified as follows:</td>
</tr>
<tr>
<td></td>
<td>“The Contractor shall provide the Project Manager with a quotation (with breakdown of unit rates) for carrying out the Variation when requested to do so by the Project Manager. The Contractor shall also provide a description of the varied work performed or to be performed, including details of the resources and methods adopted or to be adopted by the Contractor.”</td>
</tr>
<tr>
<td></td>
<td>In the first sentence in GCC 42.3, after the words ‘If the Contractor’s quotation is unreasonable’, the following is added:</td>
</tr>
<tr>
<td></td>
<td>“[or if contractor fails to provide the Project Manager with a quotation within a reasonable time specified by Project Manager in accordance with GCC 42.2]”</td>
</tr>
<tr>
<td>GCC 42.7</td>
<td>Provisions related to Value Engineering do not apply.</td>
</tr>
<tr>
<td>GCC 43.1</td>
<td>The second sentence in GCC 43.1 is replaced with the following:</td>
</tr>
<tr>
<td></td>
<td>“The cash flow forecast shall be in Indian Rupees.”</td>
</tr>
<tr>
<td>GCC 44</td>
<td>At the end of GCC 44.1 after the word ‘previously’, the following words are added:</td>
</tr>
</tbody>
</table>
|         | “alongwith details of measurement of the quantity of works executed in a
At the end of GCC 44.2 after the words ‘the Contractor’, the following words are added:

“after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amount and under conditions set forth in GCC Sub-Clause 53.1 (Secured Advance)”

GCC 45

GCC 45.1 is replaced with the following:

“Payments shall be adjusted for deductions for advance payments, retention, other recoveries in terms of contract & taxes to be deducted at source [TDS] as per applicable law. The Employer shall pay the Contractor the amounts certified by the Project Manager within 28 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the rate stated in the PCC.”

A new sub-clause 45.5 is added after sub-clause 45.4:

“45.5 The Contractor shall open an Escrow Account with his bank for the purpose of receiving all the payments as well as incurring expenditure under this Contract. The Account shall be open to verification and audit at any time by the Employer or designee of the Employer. This account will be controlled solely by the Contractor’s Project Officers (Project Manager and/or Finance Manager or equivalent designate). No other Contractor employees or associates will have access to the Project Account or the funds therein. The Contractor shall report monthly on the status of this account including actual bank account statements. The Contractor shall provide all Account statements as requested by the Employer.”

GCC 45.1 Interest rate for Delayed payment is 0% per annum

GCC 45.3 All payments (and deductions) shall be paid or charged in Indian Rupees.

GCC 45.5 Deleted

GCC 47 The following sub-clause is inserted before GCC 47.1, and GCC 47.1 is re-numbered as GCC 47.2:

“47.1 The rates quoted by the Contractor shall be deemed to be inclusive of the GST and other taxes that the Contractor will have to pay for the performance of this Contract. The Employer will perform such
duties in regard to the deduction of such taxes at source [TDS] as per applicable law.”

In first line of the re-numbered GCC 47.2, replace the words ‘the date 28 days before’ with the words ‘the deadline for’.

| GCC 48 | All payments shall be made in Indian Rupees. |
| GCC 49 | Price Adjustment:  
The contract is Not subjected to price adjustment |
| GCC 50.1 | The proportion of payments retained (Retention Money) shall be 5% from each bill subject to the maximum of 5% of final contract price. |
| GCC 50.2 | The last line of GCC 50.2 is replaced with the following:  
“On completion of the whole works the Contractor may substitute the balance retention money with an “on demand” Bank guarantee.” |

| GCC 51 | In the first sentence of GCC 51.1, the following words are inserted after the words ‘Intended Completion Date’:  
“(for the whole of the works or the milestones as stated in the PCC)”  
The following is inserted as a sub-paragraph at the end of GCC 51.1:  
“Time is the essence of the contract and payment or deduction of liquidated damages shall not relieve the contractor from his obligation to complete the work as per agreed construction program and milestones, or from any of the Contractor’s other obligations and liabilities under the contract.”  
In the first sentence in GCC 51.2 the following words are inserted after the words ‘Intended Completion Date’:  
“including milestones” |

| GCC 51.1 | The liquidated damages for the whole of the Works are **[0.05% of the final Contract Price per day]**. The maximum number of liquidated damages for the whole of the Works is **[10 percentage] of the final Contract Price**.  
For milestone 1 Rs. 5,000/- per day  
For milestone 2 Rs. 5,000/-per day  
All works Rs. 8,000/- per day |
GCC 52.1 | Provisions related to Bonus *do not* apply.

GCC 53 | The following is inserted as a new sub-clause 53.4:

“The Project Manager shall make advance payment in respect of materials intended for but not yet incorporated in the Works in accordance with conditions *stipulated in the PCC*.”

GCC 53.1 | Advance Payments shall be made in Indian Rupees only. The amount of the Advance Payments are:

<table>
<thead>
<tr>
<th>Nature of Advance</th>
<th>Amount (Rs.)</th>
<th>Conditions to be fulfilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mobilization[^42]</td>
<td>5% of the Contract price</td>
<td>On submission of un-conditional Bank Guarantee. (to be drawn before end of 20% of Contract period)</td>
</tr>
<tr>
<td>2. Equipment</td>
<td>90% for new and 50% of depreciated value for old equipment. Total amount will be subject to a maximum of 5% of the Contract price.</td>
<td>After equipment is brought to site as per agreed construction program (provided the Project Manager is satisfied that the equipment is required for performance of the contract) and on submission of unconditional Bank Guarantee for amount of advance.</td>
</tr>
<tr>
<td>3. Secured advance for non-perishable materials brought to site [Specify the item or items for which this will be given here]</td>
<td>75% of Invoice value or Market value – lower of the two.</td>
<td>a) The materials are in-accordance with the specification for Works; b) Such materials have been delivered to site, and</td>
</tr>
</tbody>
</table>

[^42]: The amount of mobilization advance could be increased or decreased based on nature of the work. Also, the advance could be released in single or multiple instalments.
are properly stored and protected against damage or deterioration to the satisfaction of the Project Manager.

c) the Contractor’s records of the requirements, orders, receipt and use of materials are kept in a form approved by the Project Manager and such records shall be available for inspection by the Project Manager;

d) The contractor has submitted with his monthly statement the estimated value of the materials on site together with such documents as may be required by the Project Manager for the Purpose of valuation for material and providing evidence of ownership and payment thereof;

e) Ownership of such materials shall be deemed to vest in the Employer for which the Contractor has submitted an Indemnity Bond in an acceptable format; and
f) The quantity of materials are not excessive and shall be used within a reasonable time as determined by the Project Manager.

(The advance payment will be paid to the Contractor no later than 15 days after fulfilment of the above conditions).

**Repayment of advance payment for mobilization and equipment:**

The advance shall be repaid with percentage deductions from the interim payments certified by the Project Manager under the Contract. Deductions shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the contractor has reached not less than 15 percent of the Contract Price or 9 months from the date of payment of first instalment of advance, whichever period concludes earlier, and shall be made at the rate of 15% (Fifteen percent) of the amounts of all Interim Payment Certificates until such time as the advance has been repaid, always provided that the advance shall be completely repaid prior to the expiry of the original time for completion.

On recovery of 100% amount paid against of the Advance Payment, the Employer shall release the Bank Guarantee to the Contractor, within 21 days from such request made by the Contractor. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 21 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment is repaid.

**Repayment of secured advance:**

The advance shall be repaid from each succeeding monthly payment to the extent materials [for which advance was previously paid pursuant to Clause 53 of GCC and 53.1(3) of PCC.] have been incorporated into the Works.

@ Stipulate appropriately, namely 30% for 20% advance, 25% for 15% advance, 15% for 10% advance and 7.5% for 5% advance respectively.

The amount of the Guarantee may be progressively reduced by the amounts repaid by the Contractor, each instalment not less than Rs. 500,000.

**GCC 54.1**

GCC 54.1 is replaced with the following:

“The Performance Security and an Environmental and Social (ES)
Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in the amounts specified in the PCC, and shall be issued by a Nationalized or Scheduled bank in India. The Performance Security including additional security for unbalanced bids, and the ES Performance Security, shall be valid until a date 28 days from the date of issue of the Certificate of Completion.

If the terms of the Performance Security and additional security, specify its expiry date, and the Contractor has not become entitled to receive the Completion Certificate by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the Performance Security and additional security, until the end of extended Completion Period.”

The Performance Security amount is 5 percent of Contract Amount plus additional security for unbalanced bids [in terms of ITB Clause 41.2], and Environmental and Social (ES) Performance Security amount is 1 percent of Contract Amount.

The standard forms of Performance Security and if applicable ES Security acceptable to the Employer shall be unconditional Bank Guarantees from Scheduled or Nationalized banks in India of the types as presented in Section X of the Bidding Document.

[Notes: The Bank Guarantees shall be unconditional (on demand) (see Section X, Contract Forms).

Throughout this bidding document the term ‘performance security’, unless the context clearly indicates otherwise, means and includes both ‘the performance security and the ES performance security’ to be submitted by the successful bidder in the amounts specified above.

<table>
<thead>
<tr>
<th>E. Finishing the Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GCC 59.1</strong></td>
</tr>
<tr>
<td>The following is added after the words ‘issue a payment certificate’ at the end of GCC 59.1:</td>
</tr>
<tr>
<td>“within 56 days of receiving the contractor’s revised account”</td>
</tr>
</tbody>
</table>

| **GCC 60.1**              |
| The date by which operating and maintenance manuals are required is within 28 days of issue of certificate of completion of whole or section of work, as the case may be 365 Days after commencement of work. |
| The date by which “as built” drawings (in scale1:25) including a compact disc containing digitized drawings in 2 sets are required is within 28 days of issue of certificate of completion of whole or section of the work, as the case may be 365 Days after commencement of work. |
| GCC 60.2 | The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required in GCC 60.1 is 1% of the Bid value. |
| GCC 61 | The following sub-clauses are added after GCC 61.2 (h):

“(i) The contractor has contravened Clauses 7 and 9 of GCC.

(j) The contractor does not adhere to the agreed construction program, agreed ES-MSIP [Clause 30 of GCC], and also fails to take satisfactory remedial action as per agreements reached in the management meetings [Clause 30 of GCC] for a period of 60 days.

(k) The contractor fails to carry out the instructions of the Project Manager within a reasonable time determined by the Project Manager in accordance with GCC Clause 15.1 and 22.

(l) The contractor (in case of Joint Venture) has modified the composition of the joint venture and/or the responsibility of each member of the joint venture from what is stated in joint venture agreement without the prior approval of the Employer.” |
| GCC 61.2 (g) | The maximum number of days is: **200 days** after commencement of works |
| GCC 61.2 (l) | Hiding any information regarding changes in roles and responsibilities of JV members, which is not authorized by the Employer, shall also be treated as violation of Appendix A to General Conditions (Fraud and Corruption). |
| GCC 62 | The following is added after the words ‘issue of the certificate’ in the first sentence of GCC 62.1:

“less other recoveries due in terms of contract, less taxes to be deducted at source [TDS] as per applicable law,”

The following is added after the words ‘date of the certificate’ at the end of GCC 62.2:

“less other recoveries due in terms of contract, less taxes to be deducted at source [TDS] as per applicable law” |
| GCC 62.1 | The percentage to apply to the value of the work not completed, representing the Employer’s additional cost for completing the Works, is 20%. |
Appendices
Appendix 1
Salient Features of Labour & Environment Protection Laws

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK

(a) Employees Compensation Act 1923: The Act provides for compensation in case of injury, disease or death arising out of and during the course of employment.

(b) Payment of Gratuity Act 1972: Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years’ service or more or on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

(c) Employees P.F. and Miscellaneous Provision Act 1952 (since amended): The Act provides for monthly contribution by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:

(i) Pension or family pension on retirement or death, as the case may be.
(ii) Deposit linked insurance on the death in harness of the worker.
(iii) Payment of P.F. accumulation on retirement/death etc.

(d) Maternity Benefit Act 1961: The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.

(e) Sexual Harassment of Women at the Workplace (Prevention, Prohibition and Redressal) Act, 2013: This Act defines sexual harassment in the workplace, provides for an enquiry procedure in case of complaints and mandates the setting up of an Internal Complaints Committee or a Local Complaints Committee.

(f) Contract Labour (Regulation & Abolition) Act 1970: The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.

43This list is only illustrative and not exhaustive. Bidders and Contractors are responsible for checking the correctness and completeness of the list. The law as current on the date of bid opening will apply.
(g) **Minimum Wages Act 1948**: The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employment.

(h) **Payment of Wages Act 1936**: It lays down the mode, manner and by what date the wages are to be paid, what deductions can be made from the wages of the workers.

(i) **Equal Remuneration Act 1976**: The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.

(j) **Payment of Bonus Act 1965**: The Act is applicable to all establishments employing 20 or more employees. Some of the State Governments have reduced this requirement from 20 to 10. The Act provides for payments of annual bonus subject to a minimum of 8.33% of the wages drawn in the relevant year. It applies to skilled or unskilled manual, supervisory, managerial, administrative, technical or clerical work for hire or reward to employees who draw a salary of Rs. 10,000/- per month or less. To be eligible for bonus, the employee should have worked in the establishment for not less than 30 working days in the relevant year. The Act does not apply to certain establishments.

(k) **Industrial Disputes Act 1947**: The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations, a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

(l) **Trade Unions Act 1926**: The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.

(m) **Child Labour (Prohibition & Regulation) Act 1986**: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in the Building and Construction Industry.

(n) **Inter-State Migrant workmen’s (Regulation of Employment & Conditions of Service) Act 1979**: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and back etc.
| (o) | **The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Building and Other Construction Workers Welfare Cess Act, 1996 (BOCWW Cess Act):** All the establishments who carry on any building or other construction work and employ 10 or more workers are covered under these Acts. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be notified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government. |
| (p) | **Factories Act 1948:** the Act lays down the procedure for approval of plans before setting up a factory engaged in manufacturing processes, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power. |
| (q) | **Weekly Holidays Act -1942** |
| (r) | **Bonded Labour System (Abolition) Act, 1976:** The Act provides for the abolition of bonded labour system with a view to preventing the economic and physical exploitation of weaker sections of society. Bonded labour covers all forms of forced labour, including that arising out of a loan, debt or advance. |
| (s) | **Employer’s Liability Act, 1938:** This Act protects workmen who bring suits for damages against employers in case of injuries endured in the course of employment. Such injuries could be on account of negligence on the part of the employer or persons employed by them in maintenance of all machinery, equipment etc. in healthy and sound condition. |
| (t) | **Employees State Insurance Act 1948:** The Act provides for certain benefits to insured employees and their families in case of sickness, maternity and disablement arising out of an employment injury. The Act applies to all employees in factories (as defined) or establishments which may be so notified by the appropriate Government. The Act provides for the setting up of an Employees’ State Insurance Fund, which is to be administered by the Employees State Insurance Corporation. Contributions to the Fund are paid by the employer and the employee at rates as prescribed by the Central Government. The Act also provides for benefits to dependents of insured persons in case of death as a result of an employment injury. |
| (u) | **The Personal Injuries (Compensation Insurance) Act, 1963:** This Act provides for
the employer’s liability and responsibility to pay compensation to employees where workmen sustain personal injuries in the course of employment.

(v) Industrial Employment (Standing Order) Act 1946: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.
SALIENT FEATURES OF SOME OF THE MAJOR LAWS THAT ARE APPLICABLE FOR PROTECTION OF ENVIRONMENT.

1. The Environment (Protection) Act, 1986 and as amended: This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. ‘Environment’ includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

2. The Forest Conservation Act, 1980, as amended, and Forest (Conservation) Rules, 1981 as amended: These provides for protection of forests by restricting conversion of forested areas into non-forested areas and prevention of deforestation, and stipulates the procedures for cutting any trees that might be required by the applicable rules. Permissions under the Act also stipulates the norms and compliance requirements of the employer and any contractor on behalf of the employer.

3. State Tree Preservation Acts as may be in force: These provide for protection of trees of important species. Contractors will be required to obtain prior permission for full or partial cutting, uprooting, or pruning of any such trees.

4. The Wildlife (Protection) Act, 1972, and as amended: This provides for protection of wildlife through notifying National Parks and Sanctuaries and buffer areas around these zones; and to protect individuals of nationally important species listed in the Annex of the Act.

5. The Biological Diversity Act, 2002: This provides for conservation of biological diversity, sustainable use of components of biological diversity, and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith or incidental thereto.

6. The Public Liability Insurance Act, 1991 as amended and The Public Liability Insurance Rules, 1991 as amended: These provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

7. The Ancient Monuments and Archaeological Sites and Remains Act, 1958 and the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010, the Ancient Monuments and Archaeological Sites and Remains Rules, 1959 amended 2011, the National Monuments Authority Rules, 2011 and the similar State Acts: These provide for conservation of cultural and historical remains found in India. Accordingly, area within the radii of 100m and 300m from the “protected property” are designated as “protected area” and “controlled area” respectively. No development activity (including building, mining,
excavating, blasting) is permitted in the “protected area” and development activities likely to
damage the protected property is not permitted in the “controlled area” without prior
permission of the Archaeological Survey of India (ASI) or the State Departments of Art and
Culture or Archaeology as applicable.

8. The Environmental Impact Assessment Notification, 2006 and as amended: This provides
for prior environmental clearance for new, modernization and expansion projects listed in
Schedule 1 of the Notification. Contractors will be required to ensure that no work starts
until applicable clearances under the Notification is not available. Contractors will be
responsible for implementation of any environmental management plan stipulated as per the
permission under this Notification; and will be required to prepare and submit to the
employer and compliance report stipulated in the permission under the Notification.

(Prevention and Control of Pollution) Rules, 1975 as amended: These provide for the
prevention and control of water pollution and the maintaining and restoring of
wholesomeness of water. ‘Pollution’ means such contamination of water or such alteration
of the physical, chemical or biological properties of water or such discharge of any sewage
or trade effluent or of any other liquid, gaseous or solid substance into water(whether
directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful
or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or
other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.
Contractors will need to obtain consent for establishment and consent for operation of any
item of work or installation of equipment that generates waste water, and observe the
required standards of establishment and operation of these items of work or installations; as
well as install and operate all required waste water treatment facilities.

and Control of Pollution) Cess Rules, 1978: These provide for the levy and collection of a
cess on water consumed by persons carrying on certain industries and by local authorities,
with a view to augment the resources of the Central Board and the State Boards for the
prevention and control of water pollution under the Water (Prevention and Control of
Pollution) Act, 1974.

11. The Air (Prevention and Control of Pollution) Act, 1981 as amended, and the Air
(Prevention and Control of Pollution) Rules, 1982: These provides for prevention, control
and abatement of air pollution. ‘Air Pollution’ means the presence in the atmosphere of any
‘air pollutant’, which means any solid, liquid or gaseous substance (including noise) present
in the atmosphere in such concentration as may be or tend to be injurious to human beings or
other living creatures or plants or property or environment. Contractors will need to obtain
consent for establishment and consent for operation of any item of work or installation of
equipment that generates air pollution such as batching plants, hot mix plants, power
generators, backup power generation, material handling processes, and observe the required
standards of establishment and operation of these items of work or installations.

12. Noise Pollution (Control and Regulation) Rules, 2000, and as amended: This provides for
standards for noise for day and night for various land uses and specifies special standards in
and around sensitive receptors of noise such as schools and hospitals. Contractors will need
to ensure compliance to the applicable standards, and install and operate all required noise
control devices as may be required for all plants and work processes.

provides for Requirement of preparation of on-site and off-site Disaster Management Plans
for accident-prone areas.

14. The Explosives Act 1884 and the Explosives Rules, 2008: These provide for safe
manufacture, possession, sale, use, transportation and import of explosive materials such as
diesel, Oil and lubricants etc.; and also for regulating the use of any explosives used in
blasting and/or demolition. All applicable provisions will need compliance by the
contractors.

15. The Petroleum Rules, 2002: This provides for safe use and storage of petroleum products,
and will need to be complied by the contractors.

16. The Gas Cylinder Rules 2004 and amendments: This provides for regulations related to
storage of gas, and possession of gas cylinder more than the exempted quantity. Contractors
should comply with all the requirements of this Rule.

17. Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 and as amended:
These provide for use and storage of hazardous material such as highly inflammable liquids
like HSD/LPG. Contractors will need to ensure compliance to the Rules; and in the event
where the storage quantity exceeds the regulated threshold limit, the contractors will be
responsible for regular safety audits and other reporting requirements as prescribed in the
Rules.

18. Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016:
These provide for protection of general public from improper handling storage and disposal
of hazardous waste. The rules prescribe the management requirement of hazardous wastes
from its generation to final disposal. Contractors will need to obtain permission from the
State Pollution Control Boards and other designated authorities for storage and handling of
any hazardous material; and will to ensure full compliance to these rules and any conditions
imposed in the permit.

19. The Bio Medical Waste Management Rules, 2016: This provides for control, storage,
transportation and disposal of bio-medical wastes. As and where the contractor has any first
aid facility and dispensaries, established in either temporary or permanent manner,
compliance to these Rules are mandatory.

20. Construction and Demolition Waste Management Rules, 2016: This provides for
management of construction and demolition waste (such as building materials possible to be
reused, rubble and debris or the like); and applies to all those waste resulting from
construction, re-modelling, repair or demolition of any civil structure. Contractor will need
to prepare a waste disposal plan and obtain required approval from local authorities, if waste
generation is more than 20 tons in any day or 300 tons in any month during the contract period; and ensure full compliance to these rules and any conditions imposed in the regulatory approval.

21. The E-Waste (Management) Rules, 2016: This provides for management of E-wastes (but not covering lead acid batteries and radio-active wastes) aiming to enable the recovery and/or reuse of useful material from e-waste, thereby reducing the hazardous wastes destined for disposal and to ensure the environmentally sound management of all types of waste of electrical and electronic equipment. This Rule applies to every manufacturer, producer, consumer, bulk consumer, collection centers, dealers, e-retailer, refurbisher, dismantler and recycler involved in manufacture, sale, transfer, purchase, collection, storage and processing of e-waste or electrical and electronic equipment listed in Schedule I, including their components, consumables, parts and spares which make the product operational.

22. Plastic waste Management Rules, 2016: This provides for control and management of the plastic waste generated from any activity. Contractors will ensure compliance to this Rule.

23. The Batteries (Management and Handling) Rules 2001: This provides for ensuring safe disposal and recycling of discarded lead acid batteries likely to be used in any equipment during construction and operation stage. Rules require proper control and record keeping on the sale or import of lead acid batteries and recollection of the used batteries by registered recyclers to ensure environmentally sound recycling of used batteries. Contractors will ensure compliance to this Rule.

24. The Ozone Depleting Substances (Regulation and Control) Rules, 2000 and as amended: This provides for regulation of production and consumption of ozone depleting substances in the country, and specifically prohibits export to or import from countries not specified in the Rules, and prohibits unless specifically permitted, any use of ozone depleting substance.

25. The Coastal Regulation Zone Notifications, 1991 and as amended: This provides for regulation of development activities within the 500m of high tide line in coastal zone and 100m of stretches of rivers and estuaries influenced by tides. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.

26. The Motor Vehicle Act 1988 as amended (and State Motor Vehicle Acts as may be in force) and the Motor Vehicle Rules, 1989, and as amended (and State Motor Vehicle Rules as may be in force): To minimize the road accidents, penalizing the guilty, provision of compensation to victim and family and check vehicular air and noise pollution. Contractors will be required to ensure full compliance to these rules.

27. Easement Act, 1882: This provides for the rights of landowners on groundwater. Contractors will need to ensure that other landowners’ rights under the Act is not affected by any groundwater abstraction by the contractors.
28. State Groundwater Acts and Rules as may be in force and the Guidelines for Groundwater Abstraction for drinking and domestic purposes in Notified Areas and Industry/Infrastructure project proposals in Non-Notified areas, 2012: These provide for regulating extraction of ground water for construction/industrial and drinking and domestic purposes. Contractors will need to obtain permission from Central/State Groundwater Boards prior to groundwater abstraction through digging any bore well or through any other means; and will to ensure full compliance to these rules and any conditions imposed in the permit.

29. The Mines Act, 1952 as amended; the Minor Mineral and concession Rules as amended; and the State Mineral (Rights and Taxation) Acts as may be in force: These provide for for safe and sound mining activity. The contractors will procure aggregates and other building materials from quarries and borrow areas approved under such Acts. In the event the contractors open any new quarry and/or borrow areas, appropriate prior permission from the State Departments of Minerals and Geology will need to be obtained. Contractors will also need to ensure full compliance to these rules and any conditions imposed in the permit.

30. The Insecticides Act, 1968 and Insecticides Rules, 1971 and as amended: These provide for regulates the manufacture, sale, transport, distribution, export, import and use of pesticides to prevent risk to human beings or animals, and for matters connected therewith. No one should import or manufacture; sell, stock or exhibit foe sale; distribute, transport, use: (i) any misbranded insecticides, (ii) any insecticide the sale, distribution or use of which is for the time being prohibited under the Act; and (iii) any insecticide except in accordance with the condition on which it was registered under the Act.

31. National Building Codes of India, 2005 and as amended: This provides guidelines for regulating the building construction activities in India. The code mainly contains administrative regulations, development control rules and general building requirements; stipulations regarding materials, structural design and construction; and building and plumbing services. Contractors will be required to comply with all Bureau of Indian Standards Codes dealing with: (i) use and disposal of asbestos containing materials in construction; (ii) paints containing lead; (iii) permanent and temporary ventilations in workplace; (iv) safety, and hygiene at the workplace; (v) prevention of fire; (vi) prevention of accidents from faulty electrical gadgets, equipment and accessories; and all other such codes incidental to the Contract.
Appendix 2

Tables of Adjustment Data
(If applicable under Cl. 49 of GCC)

Table 1: Coefficients governing the adjustment for changes in cost

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Coefficients Name</th>
<th>Symbol</th>
<th>Schedules (Reference Number)</th>
<th>Schedules (Reference Number)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>[Description of each schedule is given below]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S₁</td>
<td>S₂</td>
</tr>
<tr>
<td>1.</td>
<td>Fixed</td>
<td>a</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>2.</td>
<td>Labour [L]</td>
<td>b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Steel [S]</td>
<td>c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Cement [C]</td>
<td>d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Plant &amp; Equipment spares [E]</td>
<td>e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Diesel and Petroleum products [D]</td>
<td>f</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Bitumen [B]</td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Others[O]</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: (a) Fixed element is normally 15%; (b) Employer to fill-up above Table.

BOQ SCHEDULES

[The following Schedules are for example only. The schedules may be modified and specified as appropriate for each work]

Schedule 1: Earth Work In Formation
Schedule 2: Civil Engineering Work (Bridge)
Schedule 3: Civil Engineering Work Building,
Schedule 4: Steel Fabrication Works
Schedule 5: Road Works –WBM
Schedule 6: Road BTM
Schedule 7:
Table 2: Cost Indices and Reference Prices (applicable for specific items) for adjustment in contract prices [as per GCC 49].

WPI with base 2011-2012 = 100 on the Base Date

Base Date = Deadline for submission of bids

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Cost Element</th>
<th>Symbol</th>
<th>Indices or Cost on the Base Date</th>
<th>Index for adjustment</th>
<th>Sources of Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fixed</td>
<td>a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Labour</td>
<td>b</td>
<td>( L_a ) all India average Consumer Price Index (CPI) Number for Industrial Workers for ….. centre(^{44}) (Base 2001 = 100) on the base date.</td>
<td>( L_a )-CPI for the month for which the IPC is related</td>
<td>Labour Bureau, Ministry of Labour and Employment, Government of India.</td>
</tr>
<tr>
<td>3</td>
<td>Steel</td>
<td>c</td>
<td>( S_a ) – Whole-sale Price Index (WPI) for Steel [Steel Long]</td>
<td>( S_a )-WPI for the month which is two months prior to the month to which IPC is related</td>
<td>Economic Advisor, Ministry of Commerce and Industry, Government of India.</td>
</tr>
<tr>
<td>4</td>
<td>Cement</td>
<td>d</td>
<td>( C_o )-WPI for Grey Cement</td>
<td>( C_o )-WPI for the month which the cement is brought to site or one month prior to the month to which IPC is related, whichever is less</td>
<td>Economic Advisor, Ministry of Commerce and Industry, Government of India.</td>
</tr>
<tr>
<td>5</td>
<td>Plant &amp; Equipment spares</td>
<td>e</td>
<td>( E_o )-WPI for “Construction machinery ”</td>
<td>( E_o ) – WPI for the month to which IPC is related</td>
<td>Economic Advisor, Ministry of Commerce and Industry, Government of India.</td>
</tr>
<tr>
<td>6</td>
<td>Diesel(^{45})</td>
<td>f</td>
<td>Do-Unit Cost from the identified depot on the base date</td>
<td>Dn-Unit Cost for on the first day of the month to which the IPC relates</td>
<td>From the ………… Depot</td>
</tr>
<tr>
<td>7</td>
<td>Bitumen (^{46})</td>
<td>g</td>
<td>Bo-Unit Cost from the identified refinery on the base date</td>
<td>Bn- Cost per unit quantity on the first day of the month in which the material is brought to site or two months prior to the date to which IPC is related</td>
<td>From …. Refinery</td>
</tr>
<tr>
<td>8</td>
<td>Others</td>
<td>h</td>
<td>Oo- All India Wholesale Price Index(WPI) for all commodities</td>
<td>On- All India WPI for all commodities for the month to which IPC is related</td>
<td>Economic Advisor, Ministry of Commerce and Industry, Government of India.</td>
</tr>
</tbody>
</table>

IPC – Interim Payment Certificate

\(^{44}\) The Centre to be specified should be the relevant one for which CPI is published by the Labour Bureau.

\(^{45}\) The PCC specifies the identified depot for the rate of diesel for the base date and the applicable date for price adjustment.

\(^{46}\) The PCC specifies the identified refinery for the rate of Bitumen for the base date and the applicable date price adjustment.
Appendix - 3

Appointment of Adjudicator

Suggested Draft of Letter of Appointment of Adjudicators in civil works contracts

Sub: ___________________________________________ (Name of the Contract)

To

Name and address of the Adjudicator

We hereby confirm your appointment as Adjudicator for the above contract to carry out the assignment specified in this Letter of Appointment.

For administrative purpose _____________________ (name of the officer representing the Employer) has been assigned to administer the assignment and to provide the Adjudicator with all relevant information needed to carry out the assignment on behalf of both the employer and the contractor. The services will be required during the period of contract for the work of (Name of the Contract) ___________________.

The Adjudicator shall visit the worksite once in 3 (three) months till the completion of the work indicated above or as specifically requested by Employer/Contractor for the period up to the end of defects liability period with prior intimation to the Employer and the contractor. The duration of each visit shall ordinarily be for one day only. These durations are approximate and (Name of the employer and Name of the Contractor) may find it necessary to postpone or cancel the assignment and/or shorten or extend the duration.

The appointment will become effective upon confirmation of letter by you. The appointment of Adjudicator shall be liable for termination under a 30 (thirty) days written notice from the date of issue of the notice, if both Employer and the Contractor so desire. Also the appointment shall automatically stand terminated 14 days after the defect notice / correction period as stated in Clauses 23 and 24 of the Conditions of Contract is over.

The Adjudicator will be paid a fee of Rs.______ (Rupees ________ only) per each day of visit at the worksite. The actual expenses for boarding and traveling in connection with the assignment will be reimbursed to the Adjudicator. The Adjudicator will submit a pre-receipted bill in triplicate to the employer indicating the date of the visit, fees for the visit and a proof in support of the actual expenditure [only for items valued above Rs. 500 each] incurred by him against boarding, lodging and traveling expenses after performing the visit on each occasion. The Employer will make the admissible payment (both the Employer’s and the Contractor’s share) to the Adjudicator within 30 days of the receipt of the bill. The

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47 If ITB 51 makes provision of an Adjudicator from list provided by an institution, kindly modify Appendix 3 to state that the fee and reimbursable payable to the adjudicator shall be as per the rules of the Institution.
Contractor’s share on this account (half the paid amount) will be recovered by the Employer from the Contractor’s bills against the work.

In accepting this assignment, the Adjudicator should understand and agree that he is responsible for any liabilities and costs arising out of risks associated with travel to and from the place of emergency repatriation, loss or damage to personal/professional effects and property. The Adjudicator is advised to effect personal insurance cover in respect of such risks if he does not already have such cover in place. In this regard, the Adjudicator shall maintain appropriate medical, travel, accident and third-party liability insurance. The obligation under this paragraph will survive till termination of this appointment.

Procedures for resolution of disputes by the Adjudicator is described in the contract of (name of the contract) between the employer and the contractor vide Clause No. 24 of the General Conditions of Contract. Your recommendation should be given in the format attached, within 28 days of receipt of a notification of dispute.

The Adjudicator will carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and will conduct himself in a manner consistent herewith. After visiting the worksite, the Adjudicator will discuss the matter with the Employer and if necessary with the Contractor before arriving at any decision.

The Adjudicator will agree that all knowledge and information not within the public domain, which may be acquired while carrying out this service shall be all time and for all purpose, regarded as strictly confidential and held in confidence, and shall not be directly or indirectly disclosed to any party whatsoever, except with the permission of the employer and the contractor. The Adjudicator’s decision should be communicated in the form of a speaking order specifying the reasons.

The Adjudicator will agree that any manufacturing or construction firm with which he might be associated with, will not be eligible to participate in bidding for any goods or works resulting from or associated with the project of which this consulting assignment forms a part.

Read and Agreed

Name of Adjudicator

Signature

Place:

Date:

Name of Employer
Signature of authorized representative of Employer

Name of the Contractor
Signature of authorized representative of Contractor
Attachment: Copy of contract document between the employer and contractor and format for recommendation.
SUMMARY OF ADJUDICATOR’S RESPONSIBILITIES

The Adjudicator has the following principal responsibilities:

1. Visit the site periodically.

2. Keep abreast of job activities and developments.

3. Encourage the resolution of disputes by the parties.

4. When a dispute is referred to it, conduct a hearing (no legal presentation), complete its deliberations, and prepare a recommendation in a professional and timely manner (as per sample format)
Sample Format of Adjudicator’s Recommendation

[Project Name]
Recommendation of Adjudicator

Dispute No. XX [NAME OF DISPUTE]                                     Hearing Date:__________

Dispute
Description of dispute. A one or two sentence summation of the dispute.

Contractor’s Position
A short summation of the contractor’s position as understood by the Adjudicator.

Employer’s Position
A short summation of the Employer’s position as understood by the Adjudicator.

Recommendation
The Adjudicator’s specific recommendation for settlement of the dispute. (The recommended course is consistent with the explanation).

Explanation
(This section could also be called Considerations, Rationale, Findings, Discussion, and so on.)

The Adjudicator’s description of how each recommendation was reached.

Respectfully submitted,

Date : ______________________  ______________________
Date : ______________________  ______________________
Date : ______________________  ______________________
Section X - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security, ES performance security if applicable, and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.
NOTIFICATION OF AWARD

Letter of Acceptance

[on letterhead paper of the Employer]

[The Letter of Acceptance shall be the basis for formation of the Contract as described in ITB Clause 47. This Standard Form of Letter of Acceptance shall be filled in and sent to the successful Bidder only after evaluation of bids has been completed, subject to any review by the World Bank required under the Loan Agreement.]

. . . . . [date] . . . .

To: . . . . . . . [name and address of the Contractor] . . . . .

Subject: . . . . . . . . . [Notification of Award Contract No] . . . . . .

This is to notify you that your Bid dated . . . . [insert date] . . . for execution of the . . . . . . . . . . . . [insert name of the contract and identification number, as given in the PCC] . . . . . . . . . . . . for the Accepted Contract Amount of . . . . . . . . . . . . . . . . . . [insert amount in numbers and words], as corrected and modified\(^{48}\) in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security, plus additional security for unbalanced bids in terms of ITB Clause 41, and ES Performance Security\(^{49}\) in the form detailed in ITB Clause 50 for amounts of Rs. ………, and Rs. …….. specified therein, within 21 days of the receipt of this letter of acceptance, and visit this office to sign the contract, failing which action as stated in ITB Clause 50.2 will be taken in accordance with the Conditions of Contract. The securities shall be valid upto 28 days from the date of completion i.e. upto …………… and shall be as per the Performance Security Form and the ES Performance Security Form\(^{49}\); included in Section X -Contract Forms, of the bidding document.

[Choose one of the following statements:]

We accept that __________________________ [insert the name of Adjudicator proposed by the Bidder] be appointed as the Adjudicator\(^{50}\).

\(^{48}\) Delete “corrected and” or “and modified” if not applicable. See Notes on Standard Form of Agreement, next page.

\(^{49}\) Insert amounts for (i) Performance Security, plus additional security for unbalanced bids in terms of ITB Clause 41; and (ii) ES Performance Security respectively.

\(^{50}\) To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the Instructions to Bidders, and has accordingly offered another candidate.
[or]

We do not accept that ______________________ [insert the name of the Adjudicator proposed by the Bidder] be appointed as the Adjudicator, and by sending a copy of this Letter of Acceptance to ______________________ [insert name of the Appointing Authority], the Appointing Authority, we are hereby requesting such Authority to appoint the Adjudicator in accordance with ITB 51.1 and GCC 23.1.  

We note that as per your bid, you do not intend to subcontract any component of work.  

[OR]

We note that as per your bid, you propose to employ M/s. ………………… as sub-contractor for executing ………………..

We have reviewed the construction methodology submitted by you alongwith the bid in response to ITB Clause 16 and our comments are given in the attachment. You are requested to submit a revised Program including ES requirements as per Clause 26 of General Conditions of Contract within 14 days of receipt of this letter of acceptance.

Authorized Signature:  ...................................................................................................................

Name and Title of Signatory:  ........................................................................................................

Name of Agency:  ..........................................................................................................................

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51 To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the ITB, has accordingly offered another candidate, and the Employer does not accept the counterproposal.
Issue of Notice to proceed with the work

(letterhead of the Employer)

_______ (date)

To

______________________________ (name and address of the Contractor)

______________________________

Dear Sirs:

Pursuant to your furnishing the requisite securities as stipulated in ITB clause 50.1, insurance policy as per GCC 13, construction methodology as stated in letter of acceptance and signing of the contract agreement for the construction of ______________@ a Bid Price of Rs. ____________, you are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of signatory authorized to sign on behalf of Employer)

Attachment: Contract Agreement
Contract Agreement

THIS AGREEMENT made the . . . . day of . . . . . . . . . . . . . . . . . . , between . . . . [name of the Employer]. . . . . (hereinafter “the Employer”), of the one part, and . . . . [name of the Contractor]. . . . . (hereinafter “the Contractor”), of the other part:

WHEREAS the Employer desires that the Works known as . . . . [name of the Contract]. . . . should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
   (i) This Agreement
   (ii) the Letter of Acceptance
   (iii) the Contractor’s Bid including completed schedules and priced bill of quantities,
   (iv) the addenda Nos ______(if any)
   (v) the Particular Conditions
   (vi) the General Conditions of Contract, including appendix;
   (vii) the Specification
   (viii) the Drawings
   (x) Joint Venture Agreement [for JVs only]; and
   (xi) any other document listed in the PCC as forming part of the Contract.

3. In consideration of the payments to be made by the Employer to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of India on the day, month and year specified above.

Signed by: ________________________________ Signed by: ________________________________
for and on behalf of the Employer for and on behalf the Contractor

in the presence of: ________________________________ in the presence of: ________________________________
Witness, Name, Signature, Address, Date Witness, Name, Signature, Address, Date
Performance Security- Bank Guarantee
[including Additional Performance Security for unbalanced bids]
[Guarantor letterhead or SWIFT identifier code]

Performance Guarantee No.…………………….[insert guarantee reference number]
Date………………………….[insert date of issue of the guarantee]

To: ______________________________________________[name of Employer]
________________________________________[address of Employer]

WHEREAS _________________________[name and address of Contractor\(^{52}\)]
(hereinafter called "the Applicant") has undertaken, in pursuance of Contract No. _____
dated ________________ to execute __________________________ [name of Contract and
brief description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Applicant
shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein
as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Applicant such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to
you, on behalf of the Applicant, up to a total of ____________________ [amount of
guarantee\(^{53}\)] ____________________ [in words], such sum being payable in the
types and proportions of currencies in which the Contract Price is payable, and we undertake
to pay you, upon your first written demand and without cavil or argument, any sum or sums
within the limits of ____________________ [amount of guarantee] as aforesaid without
your needing to prove or to show grounds or reasons for your demand for the sum specified
therein.

\(^{52}\)In the case of a JV, insert the name of the Joint Venture

\(^{53}\)An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in
the Contract less provisional sums, if any, plus additional performance security for unbalanced bids if any,
and denominated in Indian Rupees.
We hereby waive the necessity of your demanding the said debt from the Applicant before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Applicant shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until ........ 54, and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor

Name of Bank

Address

Date

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

54 Insert the date twenty-eight days after the expected completion date as described in GC Clause 53.1. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: “The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer’s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.”
Environmental and Social Performance Security
ES – Bank Guarantee

[Guarantor letterhead or SWIFT identifier code]

ES Performance Guarantee No.: [Insert guarantee reference number]

Date………………………….[insert date of issue of the guarantee]

To: __________________________________________________________________________ [name of Employer]
____________________________________________________________________________ [address of Employer]

WHEREAS ___________________________________________________________________ [name and address of Contractor] (hereinafter called "the Applicant") has undertaken, in pursuance of Contract No. _____ dated ________________ to execute ____________________________________________ [name of Contract and brief description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Applicant shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his Environmental and Social (ES) obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Applicant such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Applicant, up to a total of ______________________ [amount of guarantee] ________________ [in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of ______________________ [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

55In the case of a JV, insert the name of the Joint Venture
56An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract less provisional sums, if any, and denominated in Indian Rupees.
We hereby waive the necessity of your demanding the said debt from the Applicant before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Applicant shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until .......... 57, and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor _____________________________
Name of Bank ____________________________________________
Address ____________________________________________
Date ____________________________________________

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

57 Insert the date twenty-eight days after the expected completion date as described in GC Clause 53.1. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: “The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months]/[one year], in response to the Employer’s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.”
Advance Payment Guarantee
Demand Guarantee
[Guarantor letterhead or SWIFT identifier code]

Advance Payment Guarantee No.…………………….[insert guarantee reference number]
Date………………………….[insert date of issue of the guarantee]

To: __________________________________________ [name of Employer]
__________________________________________ [address of Employer]
___________________________________________ [name of Contract]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Subclause 49.1
("Advance Payment") of the above-mentioned Contract, ______________ [name and address of Contractor] (hereinafter called "the Applicant") shall deposit with ______________ [name of Employer] a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of _____________ [amount of guarantee].

We, the ______________ [bank or financial institution], as instructed by the Applicant, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to ______________ [name of Employer] on his first demand without whatsoever right of objection on our part and without his first claim to the Applicant, in the amount not exceeding _____________ [amount of guarantee].

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed thereunder or of any of the Contract documents which may be made between ______________ [name of Employer] and the

58In the case of a JV, insert the name of the Joint Venture
59An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Indian Rupees.
Applicant, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until _________________________ [name of Employer] receives full repayment of the same amount from the Applicant. Consequently any demand for payment under this guarantee must be received by us at this office on or before that date.

Yours truly,

Signature and seal: _______________________________
Name of Bank: ___________________
Address: _______________________________________
Date: __________________________

*Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*
Retention Money Security
Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

__________________________________ [Bank’s name and address of issuing branch or office]

Beneficiary: ______________________ [Name and Address of Employer]

Date: ____________________________

RETENTION MONEY GUARANTEE NO.: ______________

We have been informed that ______________ [name of contractor] (hereinafter called “the Applicant”) has entered into Contract No. ______________ [reference number of the contract] dated ______________ with you, for the execution of ______________ [name of contract and brief description of Works] (hereinafter called “the Contract”).

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of __________ [insert the second half of the Retention Money] is to be made against a Retention Money guarantee.

At the request of the Applicant, we ______________ [name of Bank] hereby irrevocably undertake to pay you the sum or sums not exceeding in total an amount of __________________ [amount in Rupees] (___________________) [amount in words] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Applicant is in breach of its obligation under the Contract without cavil or argument.

60 In the case of a JV, insert the name of the Joint Venture
61 The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security.
It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Applicant on its account number _________ at ___________ [name and address of Bank].

This guarantee shall expire, at the latest, 21 days after the date when the Employer has received a copy of the Defects Liability Certificate issued by the Project Manager. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

[Signature(s) and seal of the guarantor]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.