BIDDING DOCUMENT
for
THE PROCUREMENT OF
Construction of RCC Retaining wall and Boulder Riprap

National Competitive Bidding (NCB)
Single-Stage: Two-Envelope Bidding Procedure

IFB No: DoWRI/MRTP/CPBJ/Works/NCB - 05
Contract ID: DoWRI/MRTP/CPBJ/Works/NCB - 05

Mahakali River Training Project, Darchula

July, 2020
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Invitation for Bids
Government of Nepal (GoN)
Mahakali River Training Project, Darchula

Invitation for Bids for the Construction of RCC Retaining Wall and Boulder Riprap
IFB No: DoWRI/MRTP/CPBJ/Works/NCB - 05
Contract Identification No: DoWRI/MRTP/CPBJ/Works/NCB - 05

Date of publication: 06-07-2020

1. The Government of Nepal [GoN] has allocated funds towards the cost of Construction of RCC Retaining Wall and Boulder Riprap and intends to apply part of the funds to cover eligible payments under the Contract for Construction of RCC Retaining Wall and Boulder Riprap (Contract No: DoWRI/MRTP/CPBJ/Works/NCB - 05). Bidding is open to all eligible bidders as per Section V of Bidding Document.

2. Mahakali River Training Project, Darchula invites electronic bids from eligible bidders for the construction of RCC Retaining Wall and Boulder Riprap under National Competitive Bidding – Single Stage Two Envelope Bidding procedures.

   Only eligible bidders with the following key qualifications should participate in this bidding:

   Minimum Average Annual Construction Turnover of the best 3 years within the last 10 years: 62.983 Millions
   Minimum Work experience of similar size and nature: 50.386 Millions

3. Under the Single Stage, Two Envelope Procedure, Bidders are required to submit simultaneously two separate sealed envelopes, one containing (i) the Technical Bid and the other (ii) the Price Bid, both in turn enclosed in one sealed envelope as per the provision of ITB 21 of the Bidding Document.

4. Eligible Bidders may obtain further information and inspect the Bidding Documents at the office of Mahakali River Training Project, Darchula, Darchula, Api, Darchula, Nepal or may visit PPMO e-GP system www.bolpatra.gov.np/egp.

5. If hard-copy is allowed then a complete set of Bidding Documents may be purchased from the office Mahakali River Training Project, Darchula, Darchula, Api, Darchula, Nepal by eligible Bidders on the submission of a written application, along with the copy of company/firm registration certificate, and upon payment of a non-refundable fee of 5000.0 NRs. till 05-08-2020 during office hours.

   Or

   Bidder who chooses to submit their bid electronically may purchase the hard copy of the bidding documents as mentioned above or may download the bidding documents for e-submission from PPMO’s e-GP system www.bolpatra.gov.np/egp. Bidders, submitting their bid electronically, should deposit the cost of bidding document in the Project’s Rajaswa (revenue) account as specified below

   Information to deposit the cost of bidding document in Bank:

   Name of the Bank: Rastriya Banijya Bank Ltd.
   Name of the Office: Mahakali River Training Project, Darchula
   Office Code no: 308037301
   Office Account no: 1-1-001
   Rajaswa (revenue) Shirshak no: 14229
6. **Pre-bid meeting** shall be held at Room No. 322 of Department of Water Resources and Irrigation, Jawalakhel, Lalitpur at 26-07-2020 13:00 hours.

7. Sealed or electronic bids must be submitted to the office Mahakali River Training Project, Darchula, Darchula, Api, Darchula, Nepal by hand/courier or through PPMO’s e-GP system www.bolpatra.gov.np/egp on or before 06-08-2020 12:00. Bids received after this deadline will be rejected.

8. The bids will be opened in the presence of Bidders' representatives who choose to attend at 06-08-2020 13:00 hours at the office of Room No. 322 of Department of Water Resources and Irrigation, Jawalakhel, Lalitpur. Bids must be valid for a period of 90 days after bid opening and must be accompanied by a bid security or scanned copy of the bid security in pdf format in case of e-bid, amounting to a minimum of NRs. 15,74,600 which shall be valid for 30 days beyond the validity period of the bid.

9. If the last date of purchasing and /or submission falls on a government holiday, then the next working day shall be considered as the last date. In such case the validity period of the bid security shall remain the same as specified for the original last date of bid submission.

10. **Evaluation and Qualification Criteria:**

    **Nationality:**
    Nationality in accordance with ITB sub-clause 4.2 Single Entity must meet requirement.
    In case of joint ventures
    All Partners Combined must meet requirement.
    Each Partner must meet requirement.
    One Partner not applicable.
    Documents Submission Requirements: Letter of Technical Bid Forms ELI –1; ELI –2 with attachments.

    **Conflict of Interest:**
    No conflicts of interest in accordance with ITB Sub-Clause 4.3. Single Entity must meet requirement.
    In case of joint ventures
    All Partners Combined existing or intended JV must meet requirement. Each Partner must meet requirement.
    One Partner not applicable.
    Documents Submission Requirements: Letter of Technical Bid.

    **Government/DP Eligibility:**
    Not having been declared ineligible by government/DP, as described in ITB Sub-Clause 4.4. Single Entity must meet requirement.
    In case of joint ventures
    All Partners Combined must meet requirement.
    Each Partner must meet requirement.
    One Partner not applicable.
    Documents Submission Requirements: Letter of Technical Bid.

    **UN Eligibility:**
    Not having been declared ineligible based on a United Nations resolution or Employer's country law, as described in ITB Sub-Clause 4.8.
    Single Entity must meet requirement.
    In case of joint ventures
    All Partners Combined existing or intended JV must meet requirement. Each Partner must meet requirement.
    One Partner not applicable.
    Documents Submission Requirements: Letter of Technical Bid.

    **Government-owned Entity:**
    Bidder required to meet conditions of ITB Sub-Clause 4.5. Single Entity must meet requirement.
    In case of joint ventures
    All Partners Combined existing or intended JV must meet requirement. Each Partner must meet requirement.
One Partner not applicable. 
Documents Submission Requirements: Forms ELI - 1, ELI - 2, with attachments.

Other Eligibility : Firm Registration Certificate: 
Firm Registration Certificate  
Single Entity must meet requirement.  
In case of joint ventures  
   All Partners Combined not applicable.  
   Each Partner must meet requirement.  
   One Partner not applicable.  
Documents Submission Requirements: Document attachment.

Other Eligibility : Business Registration Certificate: 
Business Registration Certificate  
Single Entity must meet requirement.  
In case of joint ventures  
   All Partners Combined not applicable.  
   Each Partner must meet requirement.  
   One Partner not applicable.  
Documents Submission Requirements: Document attachment.

Other Eligibility : Tax Clearance Certificate/Tax return submission evidence/evidence of time extension for the F/Y F/Y 2075/76: 
Tax Clearance Certificate/Tax return submission evidence/evidence of time extension for the F/Y2075/76  
Single Entity must meet requirement.  
In case of joint ventures  
   All Partners Combined not applicable.  
   Each Partner must meet requirement.  
   One Partner not applicable.  
Documents Submission Requirements: Document attachment.

Other Eligibility : VAT and PAN Registration certificate (only for domestic bidders): 
VAT and PAN Registration certificate (only for domestic bidders)  
Single Entity must meet requirement.  
In case of joint ventures  
   All Partners Combined not applicable.  
   Each Partner must meet requirement.  
   One Partner not applicable.  
Documents Submission Requirements: Document attachment.

Other Eligibility : Additional requirements: 
Additional requirements  
Single Entity must meet requirement.  
In case of joint ventures  
   All Partners Combined not applicable.  
   Each Partner must meet requirement.  
   One Partner not applicable.  
Documents Submission Requirements: Document attachment.

Corruption Charges: case is being filed to Court against the Natural Person or Board of Director of the firm/institution/company or any partner of JV: 
such Natural Person or Board of Director of the firm/institution/company or any partner of JV such bidder’s bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.  
Documents Submission Requirements: Self declaration in Letter of technical bid or may submit separately.  
Shall also be checked from the information from the investigating authority for corruption charges for case is/isn't filed.

Adequacy of Technical Proposal: 
Evaluation of the Bidder's Technical Proposal will include 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, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section VI (Works Requirements).
Pending Litigation:

All pending litigation shall be treated as resolved against the Bidder and so shall in total not represent more than 50 percent of the Bidder's net worth.
For Single Entity: must meet requirement by itself or as partner to past or existing JV
For joint Venture: Each partner must meet requirement by itself or as partner to past or existing JV. All partner combined and one partner -> not applicable.
Documents Submission Requirements: Form LIT - 1

General Construction Experience:

Experience under construction contracts in the role of contractor, subcontractor, or management contractor for at least the last five (5) years prior to the applications submission deadline. For Single Entity: Must meet requirement
For joint Venture: Each Partner Must meet requirement. All partner combined and one partner not applicable.
Documents Submission Requirements: Form EXP - 1

Contracts of Similar Size and Nature:

50.386 Millions

Construction Experience in Key Activities:

For the above or other contracts executed during the period stipulated in 2.4.2(a) above, a minimum construction experience in the following key activities:
1. Earthwork: - 437.81 m3/month
2. Concrete works : - 111.40 m3/month
3. Reinforcement work: - 6.32 Mt./Month
4. Form work :- 311.82 m2/month
For Single Entity : Must meet all requirement
For joint Venture : All partners combined must meet all requirements. Each Partner not applicable. One partner not applicable.
Documents Submission Requirements : Form EXP - 2(b)
List the production rate(s) for the key activity (ies) in the subject contract. The rates should be about 80% of the estimated production rates of the key activity(ies) in the subject contract as needed to meet the expected construction schedule with due allowance for adverse climatic conditions.

Historical Financial Performance:

Submission of audited balance sheets and income statements, for the last Three (3) years to demonstrate the current soundness of the Bidder's financial position. As a minimum, a Bidder's net worth calculated as the difference between total assets and total liabilities should be positive.
For Single Entity : Must meet requirement
For joint Venture : Each partner Must meet requirement. All partner combined and one partner -> not applicable.
Documents Submission Requirements : Form FIN - 1 with attachments

Average Annual Construction Turnover:

62.983 Millions

Financial Resources:

Using Forms FIN - 3 in Section IV (Bidding Forms) the Bidder must demonstrate access to, or availability of, financial resources in the form of "Lines of Credit",
The following cash - flow requirement, NRs. 8.750 Millions
For Single Entity : Must meet requirement
For joint Venture : All partners combined Must meet requirements, Each partner Must meet 25% of the requirement, One partner must meet 40% of the requirements. Documents Submission Requirements : Form FIN - 3
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<td><strong>1. Scope of Bid</strong></td>
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<td>1.1 In connection with the Invitation for Bids indicated in the Bid Data Sheet (BDS), the Employer, as indicated in the BDS, issues this Bidding Document for the procurement of Works as specified in Section VI (Works Requirements). The <em>name, identification, and number</em> of Contracts of the National Competitive Bidding (NCB) are <em>provided in the BDS.</em></td>
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<td>1.2 Throughout this Bidding Document:</td>
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<tr>
<td>(a) the term “in writing” means communicated in written form and delivered against receipt;</td>
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<td>(b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and</td>
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<td>(c) “day” means calendar day.</td>
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<tr>
<td><strong>2. Source of Funds</strong></td>
</tr>
<tr>
<td>2.1 GoN Funded: In accordance with its annual program and budget, approved by the GoN, the implementing agency <em>indicated in the BDS</em> plans to apply a portion of the allocated budget to eligible payments under the contract(s) for which this Bidding Document is issued.</td>
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<td>Or</td>
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<tr>
<td>Public Entities' own Resource Funded: In accordance with its annual program and budget, approved by the public entity, the implementing agency <em>indicated in the BDS</em> plans to apply a portion of the allocated budget to eligible payments under the contract(s) for which this Bidding Document is issued.</td>
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<td>Or</td>
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<td>DP Funded: The GoN has applied for or received financing (hereinafter called “funds”) from the Development Partner (hereinafter called “the DP”) <em>indicated in the BDS</em> toward the cost of the project named in the BDS. The GoN intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.</td>
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<td>2.2 DP Funded: Payment by the DP will be made only at the request of the GoN and upon approval by the DP in accordance with the terms and conditions of the financing agreement between the GoN and the DP (hereinafter called the “Loan/Grant Agreement”), and will be subject in all respects to the terms and conditions of that Loan/Grant Agreement. No party other than the GoN shall derive any rights from the Loan Agreement or have any claim to the funds.</td>
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<td><strong>3. Fraud and Corruption</strong></td>
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<td>3.1 Procuring Entities as well as Bidders, suppliers and contractors and their sub-contractors shall adhere to the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this:</td>
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<td>(a) the Employer adopts, for the purposes of this provision, the terms as defined below:</td>
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(i) “corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;

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

(iii) “coercive practice” means 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;

(iv) “collusive practice” means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.

(v) “obstructive practice” means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an investigation; (b) making false statements to investigators in order to materially impede an investigation; (c) failing to comply with requests to provide information, documents, or records in connection with an investigation; (d) 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 (e) materially impeding GoN/DP’s contractual rights of audit or access to information; and

(vi) “integrity violation” is any act which violates Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of GoN/DP sanctions, retaliation against whistleblowers or witnesses, and other violations of Anticorruption Policy, including failure to adhere to the highest ethical standard.

(b) the Employer will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the contract;

(c) DP will cancel the portion of the financing allocated to a contract if it determines at any time that representative(s) of the GoN or of a beneficiary of DP-financing engaged in corrupt, fraudulent, collusive, or coercive practices or other integrity violations during the procurement or the execution of that contract, without the GoN having taken timely and appropriate action satisfactory to DP to remedy the situation.

(d) DP will impose remedial actions on a firm or an individual, at any time, in accordance with DP’s Anticorruption Policy and related Guidelines (as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate in DP-financed, -administered, or -supported activities or to benefit from an DP-financed, -administered, or -supported contract, financially or
otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations; and

(e) The Contractor shall permit the GoN/DP to inspect the Contractor’s accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the GoN/DP, if so required by the GoN/DP.

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<th>3.2 The Bidder shall not carry out or cause to carry out the following acts with an intention to influence the implementation of the procurement process or the procurement agreement:</th>
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<td>(a) give or propose improper inducement directly or indirectly,</td>
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<td>(b) distortion or misrepresentation of facts,</td>
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<td>(c) engaging in corrupt or fraudulent practice or involving in such act,</td>
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<td>(d) interference in participation of other competing bidders,</td>
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<tr>
<td>(e) coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings,</td>
</tr>
<tr>
<td>(f) collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial/uncompetitive bid price with an intention to deprive the Employer the benefit of open competitive bid price,</td>
</tr>
<tr>
<td>(g) Contacting the Employer with an intention to influence the Employer with regards to the bids or interference of any kind in examination and evaluation of the bids during the period from the time of opening of the bids until the notification of award of contract.</td>
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<tr>
<th>3.3 PPMO, on the recommendation of the Procuring Entity may blacklist a Bidder for a period of one (1) to three (3) years for its conduct including on the following grounds and seriousness of the act committed by the bidder:</th>
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<tr>
<td>(a) if convicted by a court of law in a criminal offence which disqualifies the Bidder from participating in the contract,</td>
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<td>(b) if it is established that the contract agreement signed by the Bidder was based on false or misrepresentation of Bidder’s qualification information,</td>
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<tr>
<td>(c) if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for, or in executing, a GoN/DP-financed contract.</td>
</tr>
<tr>
<td>(d) if the Successful Bidder fails to sign the Contract.</td>
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3.4 A bidder declared blacklisted and ineligible by the GoN, Public Procurement Monitoring Office (PPMO) and/or the DP in case of DP funded project, may be ineligible to bid for a contract during the period of time determined by the GoN, PPMO and/or the DP.

3.5 In case of a natural person or firm/institution/company which is already declared blacklisted and ineligible by the GoN, any other new or existing firm/institution/company owned partially or fully by such Natural person or Owner or Board of director of blacklisted firm/institution/company; shall not be eligible bidder.

3.6 Furthermore, Bidders shall be aware of the provisions of GCC (GCC 28.3 and 72.3(j)).

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<th>4. Eligible Bidders</th>
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| 4.1 A Bidder may be a natural person, private entity, or government owned entity subject to ITB 4.5 or any combination of them in the form of a Joint Venture (JV) under an existing agreement, or with the intent to constitute a legally-enforceable joint venture. In the case of a JV:
  (a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. Maximum number of JV shall be as **specified in the BDS.** and
  (b) the JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during Contract execution. |

4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section V (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed sub-contractors or suppliers for any part of the Contract including related services.

4.3 A Bidder shall not have a conflict of interest. A Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process, if any of, including but not limited to, the following apply:
  (a) they have controlling shareholders in common; or
  (b) they receive or have received any direct or indirect subsidy from any of them; or
  (c) they have the same legal representative for purposes of this bid; or
  (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to material information about or improperly influence the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
  (e) a Bidder participates in more than one bid in this bidding process either individually or as a partner in a joint venture. This will result in the disqualification of all Bids in which it is involved. However, subject to
any finding of a conflict of interest in terms of ITB 4.3 (a)-(d) above, this does not limit the participation of the same subcontractor in more than one bid; or

(f) a Bidder or any of its affiliated entity, participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or

(g) a Bidder was affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Employer as Engineer for the Contract.

<table>
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<tr>
<th>4.4 A firm that is under a declaration of ineligibility by the GoN in accordance with ITB 3, at the date of the deadline for bid submission or thereafter, shall be disqualified. A firm shall not be eligible to participate in any procurement activities under an DP-financed, -administered, or -supported project while under temporary suspension or debarment by DP pursuant to the DP's Anticorruption Policy (see ITB 3), whether such debarment was directly imposed by the DP, or enforced by other DPs pursuant to the Agreement for Mutual Enforcement of Debarment Decisions. A bid from a temporary suspended or debarred firm will be rejected.</th>
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<td>4.5 Enterprises owned by Government shall be eligible only if they can establish that they are legally and financially autonomous and operate under commercial law, and that they are not a dependent agency of the GoN.</td>
</tr>
<tr>
<td>4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.</td>
</tr>
<tr>
<td>4.7 Firms shall be excluded in any of the cases, if</td>
</tr>
<tr>
<td>(a) 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, Nepal prohibits any import of goods or Contracting of works or services from that country or any payments to persons or entities in that country. Where Nepal prohibits payments to a particular firm or for particular goods by such an act of compliance, that firm may be excluded;</td>
</tr>
<tr>
<td>(b) DP Funded: as a matter of law or official regulation, Nepal prohibits commercial relations with that country, provided that the DP is satisfied that such exclusion does not preclude effective competition for the supply of goods or related services required;</td>
</tr>
<tr>
<td>(c) DP Funded: a firm sanctioned or temporarily suspended by the DP in relation to their guidelines or appropriate provisions on preventing and combating fraud and corruption in projects financed by them.</td>
</tr>
<tr>
<td>(d) If the corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution/company or any partner of JV, such Natural Person or Board of Director of the firm/institution/company or any partner of JV shall not be eligible to participate in procurement process till the concerned Court has not issued the</td>
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</tbody>
</table>
decision of clearance against the Corruption Charges.

4.8 In case a prequalification process has been conducted prior to the bidding process, this bidding is open only to prequalified Bidders.

5. Eligible Materials, Equipment and Services

5.1 The materials, equipment and services to be supplied under the Contract shall have their origin in any source countries as defined in accordance with Section V (Eligible Countries) and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Employer’s request, Bidders may be required to provide evidence of the origin of materials, equipment and services.

5.2 For purposes of ITB 5.1 above, “origin” means the place where the materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its basic characteristics or in purpose or utility from its components.

### B. Contents of Bidding Documents

6. Sections of Bidding Document

6.1 The Bidding Document consist of Parts I, II, and III, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART I Bidding Procedures
- Section I Instructions to Bidders (ITB)
- Section II Bid Data Sheet (BDS)
- Section III Evaluation and Qualification Criteria (EQC)
- Section IV Bidding Forms (BDF)
- Section V Eligible Countries

PART II Requirements
- Section VI Works Requirements (WRQ)
- Section VII Bill of Quantities (BOQ)

PART III Conditions of Contract and Contract Forms
- Section VIII General Conditions of Contract (GCC)
- Section IX Special Conditions of Contract (SCC)
- Section X Contract Forms (COF)

6.2 The Invitation for Bids issued by the Employer is not part of the Bidding Document.

6.3 The Employer is not responsible for the completeness of the Bidding Document and their Addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids.

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 Documents. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.

7. Clarification of

7.1 A prospective Bidder requiring any clarification of the Bidding Document
<table>
<thead>
<tr>
<th><strong>Bidding Document, Site Visit, Pre-Bid Meeting</strong></th>
<th>shall contact the Employer in writing at the Employer’s address <strong>indicated in BDS</strong> or raise any question or curiosity during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received within the period as mentioned in ITB 7.5. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.</th>
</tr>
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<tr>
<td><strong>7.2</strong> The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself, on its own risk and 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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<td><strong>7.3</strong> 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>
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<tr>
<td><strong>7.4</strong> The Bidder’s designated representative is invited to attend a pre-bid meeting, if <strong>provided for in the BDS</strong>. 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>
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<tr>
<td><strong>7.5</strong> The Bidder is requested, to submit any questions in writing, to reach the Employer as <strong>mentioned in BDS</strong>.</td>
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<tr>
<td><strong>7.6</strong> Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document 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.</td>
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<td><strong>7.7</strong> Non attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.</td>
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<tr>
<td><strong>8. Amendment of Bidding Document</strong></td>
<td><strong>8.1</strong> At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing agenda.</td>
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<tr>
<td><strong>8.2</strong> Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document</td>
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</table>
from the Employer in accordance with ITB 6.3.

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

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<tr>
<th>C. Preparation of Bids</th>
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<tr>
<td>9. Cost of Bidding</td>
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<tr>
<td>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.</td>
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<tr>
<td>10. Language of Bid</td>
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<tr>
<td>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 the language specified in the BDS. 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 the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.</td>
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<tr>
<td>11. Documents Comprising the Bid</td>
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<tr>
<td>11.1 The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Bid containing the documents listed in ITB 11.2 and the other the Price Bid containing the documents listed in ITB 11.3, both envelopes enclosed together in an outer single envelope.</td>
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<td>11.2 The Technical Bid shall comprise the following:</td>
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<td>(a) Letter of Technical Bid;</td>
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<tr>
<td>(b) Bid Security in accordance with ITB 19;</td>
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<tr>
<td>(c) alternative Technical Bid, at Bidder’s option and if permissible, in accordance with ITB 13;</td>
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<tr>
<td>(d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;</td>
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<td>(e) documentary evidence in accordance with ITB 17, establishing the Bidder’s qualifications to perform the contract;</td>
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<td>(f) Technical Proposal in accordance with ITB 16;</td>
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<tr>
<td>(g) Bids submitted by a Joint Venture shall include a copy of the Joint Venture Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all partners and submitted with the Bid, together with a copy of the proposed agreement. The Joint Venture agreement, or letter of intent to enter into a Joint Venture including a draft agreement shall indicate at least the parts of the Works to be executed by the respective partners; and</td>
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<td>(h) any other required documents, which is not against the provision Document issued by PPMO as specified in the BDS.</td>
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| 15.1 | The currency of the bid and payment shall be in Nepalese Rupees. |

| 16.1 | The Bidder shall furnish a Technical Proposal 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 requirements and the completion time. |

| 17.1 | 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 in Section IV (Bidding Forms). |

| 18.1 | Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Employer. A bid valid for a shorter period shall be rejected by the Employer as nonresponsive. |

| 18.2 | In exceptional circumstances, prior to the expiration of the bid 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 30 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 and to include any additional conditions against the provisions specified in Bid Documents.

19. Bid Security

19.1 The Bidder shall furnish as part of its bid, in original form, a bid security as specified in the BDS. In case of e-submission of bid, the Bidder shall upload scanned copy of Bid security letter at the time of electronic submission of the bid. The Bidder accepts that the scanned copy of the Bid security shall, for all purposes, be equal to the original. The details of original Bid Security and the scanned copy submitted with e-bid should be the same otherwise the bid shall be non-responsive.

19.2 The bid security shall be, at the Bidder’s option, in any of the following forms:

(a) an unconditional bank guarantee from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law or;

(b) a cash deposit voucher in the Employer’s Account as specified in BDS.

In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section IV (Bidding Forms) or in another Form acceptable to the employer. The form must include the complete name of the Bidder. The bid security shall be valid for minimum thirty (30) days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

19.3 The bid security issued by any foreign Bank outside Nepal must be counter guaranteed by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.

19.4 Any bid not accompanied by an enforceable and substantially compliant bid security shall be rejected by the Employer as nonresponsive. In case of e-Submission, if the scanned copy of an acceptable Bid Security letter is not uploaded with the electronic Bid then Bid shall be rejected.

19.5 The bid security of unsuccessful Bidders shall be returned within three days, once the successful Bidder’s furnishing of the required performance security and signing of the Contract Agreement pursuant to ITB 40.1 and 41.1

19.6 The bid security shall be forfeited if: GoN funded:

(a) a Bidder requests for withdrawal or modification of its bid, except as provided in ITB 18.2:

   (i) during the period of bid validity specified by the Bidder on the Letter of Technical Bid and Price Bid, in case of electronic submission;
   (ii) from the period twenty-four hours prior to bid submission deadline up
to the period of bid validity specified by the Bidder on the Letter of Technical Bid and Price Bid, in case of hard copy submission.

(b) a Bidder changes the prices or substance of the bid while providing information pursuant to clause 27.1;
(c) a Bidder involves in fraud and corruption pursuant to clause 3.1;
(d) the successful Bidder fails to:
   (i) furnish a performance security in accordance with ITB 40.1;
   (ii) sign the Contract in accordance with ITB 41.1; or
   (iii) accept the correction of arithmetical errors pursuant to clause 33.1

DP funded:
The bid security shall be forfeited
(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid, except as provided in ITB 18.2; or
(b) if the successful Bidder fails to
   (i) furnish a performance security in accordance with ITB 40.1; or
   (ii) sign the Contract in accordance with ITB 41.1;
   (iii) accept arithmetical corrections in accordance with ITB 33.1;

19.7 The Bid Security of a Joint Venture shall be in the name of the Joint Venture that submits the bid. If the Joint Venture has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original set of the Technical Bid and one original of the Price Bid comprising the Bid as described in ITB 11 and clearly mark it “ORIGINAL – TECHNICAL BID” and “ORIGINAL – PRICE BID.” Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked “ALTERNATIVE”. In addition, the Bidder shall submit copies of the bid in the number specified in the BDS, and clearly mark each of them “COPY.” In the event of any discrepancy between the original and the copies, the original shall prevail.

In case of e-submission of bid, the Bidder shall submit his bid electronically in PDF or web forms files as specified in ITB Clause 21.1(b).

20.2 The original and all copies of the bid shall be typed or written in indelible ink and 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 attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid, except for un amended printed literature, shall be signed or initialed by the person signing the bid.

20.3 Any amendments such as interlineations, erasures, or overwriting shall be
**D. Submission and Opening of Bids**

21. Sealing and Marking of Bids

21.1 Unless otherwise specified in BDS, Bidders shall submit their bids by electronic or by mail/ by hand/ by courier. Procedures for submission, sealing and marking are as follows:

(a) Bidders submitting bids by mail, by hand or by courier shall enclose the original of the Technical Bid, and the original of the Price Bid and each copy of the Technical Bid and Price Bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as “ORIGINAL TECHNICAL BID”, “ORIGINAL – PRICE BID”, “ALTERNATIVE” and “COPY No. – TECHNICAL BID” and “COPY NO. PRICE BID”. These envelopes containing the original and the copies shall then be enclosed in one single envelope.

(b) Bidders submitting Bids electronically shall follow the electronic bid submission procedure specified in this clause.

i. The bidder is required to register in the e-GP system [https://www.bolpatra.gov.np/egp](https://www.bolpatra.gov.np/egp) following the procedure specified in e-GP guideline.

ii. Interested bidders may either purchase the bidding document from the Employer's office as specified in the Invitation for Bid (IFB) or bidders may download the IFB and bidding document from e-GP system.

iii. The registered bidders need to maintain their profile data required during preparation of bids.

iv. In order to submit their bids the cost of the bidding document can be deposited as specified in IFB. In addition, electronic scanned copy (.pdf format) of the bank deposit voucher/ cash receipt should also be submitted along with the technical bid.

v. The bidder can prepare their technical and price bids using data and documents maintained in bidder’s profile and forms/ format provided in bidding document by Employer. The bidder may submit bids as a single entity or as a joint venture. The bidder submitting bid in joint venture shall have to upload joint venture agreement along with partner(s) Bolpatra ID provided during bidder’s registration.

vi. Bidders (all partners in case of JV) should update their profile data and documents required during preparation and submission of their technical bids.

vii. In case of bid submission in JV, the consent of the partners shall be obtained through the confirmation link sent to the registered email address and the partners shall have to acknowledge their confirmation.

The required forms and documents shall be part of technical bids.

<table>
<thead>
<tr>
<th>No.</th>
<th>Document</th>
<th>Requirement</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Letter of Technical Bid</td>
<td>Mandatory</td>
<td>PDF</td>
</tr>
<tr>
<td>No.</td>
<td>Document</td>
<td>Requirement</td>
<td>Remarks</td>
</tr>
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</tr>
<tr>
<td>1.</td>
<td>Letter of Price Bid</td>
<td>Mandatory</td>
<td>PDF</td>
</tr>
<tr>
<td>2.</td>
<td>Completed Bill of Quantities (BoQ)</td>
<td>Mandatory</td>
<td>Online Forms</td>
</tr>
<tr>
<td>3.</td>
<td>Price Adjustment Table</td>
<td>If applicable</td>
<td>Online Forms</td>
</tr>
<tr>
<td>4.</td>
<td>Additional Documents specified in ITB 11.2</td>
<td>If applicable</td>
<td>PDF</td>
</tr>
</tbody>
</table>

**Note:** The documents specified as “Mandatory” should be included in e-submission and non-submission of the documents shall be considered as non-responsive bid.

vii. After providing all the details and documents, two separate bid response documents i.e technical bids and price bids will be generated from the system. Bidders are advised to download and verify the response documents prior to bid submission.

ix. For verifying the authentic user, the system will send one time password (OTP) in the registered e-mail address of the bidder. System will validate the OTP and allow bidder to submit their bid.

x. Electronically submitted bids can be modified and/or withdrawn through system. The bidder may modify their bids multiple times online within bid submission date and time specified in e-GP system. Once a Bid is withdrawn, bidder won’t be able to submit another bid response for the same bid.

xi. The Bidder / Bid shall meet the following requirements and conditions for e-submission of bids;
   aa) The e-submitted bids must be readable through PDF reader.
bb) The facility for submission of bid electronically through e-submission is to promote transparency, non-discrimination, equality of access, and open competition in the bidding process. The Bidders are fully responsible to use the e-submission facility properly in e-GP system as per specified procedures and in no case the Employer shall be held liable for Bidder's inability to use this facility.

cc) When a bidder submits electronic bid through the PPMO e-GP portal, it is assumed that the bidder has prepared the bid by studying and examining the complete set of the Bidding documents including specifications, drawings and conditions of contract.

21.2. The inner and outer envelopes shall:

(aa) bear the name and address of the Bidder;

(bb) be addressed to the Employer as provided in BDS 22.1;

(cc) bear the specific identification of this bidding process indicated in BDS 1.1; and

21.3 The outer envelope and the inner envelope containing Technical Proposal shall bear a warning not to open before the time and date for the opening of Technical Bid in accordance with ITB 25.1.

21.4 The inner envelope containing the Price Bid shall bear a warning not to open until advised by the Employer in accordance with ITB 25.7

21.5 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

22. Deadline for Submission of Bids

| 22.1 | Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS. In case of e-submission, the standard time for e-submission is Nepal Standard Time as set out in the server. The e-procurement system will accept the e-submission of bid from the date of publishing of notice and will automatically not allow the e-submission of bid after the deadline for submission of bid. |
| 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 Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder. |

24. Withdrawal, and Modification of Bids

| 24.1 | A Bidder may withdraw, or modify its bid- Technical or Price - after it has been submitted either in hard copy or by e-submission. Once a Bid is withdrawn, bidder shall not be able to submit another bid for this bidding process. Procedures for withdrawal or modification of submitted bids are |
as follows:

(i) Bids submitted in Hard Copy GoN Funded:
   a) Bidders may withdraw or modify its bids by sending a written notice in a sealed envelope, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2. The corresponding modification of the bid must accompany the respective written notice. All notices must be:
      (aa) prepared and submitted in accordance with ITB 20 and ITB 21, and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “MODIFICATION;” and
      (bb) received by the Employer twenty four hour prior to the deadline prescribed for submission of bids, in accordance with ITB 22.

   DP Funded:
   A Bidder may withdraw or modify its Bid – Technical or Price – after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding modification of the Bid must accompany the respective written notice. All notices must be
   i) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” and “MODIFICATION;” and
   ii) received by the Employer prior to the deadline prescribed for submission of Bids, in accordance with ITB 22.

   ii) E-submitted bids.
      a) Bidder may submit modification or withdrawal prior to the deadline prescribed for submission of bids through e-GP system by using the forms and instructions provided by the system.

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall not be opened. In case of hard copy submission, the Bid will be returned unopened to the Bidders.

24.3 The following provisions apply for withdrawal or modification of the Bids:

   GoN Funded:
   (i) In case of bids submitted in hard copy no bid shall be withdrawn or modified in the interval between 24 hours prior to 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.

   (ii) In case of e-submitted bids no bids shall be withdrawn or modified in the interval between deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Technical Bid and Price Bid or any extension thereof.

   DP Funded:
   No Bid may be withdrawn 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 Letters of Technical Bid and Price Bid or any extension thereof.
24.4 Except in case of any modification or correction in bid document made by procuring entity, Bidder may submit request for withdrawal or modification only one time.

24.5 In case of hard copy bid, no bid may be withdrawn if the bid has already been modified; except in case of any modification or correction in bid document by procuring entity.

24.6 Request for withdrawal or modification must be made through the same medium of submission. Request for withdrawal or modifications through different medium shall not be considered.

25. Bid Opening

25.1 The Employer shall open the Technical Bids in public at the address, on the date and time specified in the BDS in the presence of Bidders’ designated representatives who choose to attend. The Price Bids will remain unopened and will be held in custody of the Employer until the specified time of their opening. If the Technical Bid and Price Bid are submitted together in one envelope, the Employer shall reject the entire Bid.

25.2 The Employer shall download the e-submitted Technical Bid. The e-GP system allows the Employer to download the e-submitted technical bid only after bid opening date and time after login simultaneously by at least two members of the Bid Opening Committee.

25.3 Electronically submitted Technical Bid shall be opened at first in the same time and date as specified above. Electronic Bids shall be opened one by one and read out. The e-submitted technical bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files shall be considered incomplete.

25.4 Thereafter, envelopes marked “WITHDRAWAL” shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be Permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked “MODIFICATION” shall be opened and read out with the corresponding bid. No Technical Bid and/or Price Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at bid opening. Only the Technical Bid, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original and Modification, will remain unopened in accordance with ITB 25.1.

25.5 All other envelopes holding the Technical Bid shall be opened one at a time, reading out: the name of the Bidder; whether there is a modification; the presence of a bid security and any other details as the Employer may consider appropriate.

Only Technical Bids read out and recorded at bid opening shall be
considered for evaluation.

No bid shall be rejected at opening of Technical Bids except for late bids, in accordance with ITB 23.1.

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<tr>
<th>25.6</th>
<th>The Employer shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, or modification; and the presence or absence of a bid security. The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and effect of the record.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.7</td>
<td>At the end of the evaluation of the Technical Bids, the Employer will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer. Bidders shall be given at least 7 days notice for the opening of Price Bids.</td>
</tr>
<tr>
<td>25.8</td>
<td>The Employer will notify Bidders in writing who have been rejected on the grounds of their Technical Bids being substantially nonresponsive to the requirements of the Bidding Document and return their Price Bids unopened.</td>
</tr>
<tr>
<td>25.9</td>
<td>The Employer shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids, in the presence of Bidders’ representatives who choose to attend at the address, on the date, and time specified by the Employer. The Bidder’s representatives who are present shall be requested to sign a register evidencing their attendance.</td>
</tr>
</tbody>
</table>
| 25.10 | All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded:

(a) the name of the Bidder;
(b) whether there is a modification;
(c) the Bid Prices, including any discounts and alternative offers; and
(d) any other details as the Employer may consider appropriate.

Only Price Bids, discounts, modifications, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. No Bid shall be rejected at the opening of Price Bids. |
| 25.11 | The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum, the name of the Bidder, the Bid Price (per lot if applicable), any discounts, modifications and alternative offers. The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and effect of the record. |

### E. Evaluation and Comparison of Bids
<table>
<thead>
<tr>
<th>26. Confidentiality</th>
<th>26.1 Information relating to the examination, evaluation, comparison, and post-qualification of bids and recommendation of Contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26.2 Any attempt 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></td>
<td>26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it may do so in writing.</td>
</tr>
<tr>
<td>27. Clarification of Bids</td>
<td>27.1 To assist in the examination, evaluation, and comparison of the Technical and Price Bids, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer’s request for clarification and the response shall be in writing. No change in the substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Price Bids, in accordance with ITB 33. In case of e-submission of bid, upon notification from the employer, the bidder shall also submit the original of documents comprising the Technical and Price Bid as per ITB 11.2 and ITB 11.3 for verification of submitted documents for acceptance of the e-submitted bid.</td>
</tr>
<tr>
<td></td>
<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>28. Deviations, Reservations, and Omissions</td>
<td>28.1 During the evaluation of bids, the following definitions apply:</td>
</tr>
<tr>
<td></td>
<td>(a) “Deviation” is a departure from the requirements specified in the Bidding Document;</td>
</tr>
<tr>
<td></td>
<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></td>
<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>29. Examination of Technical Bid</td>
<td>29.1 The Employer shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB 11.2 have been provided, and to determine the completeness of each document submitted.</td>
</tr>
<tr>
<td></td>
<td>29.2 The Employer shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected.</td>
</tr>
<tr>
<td></td>
<td>(a) Letter of Technical Bid;</td>
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<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>30. Determination of Responsiveness of Technical Bid</strong></td>
<td><strong>30.1</strong> The Employer’s determination of a Bid’s responsiveness is to be based on the contents of the bid itself, as defined in ITB11.2.</td>
</tr>
<tr>
<td></td>
<td><strong>30.2</strong> A substantially responsive Technical 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,</td>
</tr>
<tr>
<td></td>
<td>(a) if accepted, would:</td>
</tr>
<tr>
<td></td>
<td>(i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or</td>
</tr>
<tr>
<td></td>
<td>(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</td>
</tr>
<tr>
<td></td>
<td>(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.</td>
</tr>
<tr>
<td></td>
<td><strong>30.3</strong> The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 16, Technical Proposal, in particular, to confirm that all requirements of Section VI (Works Requirements) have been met without any material deviation, reservation or omission.</td>
</tr>
<tr>
<td></td>
<td><strong>30.4</strong> 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.</td>
</tr>
<tr>
<td></td>
<td><strong>30.5</strong> In case of e-submission bids, the Employer evaluates the bid on the basis of the information in the electronically submitted bid files. If the Bidder cannot substantiate or provide evidence to establish the information provided in e-submitted bid through documents/clarifications as per ITB Clause 27.1, the bid shall not be considered for further evaluation.</td>
</tr>
<tr>
<td></td>
<td><strong>30.6</strong> If the corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution/company or any partner of JV, such Natural Person or Board of Director of the firm/institution/company or any partner of JV such bidder’s bid shall be excluded during the evaluation, if public entity receives instruction from Government of Nepal.</td>
</tr>
<tr>
<td></td>
<td><strong>30.7</strong> Except in case of e-submission, the Financial Bid of the bidder, which is evaluated as substantially non-responsive in technical bid, shall be returned to the respective bidders.</td>
</tr>
</tbody>
</table>
|**31. Nonconformities Errors, and**|**31.1** Provided that a bid is substantially responsive, the Employer may waive any non-conformities in the bid that do not constitute a material deviation,
<table>
<thead>
<tr>
<th>Omissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.2 Provided that a Technical 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 Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the Price Bid. Failure of the Bidder to comply with the request may result in the rejection of its bid.</td>
</tr>
<tr>
<td>31.3 Provided that a Technical 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 non-conforming item or component. The adjustment shall be made using the methods indicated in Section III (Evaluation and Qualification Criteria).</td>
</tr>
<tr>
<td>31.4 If the monetary value of such non-conformities is found to be more than fifteen percent of the Bid Price of the bidder pursuant to ITB 31.3, such bid shall be considered nonresponsive and shall not be involved in evaluation.</td>
</tr>
<tr>
<td>32 Qualification of the Bidder</td>
</tr>
<tr>
<td>32.1 The Employer shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders meet the qualifying criteria specified in Section III (Evaluation and Qualification Criteria).</td>
</tr>
<tr>
<td>32.2 The determination shall be based upon an examination of the documentary evidence of the Bidder’s qualifications submitted by the Bidder, pursuant to ITB 17.1.</td>
</tr>
<tr>
<td>32.3 An affirmative determination shall be a prerequisite for the opening and evaluation of a Bidder’s Price Bid. A negative determination shall result into the disqualification of the Bid, in which event the Employer shall return the unopened Price Bid to the Bidder.</td>
</tr>
<tr>
<td>33. Correction of Arithmetical Errors</td>
</tr>
<tr>
<td>33.1 During the evaluation of Price Bids, the Employer shall correct arithmetical errors on the following basis:</td>
</tr>
<tr>
<td>(a) only for unit price Contracts, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;</td>
</tr>
<tr>
<td>(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;</td>
</tr>
<tr>
<td>(c) If there is a discrepancy between the bid price in the Summary of Bill of Quantities and the bid amount in item (c) of the Letter of Price Bid, the bid price in the Summary of Bill of Quantities will prevail and the bid amount in item (c) of the Letter of Price Bid will be corrected.</td>
</tr>
<tr>
<td>Section</td>
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<td>---------------</td>
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<tr>
<td>33.2</td>
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<td>34 Subcontractors</td>
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<td>35 Evaluation of Price Bids</td>
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<tr>
<td>35.4 If this Bidding Document allows Bidders to quote separate prices for different Contracts, and to award multiple Contracts to a single Bidder, the methodology to determine the lowest evaluated price of the Contract combinations, including any discounts offered in the Letter of Price Bid, is specified in Section III (Evaluation and Qualification Criteria).</td>
</tr>
<tr>
<td>35.5 if the bid for an Unit Rate Contract, which results in the lowest Evaluated Bid Price is seriously unbalanced or front loaded or extremely low in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder as mentioned in BDS to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract or may consider the bid as non-responsive.</td>
</tr>
<tr>
<td>35.6 In case of e-submission bids, the Employer evaluates the bid on the basis of the information in the electronically submitted bid files. If the Bidder cannot substantiate or provide evidence to establish the information provided in e-submitted bid through documents/clarifications as per ITB Clause 27.1, the bid shall not be considered for further evaluation.</td>
</tr>
<tr>
<td>35.7 If the corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution/company or any partner of JV, such Natural Person or Board of Director of the firm/institution/company or any partner of JV such bidder’s bid shall be excluded during the evaluation, if public entity receives instruction from Government of Nepal.</td>
</tr>
<tr>
<td>36. Comparison of Bids</td>
</tr>
<tr>
<td>37. Employer’s Right to Accept Any Bid, and to Reject Any or All Bids</td>
</tr>
<tr>
<td>F. Award of Contract</td>
</tr>
<tr>
<td>38. Award Criteria</td>
</tr>
<tr>
<td>Section</td>
</tr>
<tr>
<td>---------</td>
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</tbody>
</table>
| 39. Letter of Intent to Award the Contract/Notification of Award | **39.1** The Employer shall notify the concerned Bidder whose bid has been selected in accordance with ITB 38.1 within seven days of the selection of the bid, in writing that the Employer has intention to accept its bid and the information regarding the name, address and amount of selected bidder shall be given to all other bidders who submitted the bid.  
   
   **39.2** If no bidder submits an application pursuant to ITB 42 within a period of seven days of the notice provided under ITB 39.1, the Employer shall, accept the bid selected in accordance with ITB 38.1 and Letter of Acceptance shall be communicated to the selected bidder prior to the expiration of period of Bid validity, to furnish the performance security and sign the contract within fifteen days.  
   
   **39.3** If the corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution/company or any partner of JV, such Natural Person or Board of Director of the firm/institution/company or any partner of JV such bidder’s bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal. |
| 40. Performance Security | **40.1** Within Fifteen (15) days of the receipt of Letter of Acceptance from the Employer, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, subject to ITB 35.5, as specified below from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal using Sample Form for the Performance Security included in Section X (Contract Forms), or another form acceptable to the Employer. The performance security issued by any foreign Bank outside Nepal must be counter guaranteed by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.  
   i) If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent below the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price.  
   ii) For the bid price of the bidder selected for acceptance is more than 15 (fifteen) percent below of the cost estimate, the performance security amount shall be determined as follows:  
   
   \[
   \text{Performance Security Amount} = [(0.85 \times \text{Cost Estimate} - \text{Bid Price}) \times 0.5] + 5\% \text{ of Bid Price.}
   \]
   
   The Bid Price and Cost Estimate shall be inclusive of Value Added Tax.  
   
   **40.2** Failure of the successful Bidder to submit the above-mentioned 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 next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily. The process shall be repeated according to ITB 39. |
| 41. Signing of Contract | **41.1** The Employer and the successful Bidder shall sign the Contract Agreement within the period as stated ITB 40.1.  
   
   **41.2** At the same time, the Employer shall affix a public notice on the result of the award on its notice board and make arrangement for causing such
notice to be affixed on the notice board also of the *District Coordination Committee, District Administration Office, Provincial Treasury and Controller Office and District Treasury and Controller Office*. The Employer may make arrangements to post the notice into its website, if it has; and if it does not have, into the website of the Public Procurement Monitoring Office, identifying the bid and lot numbers and the following information: (i) the result of evaluation of bid; (ii) date of publication of notice inviting bids; (iii) name of newspaper; (iv) reference number of notice; (v) item of procurement; (vi) name and address of bidder making contract and (viii) contract price

41.3 Within thirty (30) days from the date of issuance of notification pursuant to ITB 39.1 unsuccessful bidders may request in writing to the Employer for a debriefing seeking explanations on the grounds on which their bids were not selected. The Employer shall promptly respond in writing to any unsuccessful Bidder who, requests for debriefing.

41.4 If the bidder whose bid has been accepted fails to sign the contract as stated ITB 40.1, the Public Procurement Monitoring Office shall blacklist the bidder on recommendation of the Public Entity.

42. **Complaint and Review**

42.1 If a Bidder is dissatisfied with the Procurement proceedings or the decision made by the Employer in opening of the price bid or the intention to award the Contract, it may file an application to the Chief of the Public Entity or Public Procurement Monitoring Office or office established as per Clause 145(a) of the Public Procurement Regulation within Seven (7) days of providing the notice under ITB 25.8 and ITB 39.1 by the Public Entity, for review of the proceedings stating the factual and legal grounds.

42.2 Late application filed after the deadline pursuant to ITB 42.1 shall not be processed.

42.3 The chief of Public Entity shall, within five (5) days after receiving the application, give its decision with reasons, in writing pursuant to ITB 42.1:

   (a) whether to suspend the procurement proceeding and indicate the procedure to be adopted for further proceedings; or

   (b) to reject the application.

   The decision of the chief of Public Entity shall be final for the Bid amount up to the value as stated in 42.4.

42.4 If the Bidder is not satisfied with the decision of the Public Entity in accordance with ITB 42.3, is not given within five (5) days of receipt of application pursuant to ITB 42.1, it can, within seven (7) days of receipt of such decision, file an application to the Review Committee of the GoN, stating the reason of its disagreement on the decision of the chief of Public Entity and furnishing the relevant documents, provided that its Bid amount, equal or more than Rupees Six Million (NRs. 6,000,000). The application may be sent by hand, by post, by courier, or by electronic media at the risk of the Bidder itself.
| 42.5 | Late application filed after the deadline pursuant to ITB 42.4 shall not be processed. |
| 42.6 | Within three (3) days of the receipt of application from the Bidder, pursuant to ITB 42.4, the Review Committee shall notify the concerning Public Entity to furnish its procurement proceedings, pursuant to ITB 42.3. |
| 42.7 | Within three (3) days of receipt of the notification pursuant to ITB 42.6, the Public Entity shall furnish the copy of the related documents to the Review Committee. |
| 42.8 | The Review Committee, after inquiring from the Bidder and the Public Entity, if needed, shall give its decision within one (1) month of the receipt of the application filed by the Bidder, pursuant to ITB 42.4. |
| 42.9 | The Bidder, filing application pursuant to ITB 42.4, shall have to furnish a cash amount or Bank guarantee from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law equivalent to one percent (1%) of its quoted Bid amount with the validity period of at least ninety (90) days from the date of the filing of application pursuant to ITB 42.4. |
| 42.10 | If the claim made by the Bidder pursuant to ITB 42.4 is justified, the Review Committee shall have to return the security deposit to the applicant, pursuant to ITB 42.9, within seven (7) days of such decision made. |
SECTION-II
Bid Data Sheet
A. General

ITB 1.1 The number of the Invitation for Bids is: DoWRI/MRTP/CPBJ/Works/NCB - 05

ITB 1.1 The Employer is: Department of water Resource and Irrigation, Jawalakhel, Lalitpur

ITB 1.1 The number and identification of lots comprising this bidding process is: DoWRI/MRTP/CPBJ/Works/NCB - 05

ITB 2.1 The name of the Project is: Construction of RCC Counterfort Retaining Wall and Boulder Riprap

The Development Partner(DP) is: NA

The implementing agency is: NA

GoN Funded or DP Funded: NA

ITB 4.1(a) Maximum number of partner in a joint venture shall be: 3

B. Bidding Document

ITB 7.1 For clarification purposes only, the Employer’s address is:

Attention: Rana Bahadur Bam
Address: Darchula
Telephone: 9858757075
Facsimile number: dwidp.mrtp@gmail.com

ITB 7.4 A pre bid meeting shall be held. Pre-Bid meeting will take place at the following date, time and place:

Date and Time: 26-07-2020 13:00
Address: Room No. 322 of Department of Water Resources and Irrigation, Jawalakhel, Lalitpur

ITB 7.4 A site visit shall not be organized by the Employer.

ITB 7.5 Time for request: Requests for clarification should be received by the Employer no later than 10 days prior to the deadline for submission of bids.

C. Preparation of Bids

ITB 10.1 The language of the bid is: English / Nepali

ITB 11.2 The Bidder shall submit with its Technical Bid the following additional documents:

<table>
<thead>
<tr>
<th>SL. No</th>
<th>Document Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power of Attorney, Tax Clarence certificate of F/Y 2075/76</td>
</tr>
</tbody>
</table>
In accordance with ITB 12 and ITB 14, the following schedules shall be submitted with the bid, including the priced Bill of Quantities for Unit Rate Contracts and Schedule of Prices for lump sum contracts:

<table>
<thead>
<tr>
<th>SL No</th>
<th>Document Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

The Bidder shall submit with its Price Bid the following additional documents:

<table>
<thead>
<tr>
<th>SL No</th>
<th>Document Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Price Adjustment Table</td>
</tr>
</tbody>
</table>

Alternative bids shall not be permitted.

Alternative times for completion shall not be permitted.

If alternative times for completion are permitted, the evaluation method will be as specified in Section III (Evaluation and Qualification Criteria).

Alternative technical solutions shall not be permitted for the following parts of the Works:

- ITB 14.6: The prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract. Bidder shall submit the Table of Price Adjustment Data as a part of price bid.

The bid validity period shall be 90 days.

The Bidder shall furnish a bid security from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law with a minimum of 15,74,600.00 NPR, which shall be valid for 30 days beyond the validity period of the bid.

- ITB 19.2(b): Bank Name: Rastriya Banijya Bank Ltd.
  - Branch Name: Darchula Branch
  - Bank Address: Darchula
  - Office Name: Treasury and Account Controller Office, Darchula
  - Account Number: 4090203000000
  - Office Code: 308037301

In addition to the original of the bid, the number of copy/ies is not applicable.

The written confirmation of authorization to sign on behalf of the Bidder shall indicate:

(a) The name and description of the documentation required to demonstrate the authority of the signatory to sign the Bid such as a Power of Attorney; and
(b) In the case of Bids submitted by an existing or intended JV, an undertaking signed by all parties
  (i) stating that all parties shall be jointly and severally liable, and
  (ii) nominating a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.

D. Submission and Opening of Bids

Bidders shall have the option of submitting their bids by electronic only.

For bid submission purposes only, the Employer’s address is:

Attention: Project Director, Mahakali River Training Project, Darchula
Address:

The deadline for bid submission is: 06-08-2020 12:00

The Technical Bid opening shall take place at:

Address: Room No. 322 of Department of Water Resources and Irrigation, Jawalakhel, Lalitpur
Date: 06-08-2020 13:00

ITB 30.6 is replaced by “In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution/company or any partner of JV, such Natural Person or Board of Director of the firm/institution/company or any partner of JV such bidder’s bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal”

E. Evaluation and Comparison of Bids

ITB 34.1 Sub-contracting for this procurement is: Not Applicable

ITB 35.5 The amount of the performance security be increased by 8 percent of the quoted bid price.
SECTION-III

Evaluation and Qualification Criteria
## 1. Evaluation

### 1.1 Adequacy of Technical Proposal

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Criteria Title</th>
<th>Criteria Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adequacy of Technical Proposal</td>
<td>Evaluation of the Bidder's Technical Proposal will include 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, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section VI (Works Requirements).</td>
</tr>
</tbody>
</table>

### 1.2 Multiple Contracts

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Criteria Title</th>
<th>Criteria Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Multiple Contracts</td>
<td>Pursuant to Sub-Clause 35.4 of the Instructions to Bidders, if Works are grouped in multiple contracts, evaluation will be as follows: Works are grouped in multiple contracts and pursuant to Sub-Clause 35.4 of the Instructions to Bidders, the Employer will evaluate and compare Bids on the basis of a contract, or a combination of contracts, or as a total of contracts in order to arrive at the least cost combination for the Employer by taking into account discounts offered by Bidders in case of award of multiple contracts. If a bidder submits several successful (lowest evaluated substantially responsive) bids, the evaluation will also include an assessment of the Bidder's capacity to meet the aggregated requirements regarding: • Specific Construction Experience • Average Annual Construction Turnover • Financial Resources, Equipment to be allocated, and • Personnel to be fielded.</td>
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</table>

### 1.5 Quantifiable Non-conformities and Omissions

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<thead>
<tr>
<th>Sl. No.</th>
<th>Criteria Title</th>
<th>Criteria Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quantifiable Non-conformities and Omissions</td>
<td>Subject to ITB 14.2 and ITB 35.2, the evaluated cost of quantifiable nonconformities including omissions, is determined as follows: [Insert in bidding document: “Pursuant to ITB 31.3, the cost of all quantifiable nonmaterial nonconformities shall be evaluated, but excluding omission of prices in the Bill of Quantities. The Employer will make its own assessment of the cost of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of bids.”]</td>
</tr>
</tbody>
</table>

## 2. Qualification

### 2.1 Eligibility

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Criteria Title</th>
<th>Criteria Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nationality</td>
<td>Nationality in accordance with ITB sub-clause 4.2 Single Entity must meet requirement. In case of joint ventures All Partners Combined must meet requirement. Each Partner must meet requirement. One Partner not applicable. Documents Submission Requirements: Letter of Technical Bid Forms ELI –1; ELI –2 with attachments.</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Criteria Title</td>
<td>Criteria Description</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td>Conflict of Interest</td>
<td>No conflicts of interest in accordance with ITB Sub-Clause 4.3. Single Entity must meet requirement. In case of joint ventures: All Partners Combined existing or intended JV must meet requirement. Each Partner must meet requirement. One Partner not applicable. Documents Submission Requirements: Letter of Technical Bid.</td>
</tr>
<tr>
<td>4</td>
<td>UN Eligibility</td>
<td>Not having been declared ineligible based on a United Nations resolution or Employer's country law, as described in ITB Sub-Clause 4.8. Single Entity must meet requirement. In case of joint ventures: All Partners Combined existing or intended JV must meet requirement. Each Partner must meet requirement. One Partner not applicable. Documents Submission Requirements: Letter of Technical Bid.</td>
</tr>
<tr>
<td>5</td>
<td>Government-owned Entity</td>
<td>Bidder required to meet conditions of ITB Sub-Clause 4.5. Single Entity must meet requirement. In case of joint ventures: All Partners Combined existing or intended JV must meet requirement. Each Partner must meet requirement. One Partner not applicable. Documents Submission Requirements: Forms ELI-1, ELI-2, with attachments.</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Criteria Title</td>
<td>Criteria Description</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>Other Eligibility : VAT and PAN Registration certificate (only for domestic bidders)</td>
<td>VAT and PAN Registration certificate (only for domestic bidders) &lt;br&gt;Single Entity must meet requirement. &lt;br&gt;In case of joint ventures &lt;br&gt;   All Partners Combined not applicable. &lt;br&gt;Each Partner must meet requirement. &lt;br&gt;One Partner not applicable. &lt;br&gt;Documents Submission Requirements: Document attachment.</td>
</tr>
<tr>
<td>10</td>
<td>Other Eligibility : Additional requirements</td>
<td>Additional requirements &lt;br&gt;Single Entity must meet requirement. &lt;br&gt;In case of joint ventures &lt;br&gt;   All Partners Combined not applicable. &lt;br&gt;Each Partner must meet requirement. &lt;br&gt;One Partner not applicable. &lt;br&gt;Documents Submission Requirements: Document attachment.</td>
</tr>
<tr>
<td>11</td>
<td>Corruption Charges: case is being filed to Court against the Natural Person or Board of Director of the firm/institution/company or any partner of JV</td>
<td>Such Natural Person or Board of Director of the firm/institution/company or any partner of JV such bidder’s bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal. &lt;br&gt;Documents Submission Requirements: Self declaration in Letter of technical bid or may submit separately. &lt;br&gt;Shall also be checked from the information from the investigating authority for corruption charges for case is/isn't filed.</td>
</tr>
</tbody>
</table>

### 2.2 Pending Litigation

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Criteria Title</th>
<th>Criteria Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pending Litigation</td>
<td>All pending litigation shall be treated as resolved against the Bidder and so shall in total not represent more than 50 percent of the Bidder's net worth. &lt;br&gt;For Single Entity: must meet requirement by itself or as partner to past or existing JV &lt;br&gt;For joint Venture: Each partner must meet requirement by itself or as partner to past or existing JV. All partner combined and one partner -&gt; not applicable. &lt;br&gt;Documents Submission Requirements: Form LIT - 1</td>
</tr>
</tbody>
</table>

### 2.3 Financial Situation

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Criteria Title</th>
<th>Criteria Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Historical Financial Performance</td>
<td>Submission of audited balance sheets and income statements, for the last Three (3) years to demonstrate the current soundness of the Bidder's financial position. As a minimum, a Bidder's net worth calculated as the difference between total assets and total liabilities should be positive. &lt;br&gt;For Single Entity: Must meet requirement &lt;br&gt;For joint Venture: Each partner Must meet requirement. All partner combined and one partner -&gt; not applicable. &lt;br&gt;Documents Submission Requirements: Form FIN - 1 with attachments</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Criteria Title</td>
<td>Criteria Description</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 2      | Average Annual Construction Turnover              | Minimum average annual construction turnover of NRs 62.983 Millions, calculated as total certified payments received for construction contracts in progress or completed, within best three years out of last ten years. Only the net amount shall be calculated after deducting the amount for VAT and such amount shall be adjusted wholesale price index of Nepal Rastra Bank.   
For Single Entity: Must meet requirement    
For joint Venture: All combined partner Must meet requirements, Each partner Must meet 25% of the requirement, One partner must meet 40% of the requirements.    
Documents Submission Requirements: Form FIN -2 |
| 3      | Financial Resources                                | Using Forms FIN - 3 in Section IV (Bidding Forms) the Bidder must demonstrate access to, or availability of, financial resources in the form of “Lines of Credit”, The following cash - flow requirement, NRs. 8.750 Millions    
For Single Entity: Must meet requirement    
For joint Venture: All partners combined Must meet requirements, Each partner Must meet 25% of the requirement, One partner must meet 40% of the requirements.    
Documents Submission Requirements: Form FIN - 3                                                                                     |

Using Forms FIN - 3 in Section IV (Bidding Forms) the Bidder must demonstrate access to, or availability of, financial resources in the form of “Lines of Credit”, The following cash - flow requirement, NRs. 8.750 Millions    
For Single Entity: Must meet requirement    
For joint Venture: All partners combined Must meet requirements, Each partner Must meet 25% of the requirement, One partner must meet 40% of the requirements.    
Documents Submission Requirements: Form FIN - 3                                                                                     |

2.3.4 Required Bid Capacity

The bidding capacity of the bidder should be equal to or more than the NRs 62.983 Millions

<table>
<thead>
<tr>
<th>Form FIN - 3</th>
<th>Form FIN - 4,5</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN - 3</td>
<td>FIN - 4,5</td>
</tr>
</tbody>
</table>
# 2.4 Experience

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Criteria Title</th>
<th>Criteria Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Construction Experience</td>
<td>Experience under construction contracts in the role of contractor, subcontractor, or management contractor for at least the last five (5) years prior to the applications submission deadline. For Single Entity: Must meet requirement. For joint Venture: Each Partner Must meet requirement. All partner combined and one partner not applicable. Documents Submission Requirements: Form EXP - 1</td>
</tr>
<tr>
<td>2</td>
<td>Contracts of Similar Size and Nature</td>
<td>Participation as Prime contractor, management contractor, or subcontractor, in at least one (1) Contract within the last ten (10) years, each with a value of at least NRs 50.386 Millions that have been successfully or are substantially completed and that are similar to the proposed works. The similarity shall be based on the physical size, complexity, methods, technology or other characteristics as described in Section VI, Works Requirements. Only the net amount shall be calculated after deducting the amount for VAT and such amount shall be adjusted to present value by applying wholesale price index of Nepal Rastra Bank. For Single Entity: Must meet requirement. For joint Venture: All partners combined, must meet requirement. Each partner and one partner not applicable. Documents Submission Requirements: Form EXP - 2(a) For this Work, Types of works to be considered as Similar Nature and Complexity are: 1) Construction of River Training Works 2) Construction of Irrigation Projects and water supply projects 3) Construction of Bridges and Piers 4) Construction of Headworks of Hydropower Project (Civil Work) 5) Construction of Road 6) Construction of Building</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Criteria Title</td>
<td>Criteria Description</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 3      | Construction Experience in Key Activities         | For the above or other contracts executed during the period stipulated in 2.4.2(a) above, a minimum construction experience in the following key activities:  
1. Earthwork: - 437.81 m$^3$/month  
2. Concrete works: - 111.40 m$^3$/month  
3. Reinforcement work: - 6.32 Mt./Month  
4. Form work: - 311.82 m$^2$/month  
For Single Entity: Must meet all requirement  
For joint Venture: All partners combined must meet all requirements. Each Partner not applicable. One partner not applicable.  
Documents Submission Requirements: Form EXP - 2(b)  
List the production rate(s) for the key activity(ies) in the subject contract. The rates should be about 80% of the estimated production rates of the key activity(ies) in the subject contract as needed to meet the expected construction schedule with due allowance for adverse climatic conditions. |
2.5 Personnel

The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Position</th>
<th>Required No</th>
<th>Academic Qualification</th>
<th>Total Work Experience (in years)</th>
<th>Experience in Similar Work (in years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project/Contract Manager</td>
<td>1</td>
<td>Graduate in Civil Engineering or equivalent</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Civil Engineer</td>
<td>1</td>
<td>Graduate in Civil Engineering</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Sub-Engineer</td>
<td>1</td>
<td>Diploma in Civil Engineering or Equivalent</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

In case the bidder proposes to consider Personnel that may be spared from committed/ongoing contracts for evaluation, the bidder shall provide details of personnel which will be spared from such committed/ongoing contracts based on the physical progress at the date of bid submission.

The Bidder shall provide details of the proposed personnel and their experience records in the relevant Information Forms included in Section IV (Bidding Forms).
2.6 Equipment

The Bidder must demonstrate that it has the key equipment listed hereafter:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Equipment Type Characteristics</th>
<th>Minimum number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Truck/Tripper</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Excavator</td>
<td>1</td>
</tr>
</tbody>
</table>

In case the Bidder proposes to consider Equipment that may be spared from committed/ongoing contracts for evaluation, the Bidder shall provide details of Equipment which will be spared from committed/ongoing contracts clearly demonstrating the availability of such equipment with respect to the physical progress of the ongoing contracts on the date of bid submission.

In case of Equipment to be leased/hired the same procedure as mentioned above shall apply.

The Bidder shall provide further details of proposed items of equipment using the relevant Form in Section IV (Bidding Forms)
2.7 Subcontractors

The experience and financial capacity of the sub-contractors shall not be added to those of the Bidder for purposes of qualification of the Bidder. The sub-contractors proposed shall be fully qualified for their work proposed, and meet the following criteria:
SECTION-IV
Bidding Forms
Letter of Technical Bid

The Bidder must accomplish the Letter of Bid in its letterhead clearly showing the Bidder’s complete name and address.

Date: .........................................................
Name of the contract: ......................................
Invitation for Bid No.: ..................................................

To:...........................................................................

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) Clause 8.

(b) We offer to execute in conformity with the Bidding Documents the following Works:

(c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of [insert validity period as specified in ITB 18.1 of the BDS] days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

(d) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.2 and meet the requirements of ITB 3.4 & 3.5.

(e) We are not participating, as a Bidder or as a subcontractor, in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative offers submitted in accordance with ITB 13.

(f) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible by DP, under the Employer’s country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;

(g) We are not a government owned entity/We are a government owned entity but meet the requirements of ITB 4.5;

(h) We declare that, we including any subcontractors or suppliers for any part of the contract do not have any conflict of interest in accordance with ITB 4.3 and we have not been punished for an offense relating to the concerned profession or business.

(i) We declare that we are solely responsible for the authenticity of the documents submitted by us. The document and information submitted by us are true and correct. If any document/information given is found to be concealed at a later date, we shall accept any legal actions by the Employer.

(j) We agree to permit the Employer/DP or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors.
appointed by the Employer.

(l) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section III (Evaluation and Qualification Criteria) and our technical proposal, or as otherwise agreed with the Employer.

(m)

Name: ..............................................................................................................................

In the capacity of ..............................................................................................................

Signed ..............................................................................................................................

Duly authorized to sign the Bid for and on behalf of ...........

Date ......................................................................................................................................
Letter of Price Bid

The Bidder must accomplish the Letter of Bid in its letterhead clearly showing the Bidder’s complete name and address.

Date: .........................................................

Name of the contract: .........................................................

Invitation for Bid No.: .......................................................

To:……………………………
………………………………………………………………………....

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) Clause 8;

(b) We offer to execute in conformity with the Bidding Documents the following Works:

(c) The total price of our Bid, excluding any discounts offered in item (d) below is: NRs. ..............................................................; or when left blank is the Bid Price indicated in the Bill of Quantities

(d) The discounts offered and the methodology for their application are:..............................................................

(e) Our bid shall be valid for a period of [insert validity period as specified in ITB 18.1] days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(f) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document;

(g) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract:2

<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>
</tr>
</tbody>
</table>

(h) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;

---

1 Absence of the total price in the Letter of Price Bid or in the Bill of Quantities shall result in rejection of the Bid.

2 If none has been paid or is to be paid, indicate “None”.

(i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive; and

(j) We declare that we are solely responsible for the authenticity of the documents submitted by us.

(k) We agree to permit the Employer/DP or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the Employer.

Name: ..................................................................................................................

In the capacity of ..................................................................................................

Signed ..............................................................................................................

Duly authorized to sign the Bid for and on behalf of ............

Date ..............................................................................................................
# Table of Price Adjustment Data

[To be used if Price Adjustment is applicable as per GCC 53.1]

<table>
<thead>
<tr>
<th>Code</th>
<th>Index Description</th>
<th>Source of Index*</th>
<th>Base Value and Date</th>
<th>Employer's Proposed Weighting Range (coefficient)</th>
<th>Bidder's Proposed Weighting (coefficient)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non - Adjustable (A)</td>
<td></td>
<td></td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>Labor (b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Materials (c)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment usage (d)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

* Normally following source of index shall apply. Public Entity shall choose applicable Index for each item.

(a) Labor: "National Salary and Wage Rate Index" - "Construction Labor" of Nepal Rastra Bank or rate fixed by District Rate Fixation Committee

(b) Material: "National Wholesale Price Index" - "Construction Materials" of Nepal Rastra Bank

(c) Equipment usage: "National Wholesale Price Index" - "Machinery and Equipment" of Nepal Rastra Bank or "Fuel" Price fixed by Nepal Oil Corporation.

** Bidders proposed weightings should be within the range specified by the Employer in column 5.
Table of Price Adjustment Data
[To be used if Price Adjustment is applicable as per GCC 53.6]

<table>
<thead>
<tr>
<th>Code</th>
<th>Construction Material*</th>
<th>Unit</th>
<th>Base Price (NRs/Unit) (Ex-factory)</th>
<th>Source (Factory)**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Major construction materials to be specified by Employer in column - 2.

** Base Price and source normally to be specified by Employer (or alternatively informed to be proposed by bidder) in column 4 and 5.

Note:
The base prices of the construction materials shall be taken as of 30 days before the deadline for submission of the Bid as quoted by the Bidder and verified by the Employer. For the purpose of calculation of price adjustment, the Ex-factory price of the same source shall be taken into consideration.
Bid Security

Bank Guarantee

Bank’s Name, and Address of Issuing Branch or Office
(On Letter head of the Commercial bank or any Financial Institution eligible to issue Bank Guarantee as per prevailing Law)

Beneficiary: ..................................................... name and address of Employer .....................................................

Date: .......................................................... Bid Security No.: ..........................................................

We have been informed that. .............................. [insert name of the Bidder] (hereinafter called “the Bidder”) intends to submit its bid (hereinafter called “the Bid”) to you for the execution of .............................................. name of Contract .............................................. under Invitation for Bids No. .............................................. (“the IFB”).

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we................. name of Bank ..................... hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of .......................................................... amount in figures .......................................................... (.......................................................... amount in words ..........................................................)

upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

(a) has withdrawn or modifies its Bid:

(i) during the period of bid validity specified by the Bidder on the Letter of Technical and Price Bid, in case of electronic submission

(ii) from the period twenty-four hours prior to bid submission deadline up to the period of bid validity specified by the Bidder on the Letter of Technical Bid and Price Bid, in case of hard copy submission; or

(b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter “the ITB”); or

(c) changes the prices or substance of the bid while providing information pursuant to clause 27.1 of ITB; or

(d) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

(e) is involved in fraud and corruption in accordance with the ITB

This guarantee will remain in force up to and including the date ................. number ................. 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.

This Bank guarantee shall not be withdrawn or released merely upon return of the original guarantee by the Bidder unless notified by you for the release of the guarantee.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.

..................................................... Bank’s seal and authorized signature(s) .....................................................

Note:

The bid security of ..................................................... has been counter guaranteed by the Bank ..................................................... on ..................................................... ..................................................... ..................................................... (Applicable for Bid Security of Foreign Banks).
Letter of Commitment for Bank’s Undertaking for Line of Credit

Bank’s Name, and Address of Issuing Branch or Office (On Letter head of the Commercial bank or any Financial Institution eligible to issue Bank Guarantee as per prevailing Law)

Invitation for Bids No: __________________________ Date: __________________________

Contract No: __________________________

Name of Contract : __________________________

To: __________________________

[Name and address of the Procuring Entity]

CREDIT COMMITTMENT No: [insert number]

We have been informed that [name of Bidder] (hereinafter called “the Bidder”) intends to submit to you its Bid (hereinafter called “the Bid”) for the execution of the Works of [description of works] under the above Invitation for Bids (hereinafter called “the I”).

Furthermore, we understand that, according to your conditions, the Bidder’s Financial Capacity i.e. Liquid Asset must be substantiated by a Letter of Commitment of Bank’s Undertaking for Line of Credit.

At the request of, and arrangement with, the Bidder, we [name and address of the Bank] do hereby agree and undertake that [name and address of the Bidder] will be provided by us with a revolving line of credit, in case awarded the Contract, for execution of the Works viz. [insert name of the works], for an amount not less than NRs .......[in figure] (in words) for the sole purpose of the execution of the above Contract. This Revolving Line of Credit will be maintained by us until issuance of “Taking-Over Certificate” by the Procuring Entity.

In witness whereof, authorised representative of the Bank has hereunto signed and sealed this Letter of Commitment.

Signature __________________________ Signature __________________________
Technical Proposal Format

Personnel

Equipment

Site Organization

Method Statement

Mobilization Schedule

Construction Schedule

Others
Personnel

Form PER - 1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section III (Evaluation and Qualification Criteria). The data on their experience should be supplied using the Form below for each candidate.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Position*</th>
<th>Academic Qualification</th>
<th>Total Work Experience [Years]</th>
<th>Experience in Similar Works [years]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

* As listed in Section III (Evaluation and Qualification Criteria).
Form PER - 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Fields with asterisk (*) shall be used for evaluation.

<table>
<thead>
<tr>
<th>Position*</th>
<th>Personal Information</th>
<th>Name</th>
<th>Date of Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional qualifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present employment</td>
<td>Name of employer</td>
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<td></td>
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<tr>
<td></td>
<td>Address of employer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephone</td>
<td>Contact (manager/personnel officer)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fax</td>
<td>E-mail</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Job title</td>
<td>Years with present employer</td>
<td></td>
</tr>
</tbody>
</table>

Summarize professional experience over the last twenty years in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

<table>
<thead>
<tr>
<th>From*</th>
<th>To*</th>
<th>Company, Project, Position and Relevant Technical and Management Experience*</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Note:

In case of e-submission the Resume of Proposed Personnel shall be submitted on notification by the Employer as per ITB 27.
Equipment

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.

(i) **For the equipment under Bidder’s ownership**

<table>
<thead>
<tr>
<th>No.</th>
<th>Equipment Type and Characteristics</th>
<th>Total Nos. of Equipment under Bidder’s Ownership</th>
<th>No. of Equipment engaged/proposed for ongoing/committed contracts</th>
<th>Nos. of Equipment proposed for this contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<td>4.</td>
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<tr>
<td>5.</td>
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</tr>
</tbody>
</table>

(ii) **For the Equipment to be leased/hired**

<table>
<thead>
<tr>
<th>No.</th>
<th>Equipment Type and Characteristics</th>
<th>Total Nos. of Equipment under the ownership of lease/hire provider</th>
<th>No. of Equipment engaged/committed for other works</th>
<th>Nos. of Equipment proposed to be leased/hired for this contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>5.</td>
<td></td>
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</tr>
</tbody>
</table>

**Type of Equipment***

<table>
<thead>
<tr>
<th>Equipment Information</th>
<th>Name of manufacturer</th>
<th>Model and power rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Status</th>
<th>Current location</th>
<th>Details of current commitments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Indicate source of the equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Owned, Rented, Leased, Specially manufactured</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>-----------------</td>
</tr>
<tr>
<td>Agreements</td>
<td>Details of rental / lease / manufacture agreements specific to the project</td>
</tr>
</tbody>
</table>

The Bidder shall be solely responsible for the data provided. However, this shall not limit the right of Employer to verify the authenticity of submitted information.

**Note:**

*In case of e-submission the “Agreements” shall be submitted on notification by the Employer as per ITB 27.1*
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.

Form ELI - 1: Bidder’s Information Sheet

<table>
<thead>
<tr>
<th>Bidder's Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidder’s legal name</td>
</tr>
<tr>
<td>In case of JV, legal name of each partner</td>
</tr>
<tr>
<td>Bidder’s country of constitution</td>
</tr>
<tr>
<td>Bidder’s year of constitution</td>
</tr>
<tr>
<td>Bidder’s legal address in country of constitution</td>
</tr>
<tr>
<td>Bidder's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)</td>
</tr>
</tbody>
</table>

Attached are copies of the following original documents.

1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2.
2. Authorization to represent the firm or JV named in above, in accordance with ITB 20.2.
3. In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1.
4. In case of a government-owned entity, any additional documents not covered under 1 above required to comply with ITB 4.5.
Form ELI - 2: JV Information Sheet

Each member of a JV must fill in this form

<table>
<thead>
<tr>
<th>JV / Specialist Subcontractor Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidder's legal name</td>
</tr>
<tr>
<td>JV Partner's or Subcontractor's legal name</td>
</tr>
<tr>
<td>JV Partner's or Subcontractor's country of constitution</td>
</tr>
<tr>
<td>JV Partner's or Subcontractor's year of constitution</td>
</tr>
<tr>
<td>JV Partner's or Subcontractor's legal address in country of constitution</td>
</tr>
<tr>
<td>JV Partner's or Subcontractor's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)</td>
</tr>
</tbody>
</table>

Attached are copies of the following original documents.

1. articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2.
2. Authorization to represent the firm named above, in accordance with ITB 20.2.
3. In the case of government-owned entity, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5.
**Form LIT - 1: Pending Litigation**

Each member of a JV must fill in this form

<table>
<thead>
<tr>
<th>Pending Litigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ No pending litigation in accordance with Criteria 2.2 of Section III (Evaluation and Qualification Criteria)</td>
</tr>
<tr>
<td>☐ Pending litigation in accordance with Criteria 2.2 of Section III (Evaluation and Qualification Criteria)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Matter in Dispute</th>
<th>Value of Pending Claim in NRS</th>
<th>Value of Pending Claim as a Percentage on Net Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
# Form FIN - 1: Financial Situation

Each Bidder or member of a JV must fill in this form

<table>
<thead>
<tr>
<th>Financial Data for Previous 3 Years [in NRS]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1:</strong></td>
</tr>
</tbody>
</table>

## Information from Balance Sheet

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Total Assets</strong></td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
</tr>
<tr>
<td><strong>Net Worth</strong></td>
</tr>
<tr>
<td><strong>Current Assets</strong></td>
</tr>
<tr>
<td><strong>Current Liabilities</strong></td>
</tr>
</tbody>
</table>

## Information from Income Statement

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Revenues</strong></td>
</tr>
<tr>
<td><strong>Profit Before Tax</strong></td>
</tr>
<tr>
<td><strong>Profit After Tax</strong></td>
</tr>
</tbody>
</table>

- Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last three or above years, as indicated above, complying with the following conditions.
- All such documents reflect the financial situation of the Bidder or partner to a JV, and not sister or parent companies.
- Historic financial statements must be audited by a certified auditor.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

**Note:**

*In case of e-submission the attachments should not be uploaded but shall be submitted on notification by the Employer as per ITB 27.1*
**Form FIN - 2: Average Annual Construction Turnover**

Each Bidder or member of a JV must fill in this form.

The information supplied should be the Annual Turnover of the Bidder or each member of a JV in terms of the amounts billed to clients for each year for work in progress or completed to NRs at the end of the period reported.

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
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</tbody>
</table>

- **Average Annual Construction Turnover**  
  (Best three years within the last 10 years)
Form FIN - 3: Financial Resources

Specify proposed sources of financing, as “lines of credit”, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section III (Evaluation and Qualification Criteria).

<table>
<thead>
<tr>
<th>No.</th>
<th>Source of financing</th>
<th>Amount (in NRS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td></td>
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</tr>
</tbody>
</table>

Note: The letter from the Bank must be in the prescribed format and stated details/terms and conditions as per the Bid Forms “Letter of Commitment for Bank’s Undertaking for Line of Credit”

Form FIN - 4: Bid Capacity

Each Bidder or member of a JV must fill in this form

Bid Capacity = [(7 x A) – B]

A = Average Annual Turnover of best three years out of last ten fiscal years.  
B = Annual Value of the existing commitments and works (ongoing) to be completed, calculated from FIN-5.

<table>
<thead>
<tr>
<th>SN</th>
<th>Name of Bidder</th>
<th>Pan No.</th>
<th>A, in Million</th>
<th>B, in Million</th>
<th>Bid Capacity, in Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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<tr>
<td>3</td>
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</tr>
</tbody>
</table>

Total Bid Capacity:

Signature of Bidder
Form FIN-5: Current Contract Commitments / Works in Progress

Bidders and each partner to 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.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Contract</th>
<th>Name of the Contractor/s</th>
<th>Employer’s Contact Address, Tel, Fax</th>
<th>Contract Share % (a)</th>
<th>Contract Amount in Millions (b)</th>
<th>Contract Date (yyyy-mm) (c)</th>
<th>Initial or Revised Contract Duration (months) (d)</th>
<th>Value of outstanding works [In Millions, NRS] (e)</th>
<th>Estimated Time in Month to Complete the outstanding works (f) = (c) + (d) – Date of Invitation of Bid</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Signature of Bidder

# The Outstanding Works means Contract Price (excluding Vat) minus Work Evaluated by Employer till the reference date.

Note 1: “B” shall be calculated as: 
\[ B = \sum \left( \frac{(e) \times (a)}{(f)} \right) \times 12 \], If (f) is less than 12, then value of (f) shall be taken as 12.

Note 2: If Initial or Revised Contract Date is run out with respect to Date of Invitation of Bid, the Estimated Time in Month to Complete the outstanding works shall be taken equal to 12 months.
Form EXP - 1: General Construction Experience
Each Bidder or member of a JV must fill in this form.

<table>
<thead>
<tr>
<th>Starting Month Year</th>
<th>Ending Month Year</th>
<th>Year</th>
<th>Contract Identification and Name and Address of Employer Brief Description of the Works Executed by the Bidder</th>
<th>Role of Bidder</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
# Form EXP - 2(a): Specific Construction Experience

Fill up one (1) form per contract.

<table>
<thead>
<tr>
<th>Contract of Similar Size and Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contract No………… of…..</strong></td>
</tr>
<tr>
<td><strong>Award 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>If Partner in a JV or subcontractor, specify participation of total contract amount</strong></td>
</tr>
</tbody>
</table>

**Employer’s Name**
**Address**
**Telephone/Fax**
**Number**
**E-mail**

**Description of the similarity in accordance with Criteria 2.4.2 (a) of Section III**

**Note:**
*The Employer should insert here contract size, complexity, methods, technology, or other characteristics as described in Section VI (Work Requirements) against which the bidder demonstrates similarity in the box on the right-hand-side.*
Participation as Prime contractor, management contractor, or subcontractor, in at least one (1) Contracts within the last ten (10) years, each with a value of at least NRs 50.386 Millions that have been successfully or are substantially completed and that are similar to the proposed works. The similarity shall be based on the physical size, complexity, methods, technology or other characteristics as described in Section VI, Works Requirements. Single entity must meet requirements. In case of joint venture, all partners combined must meet requirements. Document required: Form EXP-2(a)

For this Work, Types of works to be considered as Similar Nature and Complexity are:

1. Construction of River Training Works
2. Construction of Irrigation Projects and water supply projects
3. Construction of Bridges and Piers
4. Construction of Headworks of Hydropower Project (Civil Work)
5. Construction of Road
6. Construction of Building
Form EXP - 2(b): Specific Construction Experience in Key Activities

Fill up one (1) form per contract.

<table>
<thead>
<tr>
<th>Contract of Similar Size and Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contract No............ of.........</strong></td>
</tr>
<tr>
<td><strong>Award 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>If Partner in a JV or subcontractor, specify participation of total contract amount</strong></td>
</tr>
<tr>
<td><strong>Employer's Name</strong></td>
</tr>
<tr>
<td><strong>Description of the similarity in accordance with Criteria 2.4.2 (a) of Section III</strong></td>
</tr>
</tbody>
</table>
| **Note:**
The Employer should insert here production rate(s) for the key activity (activities) subject contract against which the bidder demonstrates in the box on the right-hand-side production rates achieved by him on previous contracts.
For the above or other contracts executed during the period stipulated in 2.4.2(a) above, a minimum construction experience in the following key activities:
1. Earthwork: 437.81 m$^3$/month
2. Concrete works: 111.40 m$^3$/month
3. Reinforcement work: 6.32 Mt./Month
4. Form work: 311.82 m$^2$/month

Single entity must meet requirements. In case of joint venture, all partners combined must meet requirements. Document required: Form EXP-2(b)
<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Index Description</th>
<th>Source of Index</th>
<th>Base Value</th>
<th>Base Date</th>
<th>Employer's Proposed Weighting coefficient Range from</th>
<th>Employer's Proposed Weighting coefficient Range to</th>
<th>Bidder's Proposed Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-Adjustable(A)</td>
<td></td>
<td></td>
<td></td>
<td>0.15</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Labor (b)</td>
<td>&quot;National salary and wage rate index&quot;-&quot;construction labour&quot; of NRB</td>
<td>0</td>
<td>Bid Submission date - 30 days</td>
<td>0.15</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Materials (c)</td>
<td>&quot;National wholesale price index&quot;-&quot;construction materials&quot; of NRB</td>
<td>0</td>
<td>Bid Submission date - 30 days</td>
<td>0.3</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Equipment usage</td>
<td>&quot;National wholesale price index&quot;-&quot;Machinery and Equipment&quot; of NRB</td>
<td>0</td>
<td>Bid Submission date - 30 days</td>
<td>0.2</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(d)</td>
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<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>1</strong></td>
<td></td>
</tr>
</tbody>
</table>
SECTION-V

Eligible Countries
ELIGIBLE COUNTRIES

[This section contains the list of eligible countries. Select one option, either GoN Funded or DP Funded.]

For GoN funded: [with estimate upto NRs. 1 Billion]
For the purpose of ITB 4.2: “Nepal”; and
For the purpose of Country of Origin ITB 5.1 and GCC 79.2: “all Countries”

For DP funded: [attach list as per their list of eligible countries]
Part II: Bidding Procedures
SECTION-VI

Works Requirements
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CHAPTER 1: GENERAL REQUIREMENTS
CHAPTER 1: GENERAL REQUIREMENTS

1.1 Abbreviations

The following abbreviations are used in this specification:

- km: Kilometre
- m: metre
- mm: millimeter
- ha: hectare
- m²: square metre
- mm²: Square millimeter
- m³: Cubic metre
- No: number
- %: percent
- °C: degree Centigrade
- kg: kilogram
- N: newton
- kN: Kilo newton
- US$: Currency of USA
- ISO: International Standard Organization
- BS: British Standard
- IS: Indian Standard
- CP: British Code of Practice
- NRs: Nepalese Currency

1.2 Brief Description of the Works

The Mahakali River Training Project is situated in the Darchula District of the Far-Western Development Region. The project is established after the massive flood of June 2013 causing heavy land erosion, huge property damage in the Khalanga and from Dhaulakot to Lali VDC area. The Project envisaged constructing flood protection works which is divided into two category as first one is Core area covering 4.5 km stretch for construction of Counterfort/Gravity Retaining wall in Khalanga bazaar while the second one at Other area covers about 11.5 km length of different villages of Mahakali municipality and Dhu to Lekam and third one is Tar bazar sanranchhan karyakram, jokhim ukta jilla sadarmukam bachau karyakram, Chainpur, Bajhang. The construction site is located at Jayaprithvi municipality, Chainpur, Bajhang along the left bank of Bauligad River.

Major Components

Construction RCC counterfort wall of height 5m with Boulder Riprap.

1.3 Drawings

1.3.1 Bidding Drawings

The drawings provided with the Bidding Documents shows the general features of the construction works. Additional drawings may be delivered to the Contractor prior to the commencement of the works. The Contractor shall prepare construction and/or shop drawings as stipulated in Sub-Clause 1.3.3 of these Specifications.

1.3.2 Additional Drawings

The drawings attached to the Bidding Documents (hereinafter referred to as “Bidding Drawings”) accompany and form part of the Contract Documents. In addition to the Bidding Drawings, Additional Drawings may be delivered by the Engineer to the Contractor and such drawings shall thereupon become part of the Contract.

During the progress of the work, Additional Drawings will be issued by the Engineer prior to
Technical Specifications

Commencement of the Works and as necessity arises to supplement and/or supersede the Bidding Drawings, and such Additional Drawings shall thereupon become part of the Contract.

The Contractor shall be governed by figures and dimensions as given on the drawings. Where required dimensions are not shown, the Contractor shall obtain such dimensions from the Engineer before proceeding with the construction of the portion of the Works to which they refer. In every case, detailed drawings shall take precedence of general drawings.

The Contractor shall scrutinize such drawings and such further drawings issued from time to time to the Contractor. If any ambiguity, discrepancy or mistake is found in the drawings, the same shall be referred to the Engineer before proceeding with the works, and the Engineer’s decision on resolving such ambiguity, discrepancy or mistake shall be final, conclusive and binding.

Drawings and Calculations to be furnished by the Contractor

Unless otherwise stated in the Contract, the Contractor shall prepare drawings for all Temporary Works to be constructed or supplied and installed by the Contractor or his Sub-Contractor.

The Bidding Drawings and the Additional Drawings delivered by the Engineer will not always be detailed enough for performance of the works. They will show many works only in typical forms supplemented by tables of dimensions. The Contractor shall at his own expense prepare detailed Construction Drawings of the individual works (hereinafter referred to as “Construction Drawings”) based on the Bidding Drawings and the Additional Drawings as needed for performance of the works. All Construction Drawings prepared by the Contractor shall be submitted to the Engineer for his approval.

If required by the Engineer, the Contractor shall also submit calculations to the Engineer for his approval. The drawings submitted by the Contractor shall be clear and complete. The recommendable scales of the drawings are 1:1,000, 1:100, 1:50, 1:20, 1:10, 1:5, 1:2 or 1:1 depending upon the type of drawing and/or details which have to be drawn. Drawings shall be of standard sizes as required by the Engineer.

In addition to the above, the Contractor shall at his own expense prepare reinforcement drawings based on the drawings supplied by the Employer/Engineer as needed for the performance of the works. These reinforcement drawings shall include such bar placing drawings, bar-bending drawings, bar list and any other reinforcement drawings as may be required to facilitate fabrication and placement of reinforcement bars. All reinforcement drawings prepared by the Contractor shall be submitted to the Engineer for his approval.

For all sections of the work to be executed under the Contract, the Contractor shall submit detailed drawings to the Engineer for his approval, including working drawings, shop drawings and specifications. The Contractor shall submit these drawings in four (4) copies to the Engineer for approval unless otherwise specified, and these drawings shall be sufficiently detailed to show:

* The general arrangement and dimensions of all the parts and the size of each and every part of the works to be executed under the Contract.
* The nature of the materials from which various parts are to be made, and
* Details of all construction.

Fabrication, manufacture or construction of any part of the works shall not commence until the drawings have been approved in writing by the Engineer, and thereafter no change shall be made to any drawings so approved without permission of the Engineer. Subsequent changes shall be reported by sending another set of four (4) or specified number of copies of each revised drawing to the Engineer for approval. The approval of Contractor’s drawings by the Engineer shall not relieve the Contractor from any of his liabilities or responsibilities under the Contract.

The Engineer shall check or review the drawings submitted by the Contractor and shall return them with comments or approval to the Contractor. If re-submission of the drawings is required by the Engineer, the Contractor shall re-submit them after necessary modifications.
and corrections until the approval of the Engineer is obtained.

From the approved drawings and calculations, four paper copies and one reproducible copy of each set shall be submitted to the Engineer.

1.3.3 Right to Change Design and Drawings

When additional information regarding foundation or conditions become available as a result of excavation work and further testing, and if found desirable to make changes in the alignment, cross-sections, dimensions or design to confirm to such conditions, the Employer/Engineer reserves the right to make the necessary or desirable changes to the opinion of the Engineer.

1.3.4 “As-Built” Drawings

The Contractor shall submit whole sets of “As-Built” Drawings of the completed Works, clearly printed drawings along with two sets of CD, to the Employer before the expiration of Defect Liability Period.

The “As-Built” Drawings shall clearly show the lines and dimensions of the permanent construction actually made based on the original design and/or change of design from time to time ordered by the Engineer or proposed by the Contractor and approved by the Engineer.

1.3.5 Measurement and Payment

No separate payment shall be made for preparation of all construction drawings, working drawings and shop drawings, drawing details except As built drawings.

Payment for “As built drawings” shall be made in the lump sum basis for the Item No 1.1 of the Bill of Quantities.

1.4 Setting-Out and Survey of the Works

The Contractor shall re-survey the Base Lines, Traverse Points, Bench Marks and confirm the co-ordinates and levels of the Stations before using them for setting out the Works. The Contractor shall immediately notify the Engineer of any discrepancies and shall agree with the Engineer any amended values to be used in the Contract, including replacement of any Stations missing from the original location.

The Contractor shall employ well-qualified and experienced surveyors for the execution of survey and setting-out works. The instruments to be used shall be of a make and type suitable for the intended works and shall be subject to Engineer’s approval.

The Contractor shall be responsible for the setting-out center-lines, longitudinal and cross sections of the ground and position of the structures in accordance with the drawings, and any other setting-out work necessary for the execution of the Works. Before commencing the works for structures, drains etc, the Contractor shall survey and take levels for longitudinal profile and cross sections along the routes/locations in which the works are to be executed out at his own expenses. The Contractor shall use benchmarks approved by the Engineer for such survey works. The surface levels so determined shall be subject to the approved surface levels.

The demarcation of right-of-way and all-necessary preparation connected with it shall be carried out by the Employer.

Along structures, drains, or combination thereof and roads, the Contractor shall install temporary benchmarks at intervals of 250m. Their distance from the centre-line shall be as instructed by the Engineer. The difference in double-levelling as executed for the levelling of the temporary benchmarks shall not exceed 5 mm times the square root of the length of the circuit in km. Ground levels shall be taken jointly by the contractor and the Engineer's representative both prior to commencing and after completion of earth works.

The Contractor shall level and draw the followings for all structures canal, drains, bunds and
roads:

** longitudinal section

** Cross-sections at an interval not exceeding 25 m before and after the execution of the Works. The formation level shall be taken as reference while cross-sections shall cover at least a width as necessary for the Works to be constructed, including related earthworks.

All field-books, calculations, maps, etc. of the survey activities shall be handed over to the Engineer, immediately after the completion of the survey. All field data, derived from the survey activities, entered in the field-books that are handed over to the Engineer, shall also be entered into EXCEL spreadsheet or a compatible spreadsheet in a format approved by the Engineer. The data shall be submitted on a CD.

**No separate payment shall be made to the Contractor for the works to be carried out under this Sub-Clause.**

1.5 Layouts and Schedules Provisional

The locations, levels and dimensions as shown on the Drawings or given in the design data or structure schedules are subject to amendment. The Contractor will be required to undertake surveys for confirmation of alignment and levels of flood embankments and river bank protection. Details of any such amendment or confirmation of the original design will be given by the Engineer or the Engineer's Representative during the course of construction.

1.6 Notice of Operations

The Contractor shall give full and complete written notice of all important operations, including setting out, to the Engineer sufficiently in advance to enable the Engineer to make such arrangements as the Engineer may consider necessary for inspection and for any other purpose. The Contractor shall not start any important operation without the written approval of the Engineer.

1.7 Suppliers of Materials

Before ordering a material for any description intended for the Permanent Works, the Contractor shall submit for the approval of the Engineer the name of the maker or supplier proposed and details of the place of origin and specification of the material. If requested by Engineer, the Contractor shall supply to the Engineer for his retention a copy of any such order place.

1.8 Natural Materials

The Contractor shall make all arrangements for locating, selecting and processing natural materials to comply with the Specification and shall submit to the Engineer for approval full information regarding the proposed location well in advance of commencement of working of the materials. Approval of a source does not imply that all material in that source is approved.

1.9 Disruption of Local Communities

The Contractor shall take all measures necessary to avoid nuisance and disruption to local communities. In particular the Contractor shall ensure no damage is done to crops, pasture or woodland and outside the area for which the Engineer's approval for land clearance has been given, that all irrigation supplies to such areas are maintained and that the Contractor's operations do not cause flooding or pollution hazards.

1.10 Clauses Not Applicable

Any Clause in the Specification which relates to work or materials not required by the Bill of Quantities or subsequently ordered as per the Conditions of Contract shall be deemed not to apply.

1.11 Delay and Increased Costs Due to Floods, Wash-out of Roads or Impassable Roads
Not with standing Clause 28 of the Conditions of Contract no extension of time or increase in the Contract Rates shall be granted to the Contractor if he is delayed or impeded in the completion of the Works or involved in additional costs by flood, high river water levels, wash-out of roads or tracks or impassable roads.

1.12 Supply of Fuel Oils

The Contractor shall be responsible for arranging and ensuring that adequate supplies of high speed diesel oil, motor spirits, kerosene, lubricants and other petroleum products are available at all times to meet his requirements for the purposes of or in connection with the contract; the Contractor's particular attention is drawn to this requirements as from time to time shortages and interruptions in the supply of fuel oils, etc. occur in the region.

1.13 Assistance to Engineer’s Staff

The Contractor shall render all necessary assistance to the Engineer’s staff and shall provide and maintain sufficient number of pegs, poles, paints, survey equipment and tools, straight edges, staging, moulds, templates, profiles and all other requisites for checking the Contractor’s setting-out and the measurement of the Works.

The Contractor shall provide such full time or part time surveyors as may be required. The cost of all labourers, surveyors, survey equipment and tools, and materials required by the Engineer and his staff for checking the setting-out and the measurement of the Works shall be covered by the Contractor’s expense and no separate payment shall be made thereof.

1.14 Standards and Supplemental Specifications

Unless otherwise stated in the Contract, all workmanship, materials, and equipment shall comply with the relevant American, British, German, Nepal and Indian Standard or Code of Practice current on the date fixed for receipt of bids.

Whenever in these documents references are made to particular reference standards or abbreviations thereof, their meaning shall be as listed below and copies of such standards shall be obtained at the Contractor’s expense from the particular organization at the address given:

- **AASHTO** American Association of State Highway and Transportation Officials, Suite 341 National Press Building, Washington D.C., 2004, USA
- **ACI** American Concrete Institute, P.O. Box 4754 Redford Station, Detroit, MI 48219, USA
- **AISC** American Institute of Steel Construction, 101 Park Avenue, New York, NY 10017, USA
- **ASTM** American Society for Testing and Materials, 1916 Race St, Philadelphia, PA 19103, USA
- **AWS** American Welding Society, Inc. 2501 N W 7th St, Miami, FL 33125, USA
- **AWWA** American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235, USA
Wherever reference is made in the Contract to specific standards and codes to be met by the materials, Plant, and other supplies to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards which ensure a substantially equal or higher performance than the standards and codes specified will be accepted subject to the Engineer’s prior review and written approval. Differences between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Engineer at least 30 days prior to the date when the Contractor desires the Engineer’s approval. In the event the Engineer determines that such proposed deviations do not ensure substantially equal performance, the Contractor shall comply with the standards specified in the documents.

**No separate payment shall be made to the Contractor for complying with this Sub-Clause.**

### 1.15 Construction Programme

Within fifteen (15) days from the date of Letter of Acceptance the Contractor shall submit to the Engineer for approval a complete and practicable construction programme showing the orderly performance of the Works. The Contractor shall note that the detailed design will be annually completed prior to commencement of construction works to be executed in the next working season. The Construction Programme shall show in detail the proposed method of operations, including
Purchase and delivery of materials and equipment, as well as the construction. The Construction Programme shall show in a bar chart each major item of the Works and the Temporary Works on separate horizontal lines, sequence of operation and the period required for the completion of each activity. The Construction Programme shall when approved by the Engineer become a part of the Contract.

The particulars supplied by the Contractor with the programme shall include the following details:

ii) a statement giving the numbers and categories of supervisory and technical staff and skilled/unskilled labour to be employed on the Works;

iii) a list and type/details of Contractor’s Equipment (including vehicles) which the Contractor proposes to employ on the Works stating whether they are to be acquired from inside or outside Nepal, including programmed dates for order and delivery;

iv) a list detailing the purchase and delivery of materials and Plant from both inside and outside Nepal;

v) Details of the Contractor’s 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;

vi) a statement and outline layout giving the proposals for location or locations and sizes of constructional camps, accommodation, offices, workshops and stores at the Site; and

vii) details of the programme for the construction of the works from the date of receipt of the Notice to Commence, including a complete resource allocation showing the number of units and allotted times for each unit of Contractor’s Equipment, Plant, materials and labour allocated for each part of the works.

No separate payment shall be made to the Contractor for complying with this Sub-Clause.

1.16 Reports, Meetings and Data of the Works

1.16.1 Site/Work Meetings

The Contractor shall attend all the Site/Work Meetings called by the Engineer.

1.16.2 Audits by the Employer

The Contractor shall note that the Employer shall be entitled at its discretion to conduct audits in respect to:

b costs incurred in the event of termination; and

c 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.

1.16.3 Measurement and Payment

No separate payment shall be made for preparation of all documents, correspondence, returns and reports etc., to be prepared by the Contractor and submitted to the Engineer and/or the Employer in accordance with the provisions of the Contract.

1.17 Protection of Real Estate

The Contractor shall control the movement of his crews and equipment on right-of-way including access routes approved by the Engineer so as to minimize damage to crops and property and shall Endeavour to avoid marring the lands. Ruts and scars shall be obliterated and damage to land shall be corrected and the land shall be restored as neatly as practicable to its original conditions.

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
right-of-way or on approved access roads and deductions shall be made from payment due to Contractor to cover the amount of such excessive or unnecessary damage as determined by the Engineer.

No separate payment shall be made to the Contractor for complying with the stipulations of this Sub-Clause.

1.18 Safety Measures and Public Convenience

The Contractor shall provide necessary protection for all persons and properties at all times. The Contractor shall submit to the Engineer for his approval a “Safety Manual” with full details of safe construction methods. The Contractor shall comply with the stipulations of the safe construction methods specified in the “Safety Manual”, to the extent that such provisions do not conflict with the applicable laws. The Contractor shall take all necessary measures to protect the work and prevent accidents during the construction. He shall provide and maintain sufficient night-lights, barricades, guards, temporary sidewalks, temporary bridges, danger signals, watchmen and necessary alliances and safeguards to properly protect life and property. He shall also protect all excavations, equipment and materials so that the public are not be endangered.

The Contractor shall conduct his operations so as to give the least possible obstruction and inconvenience to traffic. Where existing access road or footpaths are not available for detours, traffic shall be permitted to pass through the work with as little delay and inconvenience as possible, unless otherwise authorized by the Engineer.

The Contractor shall also at all times provide convenient access for all entrances to property abutting the Site and shall maintain them in a clean and tidy position.

No separate payment shall be made to the Contractor in complying with the provisions of this Sub-Clause.

1.19 Existing Cables, Pipe-Lines and Works

1.19.1 Drawings

Drawings with existing power and pipe-line systems within the Contract area are not enclosed in the Contract Documents. Arrangements for a meeting with the relevant authorities concerning the collecting of data of the systems will be made either by the Employer or by the Engineer. The Contractor and representatives of the relevant authorities shall be present in this meeting. Drawings and/or relevant information with an indication of cables and/or pipe-lines will be made available to the Contractor as far as these cables and/or pipe-lines are directly situated within the Contract area. The Contractor shall send a written request to the Engineer before the Commencement of Works in case this meeting is no arranged.

1.19.2 Information and Instructions

Full information and instructions of measures to be taken before and during the execution of the Works, if there are any cable and/or pipe-line systems within the area, will be submitted by the Employer or the Engineer in co-operation with the relevant authorities. In this case, the Contractor shall follow the instructions as given by the Employer or the Engineer.

If necessary, precautions shall be taken by the Contractor to protect the systems during the execution of the Works.

1.19.3 Precautions

No excavating machineshallbeusedintheimmediatesurroundingsofcablesand/orpipe-lines, unless approved by the Engineer. Special care shall be taken to ensure that the systems are accessible in case of emergency.

Temporary Works which have to be made in the surroundings of the system during the execution of works, shall be maintained by the Contractor and shall be removed as soon as practicable.
1.19.4 **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 or not, except where such interference is specifically described as part of the Works either in the Contract or in the Engineer’s instructions.

The Contractor shall at his own expense provide and erect to the approval of the Engineer such supports as may be required to protect efficiently all structures or works which may be endangered by the execution of the Works and shall remove such supports on completion of the Works or otherwise take such permanent measures as may be required by the Engineer 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 which may be caused to these services due to execution of the Works and shall carry out all necessary repairs at his own expense and to the satisfaction of the Engineer.**

1.20 **Temporary Fencing**

If and where required the Contractor shall erect and maintain suitable and approved temporary fencing to enclose such areas of the works and areas of land occupied by the Contractor within the Site as may be necessary to implement his obligations as per the Conditions of Contract. Where temporary fencing has to be erected alongside a public road, footpath, etc., it shall be of the type required by the concerned authorities and shall be erected to their satisfaction.

The Contractor shall fence his labour camps and other compounds and his housing sites in an approved manner so as to exclude all wild or stray animals.

Fences crossed by the Works and forming boundaries of plots outside the area occupied by the Works shall not be cut through or destroyed form or than the distance necessary to permit the erection of new fencing, etc., and the Contractor shall make the ends of the cut fences reasonably secure.

The Contractor shall regularly inspect all such fencing, and any defects which may occur, shall be made good without delay. Temporary Fencing shall remain in position until the Works are completed and the Site cleared of all plant, materials and/or other waste matter. **No separate payment shall be made to the Contractor for complying with the provisions of this Sub-Clause.**

1.21 **Clean Up the Site**

Prior to start of the construction work, the Contractor shall clean up the construction site, remove debris and decayable materials if any. Similarly, prior to the issue of the Taking over Certificate by the Employer the Contractor shall remove from the Site all plant and equipment, tools, rubbish, concrete forms, boulders, bricks, gabion wire pieces and other materials not incorporated in the permanent works. **No separate payment shall be made to the Contractor for complying with the provisions of this Sub-Clause.**

1.22 **Contractor’s Temporary Offices, Workshops, Quarters, etc.**

The Contractor shall be responsible for the land he deems necessary for his offices, stores, warehouse, motor pool, laboratory, workshops, pre-cast concrete factory, screening plants, batching plants, staff quarters and labour camp. The Contractor shall be also responsible for
construction, maintenance, operation and subsequent removal or handing over if the Engineer requests, of such temporary facilities as his office, stores, warehouse, motor pool, laboratory, workshops, pre-cast concrete factory, screening plants, batching plants staff quarters and labourer camps including feeding and accommodation. These facilities shall be equipped with adequate electricity and potable water supplies.

The Contractor shall when requested by the Engineer or the Engineer’s Representative carry out any test in the presence of the Engineer or the Engineer’s Representative, or shall provide all necessary testing engineers, laboratory assistants and labours required to the Engineer free of charge. The Contractor shall ensure that the Engineer and his staff have unrestricted access to these facilities free of any charge.

The Contractor is to arrange for a high standard of sanitation to be maintained throughout the Camp and the Works. He shall construct and maintain at his own cost a system of surface drainage and waste disposal which shall be approved by the Engineer before any work commences. Sanitary conveniences for the use of persons employed in the works shall be provided and maintained by the Contractor in accordance with the appropriate laws and regulations in force in Nepal to the extent and in such a manner and at such places as may be approved by the Engineer, and all persons connected with the works shall be obliged to use them.

The Contractor shall make arrangements according to the regulations in force in Nepal for treatment on the site of casualties and sick persons.

The arrangements shall include the minimum provision of a Dispensary with in-patient facilities with a minimum of four beds, a qualified resident dresser and assistant, and for regular visits by a qualified medical practitioner. The Contractor shall make his own arrangements for treatment of casualties on the Site in such first-aid units as may be thought necessary.

The Contractor shall manage and operate appropriate ambulances for the transportation of injured or sick employees to hospitals in Nepal or India or other places. This facility shall be available for the Employer’s, Engineer’s, Subcontractors’ and Contractor’s personnel and workmen. The Contractor shall enter in the appropriate items in the Bill of Quantities a sum to cover the construction of such first-aid units and their management and operation and the removal by ambulance.

Notwithstanding the minimum requirements prescribed above, the Contractor shall be responsible for the adequacy of all the arrangements made.

The Contractor shall construct, equip and administer at his own cost fire control points in such positions and of such size as will provide an adequate service for the protection against fire of the Camp and all building stores and property on the Site. He shall install and maintain a proper warning system to ensure that fire-fighting equipment can be brought into action without delay.

The Contractor shall install and maintain at his own cost a system of lighting to provide a reasonable degree of illumination over the area of the Contractor’s offices and camp. He shall submit details of his scheme for the approval of the Engineer before any work commences.

No separate payment shall be made to the Contractor for complying with the provisions of this Sub-Clause.

1.23 Contractor’s Transport

The Contractor shall make his own arrangements for the transport where necessary of his staff and workmen to and from the site of the works at his own expenses. No payment shall be made on this item, and such costs in this item are deemed to be covered in the unit rate.

1.24 Construction and Maintenance of Temporary Access Road

The Contractor shall construct and maintain the temporary access roads including temporary
access bridges necessary for construction of the Works and transportation of the materials. The access roads to the borrow pits and for constructing the canals and roads shall be constructed by rehabilitating and reinforcing the existing roads, where available. The access roads shall be constructed in such a manner that all of the temporary access road and bridge ensure the traffic 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 a privately owned 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 the detailed construction programme, and drawings of:

(c) the temporary access roads including temporary access bridges; and
(d) any other temporary works which he considers necessary for proper execution of the works.

The Contractor shall not start the construction of any temporary access road until the Engineer’s 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 programme and shall maintain and repair such roads so as to assure traffic of heavy equipment and trucks throughout the construction period of the works, giving a special attention to watering to the access road(s), unless otherwise specified or directed by the Engineer. On completion of the works such as canal, drain, road, bridge, culvert, etc., he shall remove such access road and bridge from the site as directed by the Engineer.

Payment for construction of temporary access road shall be made on pro-rata basis depending upon the total progress accomplished from Item No 2.1.1.1 of the Bill of Quantities.

1.25 Materials and Supplies to be New and Unused

All materials, Plant and other supplies to be incorporated in the Works shall be new, unused, of the most recent or current models, and incorporate all recent improvements in design and materials unless provided otherwise in the contract.

1.26 Environmental Protection Works

The Environment is defined to mean surrounding area including human and natural resources to be affected by execution and completion of 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 environmental protection. In particular, the Contractor shall fully comply with the environmental protection mitigation measures specified in the related EIA Guidelines published by the Ministry of Forests and Soil Conservation and the Ministry of Environment, Science and Technology (Latest Publications).

The Contractor shall prohibit employees from unauthorized 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:

1.26.1 Borrow/Quarry Sites

The Engineer shall have the power to disallow the method of construction and/or the use of
any borrow/quarry area if in his opinion the stability and safety of the Works or any adjacent structure is endangered, or there is undue interference with the natural or artificial drainage, or the method or use of the area will promote undue erosion.

All areas susceptible to erosion shall be protected as soon as possible either by temporary or permanent drainage works. All necessary measures shall be taken to prevent concentration of surface water and to avoid erosion and scouring of slopes and other areas. Any newly formed channels shall be backfilled.

Borrows/quarries shall be located away from the population centres, drinking water intakes and drainage systems. The cutting of trees shall be minimized. Temporary ditches and/or settling basins shall be dug to prevent erosion. The undesirable ponding of water shall be prevented through temporary drains discharging to natural drainage channels.

Earthworks 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. 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 before opening up any borrows or quarries. Such borrow pits and quarries may be prohibited or restricted in dimensions and depth by the Engineer where:
- they might affect the stability or safety of the Works or adjacent property;
- they might interfere with natural or artificial drainage or irrigation;
- they may be environmentally unsuitable.

At least 14 days before he intends to commence opening up any approved borrow pit or quarry, the Contractor shall submit to the Engineer his intended method of working and restoration. These shall include but not be limited to:

- the location; design and method of construction of any access track;
- the volume and nature of materials to be removed;
- measures for controlling runoff and sediment from the site during operations;
- Proposals for site restoration including approximate finished levels, drainage, erosion and sediment control, slope stabilization and
- re-vegetation, including reinstatement of any access track.

Operation of borrow pit or borrow area shall not be permitted until the method of working for that particular pit or area has been approved by the Engineer in writing. Restoration shall be to the satisfaction of the Engineer.

1.26.2 Disposal of Spoil and Construction Waste

Materials in excess of the requirements for permanent works and unsuitable materials shall be disposed off in locations and in the manner as agreed with the Engineer. The locations of disposal sites shall be such as not to promote instability, destruction of properties and water supply systems. Exposed areas of such disposal sites shall be suitably dressed and be planted with suitable vegetation.

The Contractor shall plan his works in such a way that there is no spillage of petroleum products to the surface or sub-surface water.

No payment shall be made on this item, and such costs in this item are deemed to be covered in the unit rate.
1.26.3 Provision and Maintenance of Camps, Offices, Stores, Equipment Yards and Workshops

Various works defined under this item are related to provision and maintenance of camps for workmen and employees, Contractor’s site offices, stores equipment yards and workshops, etc. These camps shall be adequate, rainproof, spacious, airy and hygienic with proper lighting and materials storage facilities. The area shall be kept neat and clean.

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 regarding proper establishment and maintenance of such camps. Failure in compliance with Engineer’s instruction in respect of overall standard will lead to reduction or withholding of payment.

1.26.4 Reinstatement of Environment

The Contractor shall arrange and execute works as well as related activities in such a way that environmental conditions are reinstated. He may be required to carry out filling, removal and disposal works along with planting of grass and trees at his own costs at identified locations to reinstate environment as directed by the Engineer.

1.26.5 Measurement and Payment

No separate payment shall be made for the cost incurred by the Contractor for complying with the stipulations of this Sub-Clause. All costs including Contractor's margin, overhead, taxes, etc, in connection with this Sub-Clause shall be considered to be included in other items of the works included in the Bill of Quantities.

1.27 Insurances

The Contractor shall be paid the lump sum amount for fulfilling his obligations under Clause 19 of Conditions of Contract Payment shall be made in two installments, 50 percent of the quoted amount for each of the items 1.3, 2.1.4 & 1.5 in each of the installments. The first installment shall be made after furnishing all the documentary evidence of the insurance policy and next installment to the contractor shall be paid on the next year (at the completion of work).

1.27.1 Insurance of Works

For fulfilling his obligations under Clause 19 of the Conditions of Contract, the Contractor shall be paid the lump sum amount of Item No. 1.3 in the Bill of Quantities, which shall be deemed to include the entire Contractor’s costs incidental to providing the specified insurance.

1.27.2 Third Party Insurance

For fulfilling his obligations under Clause 19 of Conditions of Contract, the Contractor shall be paid the lump sum amount of Item No. 1.4 of the Bill of Quantities which amount shall be deemed to include the entire Contractor’s cost incidental to providing the specified insurance.

1.27.3 Insurance against Machine and Accident to Workmen

For fulfilling his obligations under Clause 19 of the Conditions of Contract, the Contractor will be paid the lump sum amount of Item No. 1.5 of the Bill of Quantities which amount shall be deemed to include the entire Contractor’s cost incidental to providing the specified insurance.
1.29 Storage of Materials

Materials shall be stored so as to ensure preservation of their specified quality and fitness for the work. They shall be placed on hard, clean surface, and when required, they shall be placed under cover as approved by the Engineer. Stored materials shall be located so as to facilitate prompt inspection. Private property shall not be used for storage purposes without the written permission of the owner or making good the losses and providing payment to him if necessary. The stockpile site shall be prepared by clearing and levelling as approved by the Engineer.

Aggregate storage piles shall be built up and removed in layers not exceeding 1 m. The height of such stockpiles shall be limited to 5.0 m. The center of the storage areas shall be raised and sloped to the sides, as required to provide proper drainage of excess moisture. The material shall be stored in such a manner as to prevent segregation and to ensure proper gradation and moisture content.

Immediately upon receipt at site of work, cement shall be stored in a dry weather tight, properly ventilated structure with adequate prevention of absorption of moisture. The Contractor’s method of handling and storing of cement shall be to the approval of the Employer’s Representative.

Not more than 13 bags of cement shall be permitted to be piled up and this number shall be limited to 7 bags when the storage is expected to be longer than 2 months. The bags of cement shall be piled up or stored so as to permit easy access for identification, inspection and testing. **No separate payment shall be made to the Contractor for complying with the provisions of this Sub-Clause.**
CHAPTER 2: EARTHWORKS
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2.1 Site Clearance

2.1.1 General

This Specification Section covers clearing, grubbing; and removing of vegetation and other objectionable material from the site and the right-of-way.

2.1.2 Clearing of the site General

Within limits established by the Engineer, the Contractor shall remove all trees shrubs, bushes and other vegetation standing above the ground surface. The roots of all trees and other vegetation shall be removed as approved by the Engineer. Trees designated by the Engineer to remain shall be protected. On the instructions of the Engineer, the Contractor shall demolish and remove all timber buildings, fences and similar structures within the same areas.

Where directed by the Engineer, usable materials and equipment shall be salvaged and handed over to the representative or the Employer. All other material cleared shall be disposed of by burning on site as prescribed below, or by removal to waste beyond the site boundaries. The location of such disposal areas shall be subject to approval by the Engineer before use.

2.1.3 Clearing the right of way

All areas which require clearing for purpose of earthwork and construction, including right of way, borrow areas, stock pile sites and elsewhere as directed by the Engineer shall be cleared of trees, brush, roots, rubbish and other objectionable matter and such materials shall be removed from the site of the work or otherwise disposed of as approved by the Engineer. On the approval of the Engineer, fences, walls, buildings and ruins shall be removed from the same areas.

All materials to be burnt shall be piled neatly and when in a suitable condition shall be burnt completely. Piling for burning shall be done in such a manner and in such locations as to cause the least fire risks. The Contractor shall at all times take special precautions to prevent fire from spreading.

In general, only such trees that would interfere with the construction required under these specifications shall be removed, and trees along the right-of-way shall be left in place to the greatest extent practicable. The Contractor shall dispose of all material cleared as prescribed above.

During the Contractor's operations the removal of certain trees and shrubs outside the right-of-way may be required, in which case the Contractor may remove such trees and shrubs after obtaining prior approval of the Engineer. All trees and shrubs designated to remain in place shall be protected from damage. Any damage to the Works and public or private property caused by the Contractor's operations in clearing and grubbing shall be repaired or replaced by the Contractor at his own cost.

2.2 Excavation Works

2.2.1 Scope

5. This Specification Section covers excavation required for works such as apron, check dam, retaining walls, spurs and embankment protection works.

6. Excavation shall consist of excavation, removal and satisfactory disposal of all materials necessary for the construction of permanent works in accordance with the requirements of the Specification to the lines, grades and cross-sections shown on the Drawings or as otherwise
Technical Specifications

directed by the Engineer. This work shall include the hauling and stacking, or hauling to sites of embankment also the disposal of unsuitable materials in specified manner, de-watering and pumping, and the trimming and finishing of excavation lines to such widths, depths, levels and profiles as shown on drawings or to such other dimensions and levels as may be ordered by the Engineer.

2.2.2 Preliminary Operations

4. Prior to any excavation the work shall be set out as specified in the drawing.

5. Before commencement of excavation a survey of the existing ground levels shall be made by the Engineer. The survey records shall serve as initial measurement for the determination of the final quantities of excavation performed under the Contract, and for related purposes.

6. Clearing and grubbing shall be performed in all excavation areas.

7. Stripping and storing of topsoil shall be performed as specified.

2.2.3 General Requirements

☐ All excavation shall be made in accordance with the provisions stated herein or as directed by the Engineer and to the grades shown on the Drawings or established by the Engineer.

☐ Change of Slopes: During progress of the work it may be found necessary or desirable by the Engineer to vary the slopes of excavation or the slopes of embankments and the dimensions dependent thereon, and the Contractor shall execute the work in accordance with these specifications.

☐ Sliding Material: Materials which will not stand on the slopes shown on the Drawings or established by Engineer, and materials which are a part of slides extending beyond the established lines of excavation which move into excavated areas, shall be removed by the Contractor in an approved manner, and the slopes shall be refinished to lines and grades established by the Engineer. The Contractor shall be required to excavate potential slide areas beyond the limits of the originally staked excavation where, in the judgment of the Engineer, such excavation is necessary to prevent damage to the work.

☐ Excavation lines: Where excavations are not to be covered by structures or other required construction, they shall be made to the full dimensions required and be finished to the neat lines and grades shown on the Drawings or to such other lines and levels determined by the Engineer. All necessary precautions shall be taken to preserve the material below the lines of all excavation in the soundest possible condition. Any over excavation made for the convenience of the Contractor or for any purpose or reason, except as otherwise provided herein, shall be refilled and compacted by the Contractor at his expense.

☐ Use of Material: It is anticipated that most of the materials from required excavations will be suitable for use in the construction required under the Contract. All suitable materials shall be placed in the designated final locations directly from the excavation as directs b the Engineer. As far as practicable, as determined by the Engineer, all materials designated for use in compacted embankments shall be brought to the proper water content before and during excavation.

☐ Subsurface Water: Part of the required excavation will be below the subsurface water level. Any lines of water levels shown on the Drawings can be considered as tentative information only. The Contractor shall not be entitled to derive and claim there from and he shall select his equipment and programme, his constructional operations and the timing of these operations so as to complete the works to the satisfaction of the Engineer.

☐ Surface Water: The Contractor shall take all, necessary precautions to protect the work from surface water by constructing provisional bunds drains or similar means, or by pumping, as may be approved or directed by the Engineer.

☐ Whenever it becomes necessary during the course of the work to determine the volume of excavation in channels which are filled or partially filled with water, the Contractor shall
furnish and maintain the required equipment for measuring and shall assist the Engineer in making such measurements.

p  Spoil Banks: Excavated materials containing stumps, roots, vegetable matter and other objectionable materials and excavated materials that are not required for backfill, embankments and other permanent construction shall be placed in designated spoil banks in waste areas designated by the Engineer. Spoil banks adjacent to the embankments shall be continuous except for gaps at suitable intervals for transverse drainage as shown on the Drawings or as directed by the Engineer. All spoil banks and waste areas shall be levelled and sloped to drain and trimmed to reasonably regular lines as shown on Drawings or as directed by the Engineer.

2.2.4 Preparation of Foundation

p  Upon completion of the excavation of the lines and levels shown on the Drawings or directed by the Engineer, the foundation shall be inspected by Engineer and the formation shall be prepared to receive the base course as directed by the Engineer.

q  Where material in a poor state of compaction (that is density less than 95 percent of the maximum dry density determined according to IS: 2720 - Part VII) is encountered at the foundation level it shall be treated suitably as directed by the Engineer.

r  The bottom of the foundation shall be levelled both longitudinally and transversely or stepped as directed by the Engineer. In the event of the foundation having been made deeper than that shown on the drawings or as otherwise ordered by the Engineer, the extra depth shall be made up with riverbed materials to the foundation grade at the contractors cost.

s  When rock or other hard stratum is encountered, it shall be left free of all soft and loose material, cleaned out to a firm surface either level, stepped or separated as directed by the Engineer.

2.2.5 Finishing Operations

p  Finishing operations shall include the work of properly shaping and dressing all excavated surfaces.

q  When completed, no point from the slopes shall vary from the designated slopes by more than 150 mm measured at right angles to the slope, except where excavation is in rock (hard or soft) where no point shall vary more than 600mm from the designated slope. In no case shall any portion of the slope encroach on the finished lines of structures.

r  The finished cut formation shall satisfy the surface tolerance as prescribed by the Engineer.

s  Where directed, the topsoil removed earlier and stored shall be spread over cut slopes, embankments and other disturbed area. Slopes may be roughened and moistened slightly prior to the application of topsoil in order to provide satisfactory bond. The depth of topsoil shall be sufficient to sustain plant growth, the usual thickness being 75mm to 150 mm.

2.2.6 Measurement and Payment

p  Measurement

p  Excavation shall be measured by taking cross sections at suitable intervals in the original position before the work starts and after its completion and computing the volume in cubic meters by the method of average end areas. Where it is not feasible to compute volumes by this method because of erratic location of isolated deposit, the volume shall be computed by other accepted method.

q  At the option of the Engineer, the Contractor shall leave depth indication during excavation of such shape and size and in such positions as directed so as to indicate the original ground level as accurately as possible. The Contractor shall see that these remain intact the final measurements are taken.
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- Excavation shall be measured in cubic meters for the respective features, limited to the dimension shown on the Drawings or as otherwise directed by the Engineer

1) Payment

(1) Payment for the excavation of all types of material shall be made at the Contract unit rates tendered there for in the item no 2.1.1.2 of the Bill of Quantities. The Contract unit rates for the items of excavation shall include full compensation for the following operations:

Site clearance where the Bill of Quantities contains no item for clearing and grubbing in the Schedule.

Assistance in setting out profiles.

Removal of boulders including loosening to required depth for the removal of surface boulders and other unsuitable materials if any backfilling and compacting, if required.

Excavation in all types of materials.

Transportation of the excavated material and depositing on the sides of embankments, banks or stacking as directed.

2.2.7 Use and Disposal of Material from foundation excavation

A. Excavated materials that are suitable for permanent construction shall be placed in the embankment.

B. Excavated material that is unsuitable for permanent construction in accordance with embankment shall be wasted in spoil areas, used as cover for cleared vegetation disposed of by burying, or placed in spoil areas that will require no compaction other than that derived by routing the construction equipment over the fill.

2.2.8 Borrow Excavation

Materials for the embankment shall be materials from mixtures of clayey and silty gravel, gravelly silt, clayey silt and silty clay portion of the borrow areas.

2.2.9 Borrow Pits

Borrow pits shall be located in places approved by the Engineer, but shall not be permitted within one meter of the toe of a completed bund, spur, guide bank or other work in the case of shallow borrow pits unless some other distance is specified herein or on the Drawings.

In general where material is not available from adjacent area, suitable fill material may be gleaned by excavating to a shallow depth, not greater than 65 cm below original ground (15cms of top soil and maximum 50cms of borrow material), over areas approved by the Engineer near to the embankments, the contractor shall be fully responsible for temporary acquisition, payment of compensation if any.

The bottom of all borrow pits shall, when the works are completed, be left clean and level to a tolerance of +150 mm - 0 mm, so as to be suitable for return to agricultural or any other use, and free draining so as not to stagnate rain water on the borrow area. Side slopes of these borrow pits shall be graded so as not to encroach private property by erosion or inadequate drainage.

Before any borrow pit is excavated for a bund, the site thereof shall be cleaned, by and at the cost of the contractor, of all trees, jungle, grass and vegetable mould to the satisfaction of the Engineer, and such shall be disposed of to his instructions. As far as is practicable, the moisture content of materials shall be conditioned in the borrow pit before excavations.
Where deeper borrow pits are permitted by the Engineer these shall not be continuous over lengths of more than 200 m. Between lengths shall be left a strip not less than 10 m wide at the level of the original ground. The sides of borrow pits shall be sloped to avoid instability. Requirements for pits to be levelled and left free draining shall be as shallow borrow pits.

The borrow pits shall not be measured for payment for excavation. The cost of excavation from borrow areas for embankment formation shall be deemed to be included in the unit cost of embankment formation.

2.3 Embankment Works

2.3.1 General Description

a) This Specification Section covers foundation preparation and construction of embankments including the requirements for quality assurance, construction equipment and overall construction preparation and procedures.

b) The embankment shall be constructed in accordance with the Specification and as shown on the Drawings; except that pursuant to the Contract provision for "Variation", the Engineer may modify, vary or change the dimension lines of the embankments.

2.3.2 Quality Assurance Test

- The Engineer will take soils samples and perform gradation and moisture content tests to ascertain that the work is being performed in compliance with the Specification. The Engineer will, in addition, conduct density and other tests on the fill and related laboratory testing. Tests will be made as frequently as the Engineer considers necessary. The Contractor shall remove surface material render assistance as necessary to enable sampling and testing. Precautions shall be taken to protect testing personnel from injury due to construction operations while they are performing testing operations on the embankments.

- The Engineer may direct that inspection trenches or test pits be cut into the embankments to determine that the Specification has been met. Such trenches or pits will be of limited depth and size, and shall be backfilled with the material excavated there from of other embankment material meeting the requirements for the embankment cut into. Backfill shall be compacted to a density at least equal to that of the continuous embankment.

2.3.3 Material

Materials for embankments shall be obtained from excavation for permanent construction borrow areas as specified in excavation above. Physical characteristics and composition of materials as well as their source that will determine their final position in the embankments shall meet the requirements specified below.

2.3.4 Compaction Equipment

a) General

b) Compaction equipment shall conform to the requirements specified herein. The compaction equipment shall be maintained in first class condition at all times and, upon direction of the Engineer, any adjustments necessary to obtain the required compaction shall be made immediately.

c) Compactors for embankment materials shall be tamping rollers.

d) When rollers are operated in sets or tandem, or sets of rollers are operated one behind the other in the same track, all rollers operated in this manner shall be of the same dimensions, widths, weights, and operating characteristics. Equipment used to pull rollers shall have sufficient power to pull the rollers satisfactorily when the rollers are subjected to the specified weight.

a) Tamping Rollers

a) Tamping rollers shall each consist of a heavy-duty cylindrical unit with a cylinder diameter of
not less than 1.52 meters and an individual roller length of not more than 1.83 meters. Each roller shall have staggered feet uniformly spaced over the cylindrical surface such as to provide approximately Stamping feet for each 0.186 square meter of roller surface. The tamper feet shall be 178 to 254 mm in clear projection from the cylindrical surface of the roller and each foot shall have a contact face area of not less than 32 cm² nor more than 64.5 cm². The roller shall be equipped with cleaning fingers, designed to prevent the accumulation of material between the tamping feel, and these cleaning fingers shall be maintained at their full length throughout the periods of use of the roller. The weight of the roller alone, or roller plus ballast shall not less than 5950 kg per meter of roller length. The design and operation of the tamping roller shall be subject to approval of the Engineer. The Engineer shall have the right at any time during the prosecution of the work to direct such repairs to the tamping feet and minor alternations to the roller as may be found necessary to secure optimum compaction to tire earth fill materials.

a) The roller shall be self-propelled or pulled by a crawler-type tractor at speeds not to exceed 11 kilometers per hour.

2.3.5 General Construction Procedures

a) Embankment shall not be placed on any portion of the foundations or against or upon any structure until the Engineer has approved such portions and structure. The Engineer will furnish the Contractor written designation of approved foundation area. Any damage to an approved foundation surface shall be repaired as directed by the Engineer prior to placement of embankment.

b) No brush, roots, stumps, sod or other organic or unsuitable materials shall be placed in the embankments. The suitability of all materials for use in construction will be determined by the Engineer. Work shall be scheduled so that excavated material may be hauled directly to its permanent location; however, when this is impracticable, the material may be placed in temporary stockpiles at the Contractor's expense and subject to the approval of the Engineer. In general, the Engineer will designate the locations or area on which fills are to be placed. The embankment shall be continuously maintained in a manner satisfactory to the Engineer until the final completion and acceptance of the Embankment.

c) Material incorporated into embankment and determined by the Engineer to be in violation of Specification requirements shall be removed from the embankment. Unless otherwise specified, blending of materials for purposes of modifying the material to meet the Specification gradation requirements will not be permitted on the embankments, and such blending shall be performed at the excavation site or in stockpiles away from the embankments.

d) All placement of embankment material shall be performed in the dry.

e) Unless otherwise specified or specifically permitted by the Engineer, embankment shall be constructed in continuous and approximately horizontal layers for their full length and width.

f) Haul routes may be constructed across embankment slopes provided that they do not adversely affect the stability of the slopes. Haul roads across embankment slopes shall be obliterated. Unless otherwise specified or directed by the Engineer, obliteration of haul roads shall consist of eliminating the roadway fills by grading the materials to blend smoothly into the surrounding embankment contours.

2.3.6 Preparation of foundation for embankment

b) After completion of required excavation operations the ground surface below all embankments to be constructed as shown on the drawings or as may be directed by the Engineer thoroughly to a depth of not less than 15 centimeters (or the top-soil may be stripped to a depth of 15-15 centimetres and discarded as the Engineer may require). The materials shall then be moistened/dried if so required by the Engineer, and shall be compacted together with the first layer of the embankment to the satisfaction of the Engineer. Except for stripping unsuitable material under embankment the cost of all works described herein for preparation of ground
surface shall be included in the unit rate quoted in the Bill of Quantities for the construction of embankment.

a) Where so directed by the Engineer, an unsuitable material occurring in the embankment foundation shall be removed and replaced by approved materials suitably compacted.

b) Surface upon or against which the portions of the embankment are to be placed shall be cleaned of all loose and objectionable materials in an approved manner by hand work or other effective means immediately prior to placing the first layer of embankments. Each portion of the foundation, immediately prior to placing the embankment, shall have all water removed from depressions and shall be properly moistened and sufficiently cleaned to obtain a suitable bond with the embankment.

2.3.7 Placing and Compaction

1. General

The material to be compacted shall be deposited in horizontal layers of not more than 15 centimetres after being compacted, and the distribution of materials shall be such that the compacted material will be homogeneous and free of lenses, pockets, streaks or other imperfections. The excavation and placing operations shall be such that the materials and layers when compacted will be blended sufficiently to secure the best practicable degree of compaction, impermeability and stability. The material in compacted embankments shall be compacted by tamping rollers with the specified tampers until the dry density of the compacted materials is not less than 95% of the laboratory maximum dry density as determined by the Standard Proctor Compaction Test, for the materials being compacted. Successive layers of embankment shall not be placed until the layer under construction has been thoroughly compacted as specified. Clods or hard lumps of earth shall be broken before the materials in the embankment fill are rolled and compacted, to have maximum size of 150 mm when being placed in the layer of the embankment and a maximum size of 60 mm when being placed in the top 0.5 meter portion of the embankment.

2. Compaction

All methods of compaction employed by the Contractor for this purpose are subjected to the Engineer’s approval. The Engineer with the aid of the contractor and with suitable equipment provided by the Contractor shall test the compaction achieved and where in the Engineer's opinion the compaction does not meet the requirements, the Contractor shall recompact or replace the embankments at no extra cost to the Employer as may be directed by the Engineer. When density measurements reveal the soft areas in the embankments, further compaction shall be carried out as directed by the Engineer. If in spite of that the specified compaction is not achieved, the material in soft areas shall be removed and replaced by approved material, compacted to the density requirements and satisfaction of the Engineer. All permanently exposed surfaces shall, after compaction to oversize as may be necessary are trimmed and finished to a uniform profile and appearance.

3. Moisture Content

6. Moisture content of the material shall be checked at the source of supply and if found less than that specified for compaction, the same shall be made good either at the source or after spreading the soil in loose thickness for compaction. In the latter case water shall be sprinkled as directed on the material. Flooding shall not be permitted under any circumstances. The water for this requirement shall be furnished by the Contractor.

7. If the material delivered at the site is wet, it shall be dried by aeration and exposed to the sun, until the moisture content is acceptable for compaction. Should circumstances arise, where owning to wet weather, the moisture content cannot be reduced to the required amount by the above procedure, work on compaction shall be suspended.

8. Moisture content of each layer of soil shall be checked in accordance with IS:2720 (Part II), and unless otherwise mentioned, shall be so adjusted, making due allowance for evaporation losses, that at the time of compaction it is in the range of 1 percent above to 2 percent below...
the optimum moisture content determined in accordance with IS:2720 (Part VII). Highly expensive clays shall, however, be compacted at 2 to 4 percent above the optimum moisture content.

a) After adding the required amount of water, the soil shall be processed by means of harrows, rotary mixtures or as otherwise approved until the layers are uniformly wet.

1. Finishing Operations

7. Finishing operation shall include the work of shaping and dressing the slopes to conform to the alignment, levels, cross-sections and dimensions shown on the drawings or as directed by the Engineer. Both the upper and lower ends of the side slopes shall be rounded off to improve appearance and to merge the embankment with the adjacent terrain.

8. In case it is not to be covered by riprap, the soil, removed and conserved earlier, shall be spread over the fill slope as directed by the Engineer to facilitate the growth of vegetation. Slopes shall be roughened and moistened slightly prior to the application of the topsoil in order to provide satisfactory bond. The depth of the topsoil shall be sufficient to sustain plant growth, the usual thickness being from 75 to 150 mm.

9. Where directed, the slopes shall be turfed with sods in accordance with turfing provisions. If seeding and mulching of slopes is prescribed, this shall be paid for in accordance with the “Variation” provisions of the Conditions of Contract.

10. Where directed or shown on drawing the embankment guide banks shall be pitched with stones and boulders over a layer of filter operations that have been substantially completed. The work area shall be cleared of all debris and ugly scars in the construction so that any objectionable appearance is eliminated.

2.3.8 Embankment Construction under special condition

a) Backfill/Embankment around Structures

1. Backfill/Embankments about any structures shall be considered incidental to the embankment construction and shall be placed to the lines shown on the Drawings, as prescribed in this paragraph, or as directed by the Engineer. The type of material used for backfill, the amount thereof, and the manner of deposition of the material shall be subject to approval. In so far as is practicable, backfill material shall be obtained from material moved in excavating for structures, but when sufficient suitable material is not available from this source of adjacent excavation, additional material shall be obtained from approved borrow pits.

2. Backfill around or on sides of any structures or portions of structures shall be compacted to slopes shown on the Drawings from the top of the concrete wall, provided that where the structure is located in compacted embankment, the backfill shall be compacted to the elevation prescribed for the adjacent compacted embankments.

3. To avoid interference with the construction of abutments, wing walls or return walls, the Contractor shall, at points to be determined by the Engineer, suspend work on embankments forming approaches to such structures, until such times as the construction of the latter is sufficiently advanced to permit the completion of approaches without the risk of interference or damage to the works.

4. Unless directed otherwise, the filling around the structures shall be carried out independent of the work on the main embankment. The fill material shall not be placed against any abutment or wing wall unless permission has been given by the Engineer, but in any case, not until the concrete or masonry has been in position for 14 days. The embankment shall be brought up simultaneously in equal layers on each side of the structure to avoid displacement and unequal pressure. The sequence of work in this regard shall be approved by the Engineer.

5. The material used for backfilling shall not be an organic soil of highly plastic clay having plasticity index and liquid limit more than 20 and 40 respectively when tested according to IS:2720 (Part V). The fill material shall be deposited in horizontal layers not exceeding 150 mm in loose thickness and compacted to the same density as specified for the embankment.
Where the provision of any filter medium is specified behind abutment, the same shall be laid in layers simultaneously with the laying of fill material. Filter material shall consist of sand, gravel or crushed stone free from dirt, decomposed and cohesive material obtained from approved sources. The material used in the sand/gravel filter shall comply with the appropriate grading tabulated below and shall be compacted in layers of thickness specified on the drawings or as directed by the Engineer.

<table>
<thead>
<tr>
<th>Sieve size</th>
<th>Sand Filter</th>
<th>Gravel Filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>20mm</td>
<td>85</td>
<td>100</td>
</tr>
<tr>
<td>10mm</td>
<td>50</td>
<td>85</td>
</tr>
<tr>
<td>2.36 mm</td>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>0.10 mm</td>
<td>85</td>
<td>0</td>
</tr>
<tr>
<td>0.075mm</td>
<td>0</td>
<td>15</td>
</tr>
</tbody>
</table>

If during construction the grading of the filter material is found to differ from that used in the initial filter design then the grading shall be amended as necessary. The cost of any such revision shall be included in the Contract rates.

The thickness of filter material shall be 300 mm comprising of graded gravel 200 mm and graded sand 100 mm. The graded gravel layer shall be placed in contact with the coarser surface and the graded and in contact with the finer surface as directed by the Engineer.

1. Where it may be impracticable to use the specified tampers the compaction shall be carried out by special compactors as specified above. Care shall be taken to see that the compaction plant does not hit or come too close to any structural member so as to cause any damage to them or excessive pressure against the structures.

2. In placing and compacting backfill or embankment adjoining concrete pipes or small structures, sufficient material shall be carefully placed and compacted in layers equally along the sides of the pipes or structures in order to firmly establish line and grade before placing and compacting the adjoining embankment. The Contractor shall be responsible for any damage to structures caused by this operation in placing or compacting embankment of backfill material: adjoining to structure, and shall repair damage to the full satisfaction of the Engineer. Construction traffic shall not use the prepared surface of the embankment without the prior permission of the Engineer. Any damage arising out of such use shall, however, be made good by the Contractor at this own expense.

2.3.9 Testing of Material used and Compaction Control

1. **Borrow Material**

   Moisture Content Test (IS: 2720 Part I) One test for every 1000 cu. meters of soil or as directed by the Engineer.

2. **Compaction Control**

   Control shall be exercised by taking at least one measurement of density for each 1000 square meters of compacted areas, a minimum of three tests per day/shift/lift pit to evaluate a day’s work on statistical basis. The determination of density shall be in accordance with IS: 2720 Part XXVII)

   Test location shall be chosen only through random sampling techniques. Control shall not be based on the result of any one test but on the mean value of a set of 5-10 density determinations. The number of tests in one set of measurements shall be 5 as long as it is felt that sufficient control over borrow material and the method of compaction is being exercised. If considerable variations are observed between individual density results, the minimum number of tests in one set of measurement shall be increased to 10. The acceptance of work shall be subject to the conditions that the mean dry density equals or exceeds the specified...
density and the standard deviation for any set of results in below 0.08gm/cc.

1. However, for material in the top 500 mm portion of the embankment below the top finished surface, at least one density measurement shall be taken for every 500 sq. meters of the compacted area provided further that the number of tests in each set of measurements shall be at least 10. In other respects, the control shall be similar to that described earlier.

2.3.10 Measurement and Payment

A. Measurement of the quantity of materials shall be made in cubic meter for the compacted volume in the embankment or backfill. Embankment and backfill construction shall be measured by taking cross sections at intervals in the original position before the work starts and after its completion and computing the volumes of embankment in cubic meters by the method of average end areas.

B. The measurement of embankment to filling will be carried out as per embankment of filled section established after proper compaction as specified. For the work of embankment filling no separate payment will be given for borrow excavation.

C. The Contract unit rate for the embankment above the excavation line shall be paid in unit rates per cubic meter from the item no 2.1.1.2 of Bill of Quantities and the quantity of embankment below the excavation line

D. i.e. structural backfilling shall be paid in unit rates per cubic meter from the item no. 2.1.1.7 of Bill of quantities regardless of the methods and the type of equipment used for haulage, including loading and unloading the materials and shall include the following:

A Setting out;
B Compacting original ground;
C Scarifying or cutting continuous horizontal benches 0.20 m wide on side slope of existing embankment of slopes as applicable;
D Compaction to specification requirements;
E Shaping and dressing top and slopes of the embankment and backfill including rounding off corners;
F Working on narrow widths of embankments;
G Restricted working at sites of structures;
H Excavation in all soils from designated borrow areas and transporting the material to embankment site within all lifts and leads;
I All labour, material, tools, equipment and incidentals necessary to complete the work to the Specification.
CHAPTER 3: CONCRETE WORKS
CHAPTER 3: CONCRETE WORKS

3.1 General
B. Standards and Codes of Practice
C. All concrete work shall be carried out in accordance with British Standard BS 8110 unless otherwise specified herein.
D. Costs of Testing and Sampling of Concrete and Concrete Materials
E. The costs of all sampling, transport of samples and testing in connection with the concrete shall be in accordance with chapter 2 or the Specification and where such costs are to be borne by the contractor they shall be included in and covered by the contract rates for concrete.
F. Failure to Meet Specified Requirement
G. If the specified requirements have not been met, the contractor shall take such remedial action as the Engineer may order, and shall before proceeding further with Concreting, submit for their approval details of the action proposed to ensure that the concrete still to be placed in the works will comply with the Specification.

3.2 Concrete Material
3.2.1 Cement
A Quality and type
The cement used in the works shall be ordinary Portland cement complying with BS 12. For the purposes of cement testing under BS 12, the site shall be deemed to have a tropical climate.
B Packing
The cement shall be packed in six-ply paper bags or polythene lined, polypropylene bags of approved quality and the net mass of each bag shall be 50 kg. The permissible tolerance on the mass of cement supplied in bags shall be +2.5% per bag with and overall tolerance of +0.5% per 10 tonnes wagon load of bagged cement.
C Transport and storage
The method of delivery, transport, handling and storing shall be subject to the approval of the Engineer.

The cement shall be delivered to the site in good condition and shall be kept dry at all times until used in the works. The contractor shall be responsible for all risks of damage to the cement by water or otherwise. Defective, damaged or condemned cement shall be removed without delay from the site.

On delivery at the site, the cement shall be stored in suitable thoroughly dry and well ventilated sheds with raised timber floors. Each consignment shall be kept separate and suitable labels or markings shall be made on the bags to distinguish the consignment. Bagged cement shall not be stacked more than 10 bags high.
Technical Specifications

D. Records, certificates and samples

Prior to delivery to the site, the contractor shall supply to the Engineer the manufacturer's test certificate for each consignment of cement received at the site as provided for in clauses 10 and 12 of BS 12. When each consignment is delivered to the site, the contractor shall hand to the Engineer a statement showing the number of the consignment, the name of the manufacturer, the number of tonnes in the consignment and the number of bags.

The contractor shall forward a weekly report to the Engineer giving full particulars of the various consignments in store.

The contractor shall maintain a record available for inspection by the Engineer of the locations of concrete made from each consignment.

The contractor shall supply samples of cement for test and send them for testing by the inspecting Engineer when requested by the Engineer both from the contractor's store on site and from the place of manufacture.

3.2.2 Aggregates

A. Supply and Classification

The contractor shall make his own arrangements for procuring, crushing, grading and delivering aggregate for the Works as required from sources to be approved by the Engineer.

Separate fine and coarse aggregates shall be used for the manufacture of concrete. The term "fine aggregate" is used to designate aggregate mainly passing a 5.00 mm. BS 410 test sieve and containing only so much coarser materials as is permitted for the various grading zones given in Table 1.2. The term 'coarse aggregate' is used to designate well graded aggregate mainly retained on a 5.00 mm, BS 410 test sieve and mainly passing a 37.50 mm, BS 410 test sieve and only containing such coarser or finer materials as is given in table 1.1

Coarse aggregate shall be supplied in the following primary sizes:

<table>
<thead>
<tr>
<th>Size designation</th>
<th>Normal size range</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>5 mm to 10mm</td>
</tr>
<tr>
<td>20</td>
<td>5mm to20mm</td>
</tr>
<tr>
<td>40</td>
<td>5 mm to 40mm</td>
</tr>
</tbody>
</table>

Aggregates shall be graded to produce a workable dense concrete.

F. Quality

All aggregates to be used in concrete shall be clean, hard, dense, sound, chemically inert, of limited porosity and uncoated particles free from clayey or organic matter.

Aggregates for concrete shall comply with BS 882: Part 2 and the followings

Grading: In accordance with Table 1.1 and 1.2 herein

Mechanical properties: When tested in accordance with BS 812, Part 3 the 'ten percent fines value' shall be not less than 50 kN

Silt, clay and dust fraction: When determined in accordance with the decantation method given in BS 812, Part 1 the silt clay and dust fraction by weight shall not exceed 1% for coarse aggregates, 3% for natural sand and 15% for crushed sand.

Water Absorption: When tested in accordance with BS 812 Part 2 the water absorption after 24 hours shall not exceed 4%.

Aggregate impact value: When determined in accordance with BS 812 Part 3 shall not exceed 45%.
Technical Specifications

Soundness: When tested in accordance with the sodium sulphate soundness test specified in ASTM C88 the aggregate shall have a percentage loss of less than 15%

Alkali-aggregate reactivity: When tested in accordance with ASTM C-289 aggregates exhibiting evidence of alkali aggregate reactivity will not be acceptable unless the Contractor can show that the proposed cement aggregate combination, when tested in accordance with ASTM C227 or other tests, will not produce deleterious alkali-aggregate reactivity, as to which the Engineer shall be the sole Judge.

Shrinkage: When determined in accordance with the BRE digest 35 tests the drying shrinkage shall not exceed 0.065%.

Mica Content; shall not exceed 1% by weight or as otherwise approved by the Engineer.

A Testing

Testing of aggregates is to be in accordance with BS 812 or as specified herein.

For each source of aggregate and at least six weeks prior to the preparation of trial mixes samples of aggregates together with the results listed below shall be submitted to the Engineer for approval of the sources of aggregate and quality

Grading analysis, BS 812, Part 1.

Mechanical Properties. Ten percent fines value test to BS 812, Part 3. Specific gravity and water absorption to BS 812, Part .2.

Flakiness and elongation indices to BS 812, Part 1.

Approval of a source of aggregate by the Engineer shall not be construed as constituting the approval of the materials to be taken from that source and the contractor shall be responsible for the specified quality of all such materials used in the works. The contractor shall not obtain aggregates from sources, which have not been approved by the Engineer.

During the course of the contract, the contractor shall supply to the Engineer samples of aggregates taken in accordance with BS 812 at a frequency of at least once a week, or as directed by the Engineer from each aggregate stockpile. The samples shall be delivered to the site laboratory for testing under the supervision of the Engineer. If the routine tests carried out by the Engineer show the aggregates to be not to the same standard as originally approved, then subsequent testing to obtain acceptable aggregates shall be undertaken by the contractor at his own cost.

B Washing and screening

Aggregates shall be washed and screened as necessary to produce aggregates meeting the specified requirements. All such washing and screening shall be to the satisfaction of the Engineer.

Should mica be present in unacceptable quantities, its removal shall be effected by techniques approved by the Engineer. The costs of all washing and screening shall be included in the contract rates.

C Storage

Aggregates shall be stored in separate stockpiles in such a manner that the intermingling of materials from separate stockpiles or bins is not possible and so as to prevent contamination by mud, rubbish, windblown dust or vegetation. Aggregate stockpiles shall be provided with adequate drainage to ensure rapid drainage of the aggregates. The storage arrangements shall be to the approval of the Engineer.

D Coarse aggregates

Coarse aggregates shall consist of river gravel or natural crushed gravel or rock. If river
gravel is used, the gravel of 5 mm to 20 mm and 20 mm to 40 mm size shall be stacked separately. The different sizes of coarse aggregates are finally mixed to attain the required gradation as per Table 1.1. The source (quarry site) of the river gravel and crushed aggregates shall be approved by the Engineer.

Friable and flaky pieces of such aggregates shall be removed to the satisfaction of the Engineer.
Table 1.1- Percentage by weight passing standard sieves

BS 410 Standards

<table>
<thead>
<tr>
<th>Mesh (mm)</th>
<th>10mm to 5mm</th>
<th>20mm to 5mm</th>
<th>40mm to 5mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.0</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>37.5</td>
<td>-</td>
<td>100</td>
<td>95-100</td>
</tr>
<tr>
<td>20.0</td>
<td>100</td>
<td>95-100</td>
<td>35-70</td>
</tr>
<tr>
<td>10.0</td>
<td>85-100</td>
<td>30-60</td>
<td>10-40</td>
</tr>
<tr>
<td>5.0</td>
<td>0-25</td>
<td>0-10</td>
<td>0-5</td>
</tr>
</tbody>
</table>

89. Fine aggregates

Fine aggregate shall consist of natural sand or a mixture of natural sand and crushed gravel or crushed rock. The Engineer shall permit the addition of crushed gravel or crushed rock fine aggregate to the natural sand only where in his opinion it is impracticable to obtain the required fine aggregate grading otherwise than by such addition.

The grading of the fine aggregate shall lie within one of the grading zones as set out in Table 1.2 below and specified in BS 882.

Table 1.2- Percentage by weight passing standard sieves

<table>
<thead>
<tr>
<th>BS410 standard mesh</th>
<th>Grading zone 1</th>
<th>Grading zone 2</th>
<th>Grading zone 3</th>
<th>Grading zone 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00mm</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>5.00mm</td>
<td>90-100</td>
<td>90-100</td>
<td>90-100</td>
<td>95-100</td>
</tr>
<tr>
<td>2.36mm</td>
<td>60-95</td>
<td>75-100</td>
<td>85-100</td>
<td>95-100</td>
</tr>
<tr>
<td>1.18mm</td>
<td>30-70</td>
<td>55-90</td>
<td>75-100</td>
<td>90-100</td>
</tr>
<tr>
<td>600mm-3</td>
<td>15-34</td>
<td>35-59</td>
<td>60-79</td>
<td>80-100</td>
</tr>
<tr>
<td>300mm-3</td>
<td>5-20</td>
<td>8-30</td>
<td>12-40</td>
<td>15-50</td>
</tr>
<tr>
<td>150mm-3</td>
<td>0-10</td>
<td>0-100</td>
<td>0-10</td>
<td>0-15</td>
</tr>
</tbody>
</table>

3.2.3 Water for making concrete etc.

Water used in mixing concrete, mortar or grout shall be clean and free from injurious amounts of oils, acids, alkalis, salts, organic materials or other substances that may be deleterious to concrete or steel. The water shall be to the approval of the Engineer and in accordance with BS 3148, including Appendix A thereof.

The contractor shall, at least six weeks prior to the making of the trial mixes, sample the water he proposes to use and deliver the sample to the Engineer or Inspecting Engineer for testing.

3.2.4 Chemicals in concrete

The total sulphate content, whether as gypsum or more soluble salts, of the concrete ingredients when measured as sulphur trioxide shall not exceed 4% or the weight of cement in the concrete.

The chloride content of the concrete ingredients when measured as chloride ion shall not exceed 0.2% of the weight of cement in the concrete.
If instructed by the Engineer the contractor shall obtain samples from the concrete for testing, all in accordance with BS 1881, Part 6. The cost of sampling and transport shall be covered by the contract rates for concrete.

3.2.5 Additives

Concrete shall be made from cement, aggregates and water as specified. No other ingredient shall be mixed with the concrete or mortar without the Engineer's approval.

If the use of retarding or workability agents is approved by the Engineer their use shall be subject to the following conditions:

- There shall be no reduction in characteristic strength at 28 days compared with additive free concrete of the same grade and class.
- There shall be no reduction of minimum cement content specified.

The use of the admixture shall be strictly in accordance with the manufacturer’s instructions in respect of the conditions at the site. Admixtures shall be introduced to the concrete with the aid of an approved dispenser.

4th generation high performance super plasticizer (SUPAPLAST-PC) conforming IS:9103-1999 and ASTM C-494-1981 (TYPE-G) or equivalent shall be used as an additive in the way and quantity as per direction of engineer.

The contractor may use a retarder to facilitate the preparation of construction joints subject to the approval of the Engineer on the composition of the retarder and its method of application.

3.3 Concrete properties and tests.

3.3.1 Classes and grades of concrete

The concrete used in the works shall be of the grades or classes shown on the drawings or indicated in the Bill of Quantities or ordered by the Engineer.

The characteristics of the mixes of concrete to be used in the works shall be as given in Table 5.3 unless otherwise approved by the Engineer.

3.3.2 Maximum sizes of aggregate to be used

Unless shown on the Drawings or given in the Bill of Quantities the maximum size of coarse aggregate in concrete for any part of the works shall be the largest of the sizes given in table 5.3 the use of which is practical from the standpoint of satisfactory workability and consolidation of the concrete. The contractor shall obtain the approval of the Engineer for the maximum size to be used for each section of the works. Generally 20 mm aggregate shall be used for sections equal to or less than 350 mm and 10 mm aggregate for sections equal or less than 125 mm in thickness i.e. the lesser of the dimension of the section.

3.3.3 Compressive strength compliance

The compressive strength of the concrete shall be based on the compression testing of 150 (a) Concrete cubes, made and tested in accordance with section 2 of this specification. The compressive strength of the concrete is specified by the characteristic compressive strength; Table 1.3 lists the values for each grade of concrete.

The characteristic compressive strength of the concrete is the value of the cube compressive strength, when tested at an age of 28 days, below which not more than 5% of results shall fall. The concrete in the works shall be considered to comply with the compressive strength requirements specified in table 1.3 if the 28 day, cube strengths are equalled or exceeded in Table 1.4.
Table 1.3- Classes of Concrete

<table>
<thead>
<tr>
<th>Concrete grades</th>
<th>M25</th>
<th>M20</th>
<th>M15</th>
<th>M10</th>
</tr>
</thead>
<tbody>
<tr>
<td>25/40</td>
<td>25/40</td>
<td>20/40</td>
<td>15/40</td>
<td>10/40</td>
</tr>
<tr>
<td>Maximum</td>
<td>40</td>
<td>20</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>aggregate size (mm)</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristic compressive strength N/mm²</th>
<th>Minimum cement content of concrete (kg/m³)</th>
<th>Maximum cement content of concrete (kg/m³)</th>
<th>Maximum free water-cement ratio by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>350</td>
<td>425</td>
<td>40</td>
<td>0.50</td>
</tr>
<tr>
<td>350</td>
<td>425</td>
<td>40</td>
<td>0.50</td>
</tr>
<tr>
<td>330</td>
<td>400</td>
<td>40</td>
<td>0.50</td>
</tr>
<tr>
<td>240</td>
<td>400</td>
<td>40</td>
<td>0.50</td>
</tr>
<tr>
<td>260</td>
<td>400</td>
<td>40</td>
<td>0.55</td>
</tr>
<tr>
<td>220</td>
<td>400</td>
<td>40</td>
<td>0.60</td>
</tr>
<tr>
<td>220</td>
<td>400</td>
<td>40</td>
<td>0.60</td>
</tr>
</tbody>
</table>

Table 1.4- Cube strength compliance value

<table>
<thead>
<tr>
<th>Concrete grade</th>
<th>Individual cube-result (N/sq. mm)</th>
<th>Mean of any four consecutive cube results</th>
</tr>
</thead>
<tbody>
<tr>
<td>M25</td>
<td>21.2</td>
<td>25+0.82s</td>
</tr>
<tr>
<td>M20</td>
<td>17</td>
<td>20+0.82s</td>
</tr>
<tr>
<td>M15</td>
<td>12.8</td>
<td>15+0.82s</td>
</tr>
<tr>
<td>M10</td>
<td>8.5</td>
<td>10+0.82s</td>
</tr>
</tbody>
</table>

The standard deviation, s in table 1.4, shall be determined from cube results of at least 40 separate batches of concrete for each concrete grade produced on site from similar materials by the same plant under similar supervision. When 40 cube results are not available and for the initial mix designs the value of the standard deviation shall be taken as:

<table>
<thead>
<tr>
<th>Concrete grade</th>
<th>Standard deviation's (N/sq. mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M25</td>
<td>9</td>
</tr>
<tr>
<td>M20</td>
<td>9</td>
</tr>
<tr>
<td>M15</td>
<td>6</td>
</tr>
<tr>
<td>M10</td>
<td>4</td>
</tr>
</tbody>
</table>

The concrete represented by a group of four consecutive test cubes shall include the batches from which samples were taken to make the first and last cubes in the group of four together with all the intervening batches.

If only one cube result fails to meet the minimum individual cube strength given in Table 1.4 then the result shall be considered to represent only the particular batch of concrete from
which that cube was taken, provided that the average strength of the group of four results in which the low cube occurs satisfies the second requirement of Table 1.4.

The action to be taken in respect of the concrete represented by test cubes which fail to meet the compliance values given in Table 1.4 shall be determined by the Engineer which may range from qualified acceptance in less severe causes, to rejection and removal.

3.3.4 Water cement ratio

The maximum water cement ratios specified in Table 1.3 shall be the ratios by weight of free water to cement in the mix based on the aggregates being in a saturated surface dry condition.

Throughout concrete production the actual water cement ratio shall be strictly monitored and the batch quantities of aggregates and water regularly adjusted to maintain the design water cement ratio.

3.3.5 Workability

Concrete shall be of such consistency that it can be readily worked into the corners and angles of the formwork and around reinforcement without segregation of the materials or bleeding of free water at the free surface or against formwork. On stripping the formwork the concrete shall present a face, which is uniform, free from honeycombing, surface crazing, or excessive dusting, and which shall not, in the opinion of the Engineer be inferior to the specified standards.

Workability of the concrete shall be measured by the slump method or other approved method in accordance with BS 1881, Part 2 and the approval of the Engineer.

Concrete workability shall be as low as practical for the placement and workability and shall be within the limits given in Table 1.5 unless otherwise approved by the Engineer. The tolerances given in Clause 5.8.40 of BS 8110 shall not apply.

<table>
<thead>
<tr>
<th>Table 1.5-Range of slump values (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kind of concrete</td>
</tr>
<tr>
<td>Precast concrete</td>
</tr>
<tr>
<td>Mass concrete and blinding</td>
</tr>
<tr>
<td>Reinforced concrete</td>
</tr>
</tbody>
</table>

3.3.6 Design

The contractor shall design suitable mixes for each grade of concrete required for the works as shown in table 1.3. Each grade of concrete shall be designed to a target mean strength of at least;

<table>
<thead>
<tr>
<th>Concrete grade</th>
<th>Target mean strength(N/sq. mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M25</td>
<td>25 + 1.64s</td>
</tr>
<tr>
<td>M20</td>
<td>20 + 1.64s</td>
</tr>
<tr>
<td>M15</td>
<td>15 + 1.64s</td>
</tr>
<tr>
<td>M10</td>
<td>10 + 1.64s</td>
</tr>
</tbody>
</table>

The standard deviation, s, shall be as specified in clause 1.12.

For each grade of concrete and well in advance of construction, the Contractor shall submit to the Engineer for his approval, information as follows:

Full details of tests and trial mixes.

The mix designs with the proposed quantities of constituents per cubic meter of fully compacted concrete and value of workability.
If the cube results are consistently and significantly in excess of the target mean strength then the contractor may modify the mix proportions provided the requirements of clause 1.12 are still met and subject to approval of the Engineer and any additional trial mixes that may be required to be made.

If the cube results are consistently below the target mean strength than the contractor shall cease production of the relevant class of concrete, investigate the cause of the relative low strength and rectify accordingly to the satisfaction of Engineer.

3.3.7 Trial mixes

Trial mix design work may be undertaken by the contractor in the site laboratory. At least five weeks before using any concrete in the works the contractor shall produce and test trial mixes for each grade of concrete using the same type of construction plant and the same materials as are proposed for the works. The contractor shall give 24 hours’ notice of such trials to enable the Engineer to attend.

For each trial mix of concrete three batches shall be made. Three cubes shall be made from each batch for testing at 28 days and three cubes made for testing at 7 days.

The trial mix proportions will be approved if the average compressive strength of the nine cubes tested at 28 days exceeds.

Concrete grade | Average compressive strength of nine cubes (N/sq.mm)
--- | ---
M25 | 25 + 1.64s - 3.5
M20 | 20 + 1.64s - 3.5
M15 | 15 + 1.64s - 3.5
M10 | 10 + 1.64s - 3.5

The contractor shall not commence placing concrete in the works until the results of the trial mixes are available and the proposed initial mix designs have been approved by the Engineer. Once the proportions of the various mixes have been approved, the Contractor shall not vary either the proportion of the mixes or the source of any constituent material without the approval of the Engineer.

3.3.8 Concrete sampling and testing

Sampling and testing shall be in accordance with BS 1881.

The contractor shall establish a system for regular sampling and testing of concrete to the approval of the Engineer. Samples shall be taken from randomly selected batches of each class of concrete used in the works, and at approximately equal intervals throughout the placement. Where more than one mixer is in use, sampling shall be from each mixer in turn. Higher rates of sampling and testing may be used to the start of the works to establish the quality quickly or during periods of production when quality is in doubt.

The contractor shall provide the necessary equipment, labour and transport for carrying out the sampling and testing in the site laboratory.

The concrete test cubes shall be stored and tested at the site laboratory under the supervision of the Engineer.

Records of concrete sampling and testing shall be kept by the contractor and forwarded to the Engineer within 24 hours of sampling and testing. Samples for testing shall be taken at the point of discharge into the works.

3.4 Ready mixed or truck mixed

Ready mixed concrete maybe used only with the approval of the engineer and shall comply with all requirements or the contract.
The concrete shall be carried in purpose made agitators, operating continuously, or truck mixers, which shall comply with BS 4251, or similarly approved specification. For each batch of concrete the time of introduction of cement and water to the aggregates shall be recorded on a delivery return to be forwarded to the Engineer. Water shall be added either at the delivery point or at the central batching plant. In no circumstances shall water be added in transit.

Concrete shall be discharged and placed within one hour after the time of loading or other such time as may be found necessary and approved by the Engineer to ensure that the concrete has the required workability at the time of discharge and placing. The time of loading shall be the time of contact between the cement and aggregates or, where these are surface dry, between cement and added water.

3.5 **Production and workmanship**

The solid constituents of the concrete mix shall be measured by weight.

A separate weighing device shall be provided for the cement. Alternatively, the cement shall be measured using a number of whole bags in each batch, the use of part bags in a batch will not be permitted.

The added water shall be measured by volume or weight using a water measuring device fitted to the mixer which shall automatically cut off the supply when the required quantity has been added. Solid admixtures shall be measured by weight and liquid or paste admixtures by weight or volume.

When weighing the aggregates due allowance shall be made for the weight of water in the aggregates.

Approved equipment for quick and frequent measurement of the moisture content of the aggregates shall be provided at the batching plant.

The accuracy of the measuring equipment shall be within + 3% of the quantity of cement, water or total aggregates being measured and within + 5% of the quantity of any admixture being used. All measuring equipment shall be maintained in a clean, serviceable condition and shall be zeroed daily and calibrated monthly.

The mixers shall comply with the requirements of BS 1305 or approved equivalent. The mixing time shall not be less than that used by the mixer manufacturer in assessing its performance.

Mixers, except continuous mixers, shall be emptied before being charged with a new batch of concrete. Mixers shall not be loaded in excess of the manufacturer's rated capacity, which shall be displayed on the mixer in terms of volume of mixed concrete.

Concrete shall not be placed in standing or running water unless specified or approved.

The contractor shall obtain the approval of the Engineer of the arrangements he proposes to use for transporting, placing and compacting concrete.

The concrete shall be handled so that at the point of deposition it is of the specified quality and approved consistency, nothing having been added to it or lost from it since leaving the mixer.

Where chutes are used to convey the concrete, their slopes shall not be such as to cause segregation, and suitable spouts or baffles, shall be provided to prevent segregation during discharge. Concrete shall not be allowed to fall freely more than 2 m.

Ground surfaces, blinding or other concrete shall be surface dry immediately prior to the placement of new concrete thereon, provided that such joints shall be kept moist for 24 hours prior to concrete placement. Ground surfaces shall be well damped down prior to placement of concrete thereon. A mortar layer shall not be used on surfaces of construction joints.
In all cases concrete shall be deposited in lifts, layers or sections of such height, thickness and size as shall suit the dimensions of the work in hand and the method of compaction as to which the Engineer shall be the judge, but lifts shall not normally exceed 1.5 m for members more than 1.5 m in width.

Where steps, splay and kickers occur these shall be cast in one with the slab and additional care shall be taken during vibration and finishing to ensure that thorough compaction is achieved.

All concrete which has reached a temporary set or has become so stiff that proper placing without tempering cannot be assured, shall not be used.

Concrete having required characteristic strengths greater than 10 N/sq. mm shall be compacted by mechanical vibrator. Vibration shall not be applied by way of the reinforcement and every care shall be taken to avoid contact with the reinforcement. The contractor shall provide sufficient vibrators, in serviceable condition, so that standby vibrators are always available in the event of breakdowns. The number and type of vibrators used on concrete placement shall be to the approval of the Engineer.

Where immersion type vibrators are used, they shall have a minimum frequency of vibration of 7,000 revolutions per minute when immersed in the concrete. Form vibrators shall be securely fastened to the forms and shall operate at speeds of at least 8,000 revolutions per minute when vibrating concrete. Concrete shall not be subjected to vibration between it taking its initial set and 24 hours after compaction. Vibrators shall not be used to move concrete along the forms. Over vibration causing segregation, surface laitance and leakage thorough formwork shall be avoided.

Concrete having required characteristic strengths not greater than 10 N/sq. mm may be compacted by hand but shall be deposited in layers not exceeding 300mm in thickness and shall be well worked with special tools and rods until it has settled closely in place and is free from air bubbles.

Deposited layers of concrete shall not exceed 0.6 m in depth prior to compaction. Care shall be taken to ensure that reinforcement projecting from concrete recently placed is not shaken or disturbed.

Except where otherwise directed concrete shall not be placed unless the engineer or his representative is present and has previously examined and approved the positioning, fixing and condition of the reinforcement and alignment and suitability of the containing surfaces. At least 24 hours’ notice shall be given in writing to the Engineer of the placing of concrete and request for approval to concrete.

### 3.6 Concreting in adverse conditions

The contractor shall not place concrete in the works:

- (τ) during heavy rains or dust storms
- (υ) when the (shade) air temperature exceeds 38°C
- (σ) When the air temperature is less than 2°C
- (ο) if the temperature of the concrete is less than 4°C or more than 30°C without taking the necessary measures to ensure acceptable concrete temperatures to the approval of the Engineer
- (ξ) When the (shade) air temperature exceeds 30°C, without taking precautions to the approval of the Engineer to ensure that the maximum internal temperature of the concrete does not exceed 38°C during the initial set, and
- (ψ) When the temperature of the formwork or reinforcement exceeds 30°C.
3.7 Curing and protection

The contractor shall for not less than 7 days protect the concrete from the harmful effects of frost, wind, sun, high and low temperatures, rapid temperature change, premature loading, deflection, impact, running water and aggressive groundwater. Protruding steel shall be kept cool.

All exposed concrete surfaces shall be kept continuously moist for not less than 7 days after casting, by watering, by covering with hessian or sacking which shall be kept fully saturated stall times or by other methods approved by the Engineer.

Curing membranes approved by the Engineer shall be applied in conformity with the manufacturer's instructions. They shall be applied to unshuttered surfaces as soon as the moisture film has disappeared from the concrete, but while the surface is still damp and shall incorporate an approved reflecting agent. Surfaces with applied curing membrane shall be shaded from the sun.

3.8 Built-in items

Where pipes, sleeves, water stops or other items are built into concrete, they shall be rigidly secured in position to prevent movement and shall be free from external coatings which might adversely affect the bond. The contractor shall take precautions as approved or directed by the Engineer to prevent the formation of air pockets, voids or other defects whilst the concrete is being placed around built-in items.

3.9 Concrete records

The contractor shall furnish daily to the Engineer record, in a form to be approved by the Engineer, showing the quantities of cement, the number and volume of mixings of each grade of concrete used in each section of the works and in temporary works and details of sampling and testing.

3.10 Surface finishes

The types of finishes required on the various concrete surfaces shall be as specified below unless indicated otherwise in the specification or on the drawings.

Where a surface is partly below and partly above the final ground level, the finish for the exposed surface shall extend for 0.5 m below the final ground level.

All permanently exposed arises shall be formed with a 20 mm x 20 mm chamfer unless otherwise shown on the drawings.

A concrete surface which in the opinion of the Engineer fails to achieve the required standard shall render that section of concrete, the number of which it is a part, or in extreme cases the whole structure, liable to be rejected by the Engineer. No remedial work to defective concrete surfaces shall be started before the defective work has been inspected by the Engineer. If remedial work is permitted as an alternative to reconstruction, the contractor shall submit his proposals in respect of the repair to the Engineer for his approval.

3.11 Finishes for surfaces formed by shuttering

Back

Finish for surfaces against backfill or against which further concrete will be placed. It shall be formed using hewn boards, sheet metal or any other suitable material which will prevent the loss of any constituents when the concrete is vibrated. Surfaces shall be free from voids, honeycombing or other large blemishes. This surface will, in general require no treatment after the removal of formwork other than curing and repair of defective concrete if approved.

Face

Finish for surfaces prominently exposed to view and where accurate alignment and density and soundness of surface are of importance to prevent the destructive effects of water action.
The finish shall be obtained by the use of forms having a hard, smooth surface. The resulting concrete surfaces shall be smooth with true, clean arises. Only very minor surface blemishes shall be permitted and there shall be no staining or discoloring from release agent. Joints between panels shall be arranged as far as possible to coincide with architectural features or changes in direction of the surface and shall be vertical and horizontal unless otherwise directed. Joints between slab soffit panels shall be parallel to the supports. If the Engineer considers it necessary, the surface shall be sack-rubbed to fill small pits and air holes. Sack-rubbing shall be done as soon as the forms have been removed but after any approval of repairs have been carried out. The sack rubbing shall be carried out in an approved manner. After surface treatment has been carried out the specified curing shall continue.

3.12 Finishes for shuttered concrete surfaces Screened

This finish shall be used unless otherwise specified for the surfaces of roadways, footpaths, foundations, base slabs and structural units to be covered by backfill, subsequent stages of construction, bonded concrete toppings or mortar beds. It shall be obtained by leveling and screeding the concrete to produce an even uniform plain or lightly ribbed surface without laitance, and surplus concrete shall be struck off by a straight edge immediately after completion. Screened finish is the first stage of subsequent grades of finish.

Before carrying out this finish on roads and footpaths the contractor shall obtain the approval of the Engineer as to the direction of the ridges on the surface and the method of screeding.

Trowelled

This is a hard smooth finish for surfaces of concrete paving, tops of walls, copings and uniformed surfaces or architectural features including precast unit, for surface of beds and slabs to receive thin flexible sheet and the paving bedded in adhesive and seating for metal items. This finish is required for concrete surfaces exposed permanently or temporarily to water flow. Finishing shall initially be screened and floated. Floating may be performed by use of hard or power driven equipment. Floating shall be started as soon as the screened surface has hardened sufficiently and shall be the minimum necessary to produce a uniform surface free from screed marks. Floating shall continue until a small amount of mortar without excess water is brought to the surface so as to permit effective trowelling. Trowelling shall not commence until the moisture film has disappeared and the concrete has hardened sufficiently to prevent excess fine material from being worked to the surface. The surface shall be trowelled under firm pressure such as will flatten the sandy mixture of the surface and produce a dense uniform surface free from blemishes and trowel marks.

Finishes of concrete surfaces shall be performed only by skilled workmen and in the presence of the Engineer. No extra payment shall be made for finishes to unshuttered concrete surfaces.

3.13 Measurement and Payment

Measurement of concrete for payment shall be made only to the neat lines of the structures as shown in the Drawings or as established by the Engineer. In measuring concrete for payment, the volume of all cavities, depressions, openings, embedded pipes, woodwork and metalwork, except reinforcement bars, anchor bolts and bars, shall be deducted.

Payment for concrete M10 and M20 shall be made at the unit rate per cubic meter for Items Nos. 2.1.1.3 & 2.1.1.4 of the Bill of Quantities respectively. The unit rate shall include the cost of all labour and materials required in the construction, including furnishing and handling cement and exclude the costs of furnishing and placing concrete forms and reinforcement bars. No separate payment shall be made except for items expressed in Bill of Quantities for construction joints, grouting, and other incidentals and all costs in connection therewith shall be considered to be covered by the unit rate of concrete.
3.14 Steel Reinforcement.

(aa) Quality
Steel for the reinforcement of concrete shall be hot-rolled bars complying with BS 4449.

(bb) Testing and test certificates
Reinforcing steel ordered from the mills shall be examined at the mills by the inspecting Engineer and, wherever possible, and unless otherwise approved shall be tested in his presence in accordance with BS 4449. The copies of all works tests certificates relating thereto shall be forwarded to the inspecting Engineer.

In the case of steel not tested in the presence of the inspecting Engineer, whether ordered from the mills or from stockholders, copies of works test certificates shall be supplied as prescribed herein and the Engineer or the inspecting Engineer reserves the right to carry out such further tests as he may consider necessary.

Copies of the inspecting Engineer's test certificates or works test certificates in respect of each consignment of steel reinforcement delivery of reinforcement to the site. Every consignment and its related test certificates shall carry reference markings such that they are uniquely identified.

The contractor shall supply samples of reinforcement from the stocks on site when required by the Engineer and shall forward the samples to the inspecting Engineer for testing as directed.

(cc) Storage
Reinforcement shall be stored clear of the ground and supported to prevent distortion. At the time of incorporation in the Works, reinforcement shall be clean and free from defects, oil or grease, loose mill scale and loose rust, or any other substance, which may adversely affect the steel, concrete or reduce bond. Bars, which have become bent, shall not be straightened or re-bent for incorporation in the works without the approval of the Engineer.

3.14.1 Preparation of reinforcement drawings
The contractor shall prepare at his own expense all detailed reinforcement drawings. The drawings shall include all bar-placing drawings, bar-bending schedules, bar fabrication and placement of reinforcement bars.

Reinforcement drawings shall be submitted to the Engineer for approval at least two months prior to commencing fixing the reinforcement. In preparing the working reinforcement drawings the contractor shall keep laps to the minimum number and length required. No additional payment will be made for laps which in the opinion of the Engineer are unnecessary for construction of the works.

3.14.2 Cutting Bending and Fixing Reinforcement
Reinforcement shall be cut from straight bars and cold bent, using a bending machine approved by the Engineer. Cutting, bending and marking shall be in accordance with BS 4466 unless otherwise specified, or ordered by the Engineer. The contractor shall place and fix reinforcement accurately in the positions shown on the approved reinforcement detail drawings, and shall ensure that it remains in position during the placing of concrete. Welding of reinforcement will not be permitted. Reinforcement shall be firmly bound together at all intersections using Nr 16 gauge annealed steel wire or approved equivalent. The ends of such typing wire shall be bent away from the formwork.

Reinforcement projecting from previously cast concrete must not be bent without the prior approval of the Engineer.
All reinforcement shall be supplied in the full lengths indicated on the Drawings. No splicing of bars other than in locations shown in the drawings will be permitted without the approval of the Engineer.

Before any steel reinforcement is embedded in the concrete, any scale, loose rust, oil grease or other deleterious matter shall be removed. Partially set concrete which may be adhered to the exposed bars during Concreting operations shall likewise be removed.

When the reinforcement has been placed and is ready for Concreting, it will be inspected by the Engineer and no concrete shall be placed until the reinforcement has been approved by him. The contractor shall inform the Engineer at least 24 hours in advance of his intention to have the reinforcement ready for inspection.

All reinforcement left exposed for future work shall be protected against exposure and corrosion to the approval of the Engineer.

3.14.3 Cover to reinforcement

The cover to reinforcement shall be at least 50 mm unless shown otherwise on the drawings. Cover shall be maintained by the use of the minimum practical number of purpose made concrete blocks or approved spacers. Concrete spacer blocks shall be made from cement, sand and small aggregate to match the mix proportions of the surrounding concrete as far as is practicable to ensure comparable strength, durability and appearance. The cost of spacer blocks and chairs shall be included in the contract rates for concrete.

3.14.4 Splicing of the reinforcement

All steel reinforcement shall be furnished in full length as indicated on the Drawings. Splicing of bars, except where shown on the Drawings, shall not be permitted without the written approval of the Engineer. Splices shall be staggered.

Welding of steel reinforcement or connections of steel reinforcement by means of mechanical splices shall be done only if detailed on the duly approved Drawings or if such authorization is made by the Engineer.

When it is necessary to splice reinforcement bars at points other than any shown on the Drawings, position and methods of splicing shall be determined based on strength calculations and approved by the Engineer. In lapped splices, the bars shall be lapped 20 times the diameter of the bar or the following, whichever is larger. No hooks shall be required for lap joints, unless otherwise specified.

The lap length shall be calculated as follows:

For tension reinforcement bars

\[ L = \frac{f_y}{4\tau_{bd}} \]

where,
- \( f_y \) (kk) Yield strength of reinforcement steel.
- \( \tau_{bd} \) (ll) Bond strength of concrete.
- \( \varnothing \) (ll) Diameter of reinforcement bar
- \( L \) (mm) Lap length

80 per cent of “L” calculated by the above formula.

When gas pressure welding of joints is used, the operation shall be made by conforming to the following requirements:
50. The welding equipment shall be so designed as to hold both bars to be jointed in a straight line, applying pressure of more than 3 kg/sq.mm to the contact surface of the bars.

51. The blowpipe shall emit a constant flow of gas, and its diameter shall be suitable for the diameter of the bars to be welded.

52. Oil, rust, paint, and dust shall be completely removed, by a grinder, from the surfaces to be jointed.

53. The edge surface of bars to be jointed shall be inclined to the axis of the bar at more than 80 degrees, and shall be so planed that the clearance between bars being in contact shall not be more than 4mm.

54. Bars to be jointed shall be butted with pressure of more than 1 kg/sq mm. The pressure shall be increased gradually with heating, until the diameter of the joint portion increases to 1.2 times the original diameter of the bars.

55. The joint portion shall be heated uniformly with more than two blowpipes. Flames shall always completely cover the heated portion.

56. After jointing, the joint shall not be cooled rapidly by rain, etc. Re-jointing shall be made, when inflation of the joint portion is insufficient.

3.14.5 Measurement and Payment of Reinforcement Steel

Measurement for payment of furnishing and placing reinforcement bars shall be made only for the weight of the bars placed in the concrete in accordance with the Drawings, or as directed by the Engineer. Clips, ties, wastage, spacer bars, annealed wire or other material used for positioning and fastening the reinforcement bars in place shall not be measured for payment. Only reinforcement bars in laps indicated on the Drawings shall be included in the measurements for payment. Payment for furnishing and placing reinforcement bars shall be made at the unit rate per metric ton from the Item no 2.1.1.5 of the Bill of Quantities, which unit rate shall include the cost of furnishing reinforcement bars, furnishing and attaching wire ties and metal supports, if used, and of delivering, unloading, hauling, storing, sorting, cutting bending, cleaning, placing and securing, and maintaining in position all reinforcement bars, as shown on the Drawings, or as directed by the Engineer.

3.15 Formwork

(a) General

The terms formwork and shuttering shall be interpreted as meaning one and the same thing. Formwork shall include all temporary or permanent forms required to obtain the profiles and finishes as specified and shown on the drawings.

False-work shall be interpreted as meaning all temporary or permanent work required to support the formwork such that it shall remain rigid during the placing and setting of the concrete and such that dimensional deviations in the finished concrete structure do not exceed the specified limits. All formwork and false work shall be designed and detailed by the contractor. All designs and details shall be submitted to the Engineer for approval well in advance of construction.

The Engineer's approval of the formwork shall not relieve the contractor of his responsibilities under the contract for any damage or injury that might result from any inadequacy in the formwork.

False work shall be designed to withstand the worst combination of self-weight, formwork weight, formwork forces, reinforcement weight, wet concrete weight, construction and wind loads, together with all incidental dynamic effects caused by placing, vibrating and compacting the concrete.
Joints between sections of formwork shall be sufficiently tight to prevent loss of grout or mortar from the forms.

Top formwork shall be provided to concrete faces where the slope exceeds one in three unless otherwise approved by the Engineer.

Reuse of formwork shall be at the discretion of the Engineer having regard to the specified surface finish.

Prior to the inspection by the Engineer for approval for Concreting the formwork shall be thoroughly cleaned to remove all dirt, debris and standing water.

Surfaces of the formwork to be in contact with concrete shall be free from adhering foreign matter, projecting nails and the grooves, splits, and other defects, and shall be treated with an approved non-staining release agent applied strictly in accordance with the manufacturer's instructions. Release agent shall not be allowed to come into contact with adjacent concrete or the reinforcing steel.

Temporary openings to facilitate cleaning and inspection shall be provided at the base of column, wall and deep beam formwork. Formwork for walls and other thin sections of considerable height shall be provided with openings, to the approval of the Engineer for polishing and compacting the concrete.

When forms have been built and have been prepared ready for Concreting, they will be inspected by the Engineer and no concrete shall be placed until the forms have been approved by him. In order to avoid delays in obtaining approval, the contractor shall inform the Engineer, at least 24 hours in advance, of his intention to have the forms ready for inspection.

= Tie-bolts etc.

Before placing any concrete, all bolts and the like (if required and which are to be built in) shall be fixed in their correct positions, and cores and other devices for forming holes, openings, etc. shall be fixed to the forms. No holes shall be cut in any concrete unless approved by the Engineer. The use of wire ties for supporting the forms shall not be permitted in concrete walls which are to be subject to water, or when the finished surface, required as determined by the Engineer, is to be permanently exposed; wire ties used for other concrete works shall be cut off flush with the concrete surface, after the forms are removed. In case embedded metal rods are used for holding forms, the rods shall terminate not less than 3 centimetres from the formed surface of the concrete in which the maximum size of aggregate is 40 millimeters.

= Removal of form work

The Engineer shall be informed in advance when the contractor intends to remove any formwork. The time at which the formwork is removed shall be the contractor's responsibility. Formwork shall only be removed with the permission of the Engineer and the work of removing it after receipt of such permission shall be carried out under the supervision of a competent foreman. Great care shall be exercised during the removal to avoid shocks to or reversal of stress in the concrete.

Provided the concrete strength is confirmed by tests on cubes stored under the same conditions, formwork supporting cast in situ concrete in flexure may be removed when the cube strength is 10 N/sq. mm, or twice the stress to which it will be the subjected, whichever is the greater.

Formwork shall not be removed where unacceptable deflections are likely to result. The contractor shall supply the Engineer with the necessary calculations in support of the above. Materials and contractor's equipment shall not be stored on any newly constructed member without the permission of the Engineer. In the absence of cube test results, Table 1.6 below shall be followed for the minimum period before removing formwork from concrete using ordinary Portland cement and admixtures.
Unless soffit formwork has been designed so that it can be removed without disturbing the props, it shall be retained in position for the minimum period given in Table 1.6 for the removal of the props.

**Table 1.6-Minimum period before removing formwork.**

<table>
<thead>
<tr>
<th>Type of formwork</th>
<th>Minimum period before removal for average surface temperature of concrete since casting.</th>
<th>16°C</th>
<th>7°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical</td>
<td>Columns, walls and beams</td>
<td>18 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>Soffit</td>
<td>Slabs</td>
<td>4 days</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td>Beams</td>
<td>8 days</td>
<td>14 days</td>
</tr>
<tr>
<td>Props</td>
<td>Slabs</td>
<td>11 days</td>
<td>14 days</td>
</tr>
<tr>
<td></td>
<td>Beams</td>
<td>15 days</td>
<td>21 days</td>
</tr>
</tbody>
</table>

Where cements other than ordinary Portland are used, or surface temperatures differ significantly from those shown, the periods may be adjusted at discretion of the Engineer.

**3.16 Dimensional deviation in in-situ concrete work**

Deviations from the specified dimensions, locations and levels for the various classes of in-situ concrete finish shall not exceed the limits shown in Table 1.7. Deviations exceeding these limits will render the structure member or section of a member concerned liable to rejection by the Engineer.

**Table 1.7 Dimensional deviations in in-situ concrete work**

<table>
<thead>
<tr>
<th>Typical structure</th>
<th>Type of deviation</th>
<th>Maximum permissible deviation in (mm) for classes of finish</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Departure from</td>
<td>Back</td>
</tr>
<tr>
<td>Buried concrete in foundations, retaining walls, etc.</td>
<td>alignment and level</td>
<td>+25</td>
</tr>
<tr>
<td></td>
<td>Variations in cross sectional dimensions(1)</td>
<td>+10</td>
</tr>
<tr>
<td></td>
<td>Deviation from template in long dimensions (2)</td>
<td>+10</td>
</tr>
<tr>
<td></td>
<td>Abrupt (3)</td>
<td>-5</td>
</tr>
<tr>
<td>Exposed concrete in piers, columns</td>
<td></td>
<td>-5</td>
</tr>
</tbody>
</table>
Retaining walls, etc.  Departure    from    -     +5
alignment and level          -5      -

Note:  The numbers in brackets under the type of deviation refer to:
(d)  The cross sectional dimensions of structural members such as walls, columns, beams, etc. where, for structural or other reasons, it is necessary to keep the tolerances within closer limits than those for alignment and level.
(e)  Gradual deviations caused by misalignment or formwork from the dimensions shown on the drawings and measured for a 3 along template.
(f)  Offsets and fins caused by displaced or misplaced formwork sheathing, lining or support by loose knots in forms or by otherwise defective formwork.

3.17 Precast Concrete
(a)  Storage of pre-cast units
When pre-cast units are stored they shall be supported at such positions as will ensure that the stresses induced in them are always less than the permissible design stresses.

(b)  Handling and placing of precast units
Pre-cast units shall be lifted or supported only at points described in the contract or approved by the Engineer and shall be handled and placed without impact.

(c)  Manufacture of pre-cast units
The method of manufacture shall be approved by the Engineer. Each mould for concrete work which is specified or approved by the Engineer to be pre-cast shall have a different embossed or recessed identification mark in a position to the approval of the Engineer.

Each pre-cast unit shall be indelibly marked with the date of casting and if they are of symmetrical section, a clear indication of the face which will be uppermost when the member is in its correct position in the works. The markings shall be so located that they are not exposed to view when the member is in its permanent position.

Pre-cast units shall not be disturbed until 28 days after removal from the mould, unless elevated temperature curing is used.

Alternately, the kerbstones and railing posts may be casted in situ at site with the approval of engineer.
(a) Hydraulic tests
A series of hydraulic tests are required to be performed on a territory outlet structure to determine the as built flow characteristics for final sizing of the orifice plates. At the direction of the Engineer the contractor should install a territory outlet in stage II at a location determined by the Engineer and carry out the tests instructed and supervised by the Engineer.

(b) Elevated temperature curing
The method of curing shall be approved by the Engineer. At least four hours must elapse from completion of the placing of concrete before its temperature is raised. The rise in temperature within any period of 30 minutes shall not exceed 10°C and the maximum temperature attained shall not exceed 70°C. The rate of subsequent cooling shall not exceed the rate of heating. The method of curing used shall minimize the loss of moisture from the concrete.

(c) Dimensional deviations in pre-cast concrete work
Unless shown otherwise on the Drawings, deviations from the specified dimensions for pre-cast members shall not exceed the value shown in Table 5.8. If deviations exceed the target value, the contractor shall take the necessary steps to bring subsequent work within the target. If deviations exceed the maximum allowable value the member may be rejected by the Engineer.

<table>
<thead>
<tr>
<th>Table 5.8 - Dimensional deviations in pre-cast concrete work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length dimension</td>
</tr>
<tr>
<td>Upto 3 m.</td>
</tr>
<tr>
<td>3 to 4.5 m.</td>
</tr>
<tr>
<td>4.5 to 6 m.</td>
</tr>
<tr>
<td>For every additional 6 m.</td>
</tr>
<tr>
<td>Cross sectional dimensions</td>
</tr>
<tr>
<td>Up to 500mm</td>
</tr>
<tr>
<td>500 to 750mm</td>
</tr>
<tr>
<td>For every additional 250mm</td>
</tr>
<tr>
<td>Straightness Tress or Bow</td>
</tr>
<tr>
<td>Up to 3m</td>
</tr>
<tr>
<td>3 to 6m</td>
</tr>
<tr>
<td>6 to 12m</td>
</tr>
<tr>
<td>For every additional 6mm</td>
</tr>
<tr>
<td>Length of shorter sides</td>
</tr>
<tr>
<td>Up to and including 1.2 m. but less than 1.2 m.</td>
</tr>
<tr>
<td>Over 1.2 in. but less than 1.2 in</td>
</tr>
<tr>
<td>1.8 m. and over</td>
</tr>
</tbody>
</table>

Squares of corner
If the longer side of a member is taken as a base, then the shorter adjacent side should not vary from the perpendicular so that the distance between the greatest and shortest dimensions is not exceeded by more than the following:

Twist
Any corner should not be more than the deviation stated from the plane containing the other three corners. Max. Target value (mm) Allowable value (mm)
Technical Specifications

(i) Laying of precast concrete

Precast concrete Krebs (600*210*300) shall be laid with 12mm thick cement mortar (in 1:3 cement sand ratio) over foundation concrete.

Precast concrete/ natural stone for footpath shall be laid with 12mm thick cement mortar (in 1:3 cement sand ratio) over prepared foundation.

(j) Measurement and payment for precast concrete

The unit rate shall include the cost of all labour and materials required in the construction, including furnishing and handling and laying jointing of precast concrete excluding the foundation preparation.

3.18 Joints in concrete

(bb) General

Joints shall only be formed in the positions shown on the drawings or approved by the Engineer. Construction, contraction and expansion joints shall be formed to the details shown on the Drawings and as specified herein, and from the specified materials.

(cc) Construction Joints

Whenever concrete is placed on or against previously placed concrete which has become so hard that the new concrete cannot be monolithically compacted therewith the resulting place of separation shall be defined as a construction Joint.

Where the locations of construction joints have not been shown on the drawings then the contractor shall decide the locations of construction joints to suit the Concreting program. The positions of construction joints shall be to the approval of the Engineer which shall be obtained before concreting takes place. The contractor shall submit to the Engineer drawings showing the positions of construction joints. Construction Joints shall be located so that in conjunction with the program for Concreting, the effects of shrinkage and temperature are minimized. Construction joints shall be formed in straight lines at right angles to the general direction of the member and shall take account of shear and other stresses, and as far as is practical shall be located at points of least shear. Construction joints shall be formed with clean sharp arises.

Construction joints shall be formed using rigid shuttering or other approved method, with Joint lines at exposed surfaces of concrete being straight and continuous, plumb, level or inclined. Before placing new concrete against that which has already set, the latter shall be treated carefully to expose the aggregate over the full section and to leave a sound irregular clean surface free from laitance. Loose and foreign matter obtained by green cutting using an air/water jet, by chipping or other approved means.

The cost of forming all construction joints shall be included in the contract rates for concrete including, where the Engineer requires, a water stop.

1. Contraction Joints

Contraction Joints shall be as located and detailed on the drawings. The joints shall be made by forming with smooth forms the concrete on the side of the joint and allowing it to set before placing concrete on the other side of the joint. The concrete surface on the side of each joint shall be given two coats of approved bitumen before the concrete on the other side of the joint is placed.
6. Expansion Joints

Expansion joints shall be constructed in the locations and to the details shown on the drawings. Performed joint filter, bond breeder and joint sealing compound, water stops, dowel bares and bitumen coating shall be placed in the joints in accordance with the drawings and instruction of Engineer.

7. Joint Filler

The Contractor shall supply and fix pre-moulded joint fillers in expansion joints as shown on the Drawings. Unless otherwise specified, the joint filler shall be resin bonded cork such as Expandite “Hydrocor” or similar approved. It shall be obtained from manufacturers approved by the Engineer and shall be stored and fixed in accordance with the manufacturer’s instructions.

Resin bonded cork filler shall comply with the United States Federal Specification HH-F-341e Type II Class B with the following limitations when tested in accordance with the said specification:

- the load required to compress the material to 50% of its thickness shall be more than 0.035 N/sq.mm and less than 0.35 N/sq.mm.

- the recovery after compression to 50% of the original thickness shall be not less than 95% of the original thickness.

The Contractor shall provide the Engineer with a sample to be used in the Works and the manufacturer’s test certificate for the Engineer’s approval, before issuing the purchasing order to the suppliers, and shall, if requested, supply sufficient of each sample for confirmatory tests to be carried out in accordance with the appropriate test procedure.

The joint filler of the thickness specified shall be cut to shape, and fixed to fill the whole space between the concrete faces of the joint which is not otherwise filled by water stop or joint sealer. Abutting pieces shall be placed in close contact and the joints covered on each side to prevent passage of cement grout.
CHAPTER 4: GRANULAR BASECOURSE
CHAPTER4: GRANULAR BASE COURSE

4.1 Materials:
Sub-base material shall be obtained from approved source in borrow. The sub-base material shall consist of well graded natural river gravel (Sand Mixed River bed Material) which shall confirm the followings pacifications:

The grading shall fall within the limits mentioned in Table Q-1 depending on type and nominal maximum size of the material. The maximum size shall not exceed two third of the thickness of the base course.

<table>
<thead>
<tr>
<th>Nominal Maximum Size</th>
<th>75mm</th>
<th>50mm</th>
<th>25mm</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS Sieve % passing</td>
<td>% passing</td>
<td>% passing</td>
<td>% passing</td>
<td></td>
</tr>
<tr>
<td>3”</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2”</td>
<td>85-100</td>
<td>55-100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>3/8”</td>
<td>35-75</td>
<td>Same as for 3” Maximum size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/16”</td>
<td>25-60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No 7</td>
<td>20-50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No 36</td>
<td>10-30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No 200</td>
<td>0-15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2 Compaction Requirement:
The minimum in place dry density of the compacted layer shall be 95% of BS 1377 density.

4.3 Construction:
The Base course shall only be constructed provided that the underlying layer confirms the requirements specified for the layer concerned. Immediately before placing the material, the underlying layer shall be checked for any damage or deficiencies which shall be made good.

The contractor shall arrange his sequence of transporting spreading and compacting the pavement so that segregation is avoided and the required compaction is achieved over the full width. The desired uniformity and degree of compaction can only be achieved by strict control over the thickness of layer and moisture content of the material during compaction. Where the compacted thickness of the course exceeds 150mm the material shall be spread in unless approval is given in writing by the Engineer for compaction of thicker layers based on site trials with the material and compaction equipment proposed by the contractor.

Before commencing work the Contractor shall submit his proposal for the working and compaction of road material to the Engineer for approval. Contractor’s Equipment for compaction may consist of cylindrical, sheep’s foot, rubber typed or vibrating rollers or other suitable plant which will compact the respective material to their specified density and approved by the Engineer. Earth moving Equipment, particularly tracked machines will not be acceptable as compaction Equipment.
**Pavement Course Site Trials:**
For each type of pavement material or variations in type of a particular material, the contractor shall demonstrate by site trials that the methods proposed by the contractor will satisfy the requirements of the specification to the satisfaction of the Engineer.

If during site trials it is apparent that material otherwise acceptable under the specification produce an excess of fines under compaction, then either the contractor shall vary his method of compaction to avoid this excess or the contractor shall vary the grading of the material so that the material as compacted in situ consistently meets the requirements of the specification. The modification shall be the subject of site trials to the satisfaction of the Engineer.

**Pavement Thickness and Smoothness:**
The compacted road base thickness shall not be less than that shown on the drawings for a particular road type.

The compacted sub-base and road base shall have a surface smoothness such that waves and irregularities do not exceed 10mm in 3m as measured against straight edge for road base and 15mm in 3m for sub base.

Any area of the compacted sub-base or road base having a compacted thickness or smoothness less than those specified shall be corrected by scarifying the surface, adding approved material, reshaping, re-compacting and finishing as approved by the Engineer. Skin patching an area without scarifying the surface to permit proper binding or the added material will not be permitted.

4.4 **Construction Tolerances:**
The compacted sub-base shall confirm to the dimensional tolerances stated below:

Levels: The finished surface shall be within +15 mm and -25mm of the specified level.

Width: The width of the Sub-base and base shall not be less than the specified width and nowhere shall the outer upper edge of the sub-base be inside the lines shown on the drawings.

Thickness: The average thickness of material in any length or section of the road measured from before and after levels or from test holes, shall not be less than the specified thickness and in no place shall the thickness be reduced more than 10mm from the specified thickness.

4.5 **Testing:**
The minimum testing frequency that will be required for the purpose of process control, shall be the following:

<table>
<thead>
<tr>
<th>SN</th>
<th>Tests</th>
<th>Testing Frequency</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Field Density and OMC</td>
<td>2500 sqm</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Indicator Tests</td>
<td>2500 sqm</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Construction Tolerances</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>------------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>Surface level</td>
<td>25m (3 pits per</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>cross section)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness</td>
<td>25m</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>200m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross section</td>
<td>25m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The determination of field dry density ex 1377 (heavy) density determination for each field density. Where material is homogeneous, this ratio can be decrease to one BS 1377 (heavy) density determination for up to six field densities.

Routine inspection and testing will be carried out to test the quality of material and workmanship for compliance with the requirement of this section. The contractor will inform the Employer before conducting such tests. The test reports should be submitted to the Employer in time for needful.

Any material or workmanship that do not comply with the specified requirements shall be removed and replaced with materials and workmanship complying with the specified requirements, or be repaired so that after being repaired it will comply with the specified requirements.

Measurement of the granular sub base shall be made in per cubic meter and payment shall be done in unit rate per cubic meter from the item no …… NA of the Bill of Quantities.
CHAPTER 5: BOULDER AND MASONRY WORKS
CHAPTER 5: BOULDER SOLING AND MASONRY WORKS

1.1 Boulder/Stone

Stone shall be the best available of its kind, sound, durable, free from flaws and soft, weathered or decomposed parts. The stone and the source from which it is obtained shall be subject to approval of the Engineer before any of that material is brought to site.

Stone for soling and masonry shall have a minimum density of 2,650 kg/m³. Stones as delivered to site shall have no dimension less than neither 100 mm nor greater than 450 mm. Stone for soling shall be sound, hard, durable and fairly regular in shape with at least one side broken. Stone subject to marked deterioration by water or weather shall not be used. Boulder for Riprap as delivered to site shall have no dimension less than 100 mm.

All stone shall be taken from approved sources. The stones shall be fine or rock quarrying of granite, quartzite, or similar materials having a specific gravity of at least 2.4 and a compressive strength of at least 400 kg/cm².

Measurement of Boulder Riprap in front of RCC wall shall be in Hr. of 0.6 m³ capacity of excavator. Measurement shall be made only for the forms that have been used and approved by the Engineer. Payment for Boulder Riprap measured shall be made at the unit rate per Hr. for Item No. 2.1.1.8 of the Bill of Quantities.

5.2 Boulder Soling

Soling shall be done to separate the finished base of foundation and the concrete surfaces having thickness specified in drawing or as per site conditions approved by the engineer.

5.3 Stonemasonry

5.3.1 General

Stone masonry shall be uncaused random rubble stone masonry with fair face; exposed surfaces provided with hammer dressed, split boulder face and corners. Stone masonry shall comply with the appropriate Indian Standards.

No stones are to tail neither to point, nor into the wall less than 1.5 times their height. The height shall not be greater than the breadth.

Joints shall not exceed 25 mm thick. The exposed joints shall be pointed flush with the surface of adjacent stones, or as approved by the Engineer.

Concealed faces shall be finished with natural boulders and the joints filled to give an even durable surface. No rendering or pointing is required, unless directed by the Engineer.

Parallel face walls up to 300 mm thick shall have a minimum of 1 bond stone per m². Bond stones shall run from face to face of the wall.

Masonry shall be carried up evenly and uniformly, no portion being raised more than 1m above another at any one time. Joints shall be filled as stones are laid. Unfinished masonry shall be steeped back and immediately before new work is added the previous work shall be thoroughly cleaned.

Heating shall consist of whole or split stones, with no dimension less than 100 mm. Stones shall be carefully laid, hammered down with a wooden mallet and solidly bedded with mortar, chips and spalls being inserted to avoid thick beds of joints and mortar.

The conditions governing the laying of masonry in unfavorable weather shall be as specified for concrete these specifications. Exposed faces of masonry shall be kept moist for ten days after construction.

5.3.2 Tolerance
Masonry shall be carried out to the lines and levels shown on the drawings or as directed by the Engineer. The tolerances shall be similar to these for concrete.

5.3.3 Mortar

1. Cement
   Cement shall be as specified in these specifications for concrete works.

2. Sand
   Sand for mortar shall be as specified in these specifications for concrete works. Blending sand for mortar may be obtained locally or from other sources, but the resulting mixture shall comply with British Standard 1200. Stockpiles shall be placed on boards or metal sheeting and not directly on the ground.

3. Water
   Water for mortar shall be as specified in these specifications for concrete works.

4. Mortar
   Mortar shall, unless otherwise specified, consist of one part Portland cement to four parts of damp loose mortar sand by volume and sufficient water to produce the required consistency for use. For increased workability and where approved by the Engineer, hydrated lime putty may be added, but shall not exceed 25% by volume, of the dry cement.

   Mortar shall be mixed by an approved machine and all tools used for mixing shall be kept clean. Materials shall first be thoroughly mixed dry and then only sufficient water added to make tile mortar workable. Only a sufficient quantity of mortar shall be mixed for the immediate needs of the work.

   Each batch shall be used within thirty minutes after mixing or such time as may be determined by the Engineer, and no partially set mortar shall be used in the work.

5. Use of mortar
   Mortar already spread which becomes diluted by rain shall be removed and replaced before continuing with the work. Masonry shall not be constructed during rains sufficiently heavy or prolonged to wash the mortar from the bricks or stones. Batched mortar shall be protected from rain and if not so protected shall not be used in the work.

6. Transport
   The methods and equipment used for carrying bricks or dressed stones shall be such as will not damage them.

5.3.4 Masonry Construction

5. Placing
   All masonry shall be placed only after the foundation surfaces have been prepared satisfactorily in accordance with these specifications and instructions of the Engineer.

6. Setting
   No personnel or further masonry will be allowed on any section of work before it is fully set to the satisfaction of the Engineer.

7. Wetting stones
   All bricks and stones to be used in masonry with mortar joints shall be moistened with clean water for three to four hours before they are used, by a method which will ensure that each brick or stone is thoroughly and uniformly wetted. All bricks and stones shall be free from water adhering to their surface when they are placed in
7. Laying
Stone masonry shall be skillfully built up in uncrossed random rubble stone masonry with fair face, exposed surfaces provided with Hammer dressed, split boulder, face and corners.
Masonry constructed for a waterway will be of the best standard of workmanship obtainable. The specified bond shall be maintained at all times.

8. Jointing
Stone Masonry - Joints shall not exceed 25 mm thick. The exposed joints shall be pointed flush with the surface of adjacent stones, or as approved by the Engineer.
All fair face stone work shall be provided with hammer dressed, split boulder, face and corners and shall be finished with struck joints, such work being carried out immediately after the laying of the stone whilst the mortar is still damp. Any extra mortar necessary shall be the same as that used in the stone work.

9. Plumb bob and straightedge
Where applicable masonry shall be taken up truly plumb and each set of four masons shall be provided with a plumb bob and straight edge.

10. Pointing of Masonry
In the event of fair faced masonry not being finished with struck joints whilst the mortar is still damp, pointing may be carried out with tile approval of the Engineer. In this case all joints shall be raked out to a depth of 20 mm, cleaned free from all loose material and any putlogs filled in. The area to be pointed shall then be thoroughly soaked before pointing takes place, the mortar used being to the satisfaction of the Engineer.

11. Progress
Masonry shall be carried up regularly and no portion of the work shall be left more than 1m. lower than another. Temporary steps, left during construction, shall be raked back and not toothed. Straight edges supplied to masons and used for brickwork shall have courses marked on them with saw cuts, or measuring rods provided, and heights of courses frequently checked so as to keep them level.

12. Cleanliness
Care shall be taken to keep all masonry free from mud splashing, mortar and bitumen droppings, etc. and it shall be well cleaned down before being handed over.

5.3.5 Scaffolding
The contractor is responsible for providing, erecting and dismantling and removing safe and adequate scaffolding where required.

5.3.6 Protecting and curing
Protecting and curing of masonry shall be carried out in accordance as specified in these specifications for concrete works. The Water used for curing shall be clean and in accordance with these specifications for concrete works.

5.3.7 Repairing of masonry
If, after the completion of masonry, any of it is out of alignment or level, or shows a defective surface, it shall be removed and replaced by the contractor at his own expense and to the satisfaction of the Engineer.
SECTION-VII
Bill of Quantities
Preamble of Bill of Quantities

A. General

2. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Special Conditions of Contract, Technical Specifications, and Drawings.

3. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Project Manager and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Project Manager may fix within the terms of the Contract.

4. For any item for which measurement is based on records made before or during construction the records shall be prepared and agreed between the Engineer and the Contractor. Should the Contractor carry out such work without the prior agreement of the Engineer, the Engineer may request the Contractor to carry out investigations to confirm the extent of the work and the quantity of work certified for payment shall be solely at the Engineer's discretion. The cost of any such investigation shall be borne by the Contractor.

5. The rates and prices bid in the priced Bill of Quantities shall, except as otherwise provided under the Contract, include all construction equipment, labor, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

6. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

7. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

11. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities. The Specification Clause references where given in the item description of the Bills of Quantities are for the convenience of bidders and generally refer to the principal relevant specification clause but do not necessarily represent the whole of the specification requirements for the work required within the item. The presence of a Specification clause reference shall not in any way reduce the Bidders obligation to complete work in accordance with all the requirements of the Specification.

12. Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Project Manager in accordance with the Conditions of Contract.

13. The method of measurement of completed work for payment shall be in accordance with the Specifications.

14. The abbreviations and symbols used in this Bill of Quantities are:
B. Day work Schedule

b) General

6. Work shall not be executed on a day work basis except by written order of the Project Manager. Bidders shall enter basic rates for day work items in the Schedules. These rates shall apply to any quantity of day work ordered by the Project Manager. Nominal quantities have been indicated against each item of day work, and the extended total for day work shall, be carried forward as a Provisional Sum to the Summary Total Bid Amount. Unless otherwise adjusted, payments for day work shall be subject to price adjustment in accordance with the provisions in the Conditions of Contract.

b) Day work Labor

3. In calculating payments due to the Contractor for the execution of day works, the hours for labor will be reckoned from the time of arrival of the labor at the job site to execute the particular item of day work to the time of departure from the job site, but excluding meal breaks and rest periods. Only the time of classes of labor directly doing work ordered by the Project Manager and are competent to perform such work will be measured. The time of gangers (charge hands) actually doing work with the gangs will also be measured but not the time of foremen or other supervisory personnel.

4. The Contractor shall be entitled to payment in respect of the total time that labor is employed on day work, calculated at the basis rates entered by it in the "SCHEDULE OF DAY WORK RATES: 1. LABOR". The rates for labor shall be deemed to cover all costs to the Contractor including (but not limited to) i) the amount of wages paid to such labor, transportation time, overtime, subsistence allowances, ii) any sums paid to or on behalf of such labor for social benefits in accordance with Nepal law, iii) Contractor's profit, overheads, superintendence, liabilities and insurance and iv) charges incidental to the foregoing.

c) Day work Equipment

3. The Contractor shall be entitled to payments in respect of Constructional Plant already on site and employed on day work at the basis rental rates entered by him in the “SCHEDULE OF DAY WORK RATES: 2 EQUIPMENT”. The said rates shall be deemed to include due and complete allowance for depreciation, interest, indemnity and insurance, repairs, maintenance, supplies, fuel, lubricant, and other consumables and all overhead, profit and administrative costs related to the use of such equipment. The cost of drivers, operators and assistants also shall be included in the rate of the equipment and no separately payment shall be made for it.

4. In calculating the payment due to the Contractor for Constructional Plant employed on day work, only the actual number of working hours will be eligible for payment, except that where applicable and agreed with the Project Manager, the travelling time from the part of the Site where the Construction Plant was located when ordered by the Project Manager to be employed on day work and the time for return journey there to shall be included for payment.

d) Day work Materials

2. The Contractor shall be entitled to payment in respect of materials used for day work (except for materials for which the cost is included in the percentage addition to labor costs as detailed heretofore), at the rates entered by him in the "SCHEDULE OF DAY WORK RATES: 3 MATERIALS" and shall be deemed to include overhead charges and profit as follows;

   (i) the rates for materials shall be calculated on the basis of the invoiced price, freight, insurance, handling expenses, damage, losses, etc. and shall provide for delivery to store for stockpiling at the Site.

   (ii) the cost of hauling materials for use on work ordered to be carried out as day work, from the store or stockpile on the Site to the place where it is to be used also shall be include in the same rate.
Provisional Sums

A general provision for physical contingencies (quantity overruns) may be made by including a provisional sum in the Summary Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a provisional sum in the Summary Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises. Where such provisional sums or contingency allowances are used, the SCC should state the manner in which they will be used, and under whose authority (usually the Project Manager’s).

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractors should be indicated in the relevant part of the Bill of Quantities as a particular provisional sum with an appropriate brief description. A separate procurement procedure is normally carried out by the Employer to select such specialized contractors. To provide an element of competition among the Bidders in respect of any facilities, amenities, attendance, etc., to be provided by the successful Bidder as prime Contractor for the use and convenience of the specialist contractors, each related provisional sum should be followed by an item in the Bill of Quantities inviting the Bidder to quote a sum for such amenities, facilities, attendance, etc.
Part III: CONDITIONS OF CONTRACT AND CONTRACT FORMS
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SECTION-VIII

General Conditions of Contract
# General Conditions of Contract

## A. General

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<th>1. Definitions</th>
<th>1.1 Boldface type is used to identify defined terms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>t</td>
<td>The <strong>Accepted Contract Amount</strong> means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.</td>
</tr>
<tr>
<td>u</td>
<td>The <strong>Activity Schedule</strong> 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.</td>
</tr>
<tr>
<td>v</td>
<td>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 23.2 hereunder.</td>
</tr>
<tr>
<td>w</td>
<td><strong>Bill of Quantities</strong> means the priced and completed Bill of Quantities forming part of the Bid.</td>
</tr>
<tr>
<td>x</td>
<td><strong>Compensation Events</strong> are those defined in GCC 50 hereunder.</td>
</tr>
<tr>
<td>y</td>
<td>The <strong>Completion Date</strong> is the date of completion of the Works as certified by the Project Manager, in accordance with GCC 68.1.</td>
</tr>
<tr>
<td>z</td>
<td>The <strong>Contract</strong> is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC 2.3 below.</td>
</tr>
<tr>
<td>aa</td>
<td>The <strong>Contractor</strong> is the party whose Bid to carry out the Works has been accepted by the Employer.</td>
</tr>
<tr>
<td>bb</td>
<td>The <strong>Contractor’s Bid</strong> is the completed bidding document submitted by the Contractor to the Employer.</td>
</tr>
<tr>
<td>cc</td>
<td>The <strong>Contract Price</strong> is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.</td>
</tr>
<tr>
<td>dd</td>
<td><strong>Days</strong> are calendar days; months are calendar-months.</td>
</tr>
<tr>
<td>ee</td>
<td><strong>Dayworks</strong> 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.</td>
</tr>
<tr>
<td>ff</td>
<td>A <strong>Defect</strong> is any part of the Works not completed in accordance with the Contract.</td>
</tr>
<tr>
<td>gg</td>
<td>The <strong>Defects Liability Certificate</strong> is the certificate issued by Project Manager upon correction of defects by the Contractor.</td>
</tr>
<tr>
<td>hh</td>
<td>The <strong>Defects Liability Period</strong> is the period calculated from the Completion Date where the Contractor remains responsible for remedying defects.</td>
</tr>
<tr>
<td>ii</td>
<td><strong>Drawings</strong> include calculations and other information provided or approved by the Project Manager for the execution of the Contract.</td>
</tr>
<tr>
<td>jj</td>
<td>The <strong>Employer</strong> is the party who employs the Contractor to carry out the Works, as specified in the SCC.</td>
</tr>
<tr>
<td>kk</td>
<td><strong>Equipment</strong> is the Contractor’s machinery and vehicles brought temporarily to the Site to construct the Works.</td>
</tr>
</tbody>
</table>
t Force Majeure means an exceptional event or circumstance: which is beyond a Party's control; which such Party could not reasonably have provided against before entering into the Contract; which, having arisen, such Party could not reasonably have avoided or overcome; and, which is not substantially attributable to the other Party.

u The Initial Contract Price is the Contract Price listed in the Employer’s Letter of Acceptance.

v In writing or written means hand written, type written, printed or electronically made, and resulting in permanent record.

w 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 SCC. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

q Letter of Acceptance means the formal acceptance by the Employer of the Bid and denotes the formation of the contract at the date of acceptance.

r Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.

s Party means the Employer or the Contractor, as the context requires.

t SCC means Special Conditions of Contract

r Plant is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

s The Project Manager is the person named in the SCC (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.

t Retention Money means the aggregate of all monies retained by the Employer pursuant to GCC 54.1.

u Schedules means the document(s) entitled schedules, completed by the Contractor and submitted with the Letter of Bids, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.

v The Site is the area defined as such in the SCC

w Site Investigation Reports are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.

x Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

y The Start Date is given in the SCC. 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.

z 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.

aa Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
- **Variation** is an instruction given by the Project Manager which varies the Works
- The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the SCC.

### 2. Interpretation

2.1 In interpreting these GCC, singular also means plural, male also means female or neuter, and the other way around. 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 SCC**, 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) Contract Agreement,
- (b) Letter of Acceptance,
- (c) Letters of Technical Bid and Price Bid,
- (d) Special Conditions of Contract,
- (e) General Conditions of Contract,
- (f) Specifications,
- (g) Drawings,
- (h) Bill of Quantities (or Schedules of Prices for lump sum contracts), and
- (i) Any other document **listed in the SCC** as forming part of the Contract.

### 3. Language and Law

3.1 The language of the Contract and the law governing the Contract are **stated in the SCC**.

1.2. Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Employer’s country when

(a) 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, or any payments to, a particular country, person, or entity. Where the borrower’s country prohibits payments to a particular firm or for particular goods by such an act of compliance, that firm may be excluded.

### 4. Contract Agreement

4.1 The Parties shall enter into a Contract Agreement within 15 days after the Contractor receives the Letter of Acceptance, unless the Special Conditions establish otherwise. The Contract Agreement shall be based upon the attached Contract forms in Section X.
5. Assignment

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<tr>
<td>5.1</td>
<td>Neither Party shall assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, either Party (a) may assign the whole or any part with the prior agreement of the other Party, at the sole discretion of such other Party; and (b) may, as security in favor of a bank or financial institution, assign its right to any moneys due, or to become due, under the Contract.</td>
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6. Care and Supply of Documents

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<tbody>
<tr>
<td>6.1</td>
<td>The Specification and Drawings shall be in the custody and care of the Employer. Unless otherwise stated in the Contract, one copy of the Contract and of each subsequent Drawing shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.</td>
</tr>
<tr>
<td>6.2</td>
<td>Each of the Contractor’s Documents shall be in the custody and care of the Contractor, unless and until taken over by the Employer. Unless otherwise stated in the Contract, the Contractor shall supply to the Engineer six copies of each of the Contractor’s Documents.</td>
</tr>
<tr>
<td>6.3</td>
<td>The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor’s Documents (if any), the Drawings and Variations and other communications given under the Contract. The Employer’s Personnel shall have the right of access to all these documents at all reasonable times.</td>
</tr>
<tr>
<td>6.4</td>
<td>If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.</td>
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7. Confidential Details

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<tbody>
<tr>
<td>7.1</td>
<td>The Contractor’s and the Employer’s Personnel shall disclose all such confidential and other information as may be reasonably required in order to verify the Contractor’s compliance with the Contract and allow its proper implementation.</td>
</tr>
<tr>
<td>7.2</td>
<td>Each of them shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.</td>
</tr>
<tr>
<td>7.3</td>
<td>Notwithstanding the above, the Contractor may furnish to its Subcontractor(s) such documents, data and other information it receives from the Employer to the extent required for the Subcontractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this Clause.</td>
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8. Compliance with Laws

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<tbody>
<tr>
<td>8.1</td>
<td>The Contractor shall, in performing the Contract, comply with applicable Laws.</td>
</tr>
</tbody>
</table>

9. Joint and

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</table>
| 9.1 | If the Contractor is a joint venture of two or more entities, all such
<table>
<thead>
<tr>
<th><strong>Several Liability</strong></th>
<th>Several Liability entities shall be jointly and severally liable to the Employer for the fulfillment of the provisions of the Contract, and shall designate one of such persons to act as a leader with authority to bind the joint venture. The contractor shall not handover the responsibility of the contract to any one member or some members of Joint Venture or any other parties, not involved in the contract. The composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Project Manager's Decisions</td>
<td>10.1 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>11. Delegation</td>
<td>11.1 The Project Manager may delegate any of his duties and responsibilities to other people after notifying the Contractor, and may cancel any delegation after notifying the Contractor.</td>
</tr>
<tr>
<td>12. Communications</td>
<td>12.1 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>13. Subcontracting</td>
<td>13.1 <strong>For GoN Funded:</strong> A list of approved Subcontractors including its value/works is included as Article 2 (k) of contract Agreement. Approval by the Employer for any of the Subcontractors shall not relieve the Contractor from any of its obligations, duties, or responsibilities under the contract. <strong>For DP Funded:</strong> 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. Bidders may propose subcontracting up to the percentage of total value of contracts as specified in the SCC. The Sub contractor shall meet the qualification requirement as specified in SCC.</td>
</tr>
<tr>
<td>14. Other Contractors</td>
<td>14.1 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 SCC. 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>15 Personnel and Equipment</td>
<td>15.1 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. 15.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor’s staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.</td>
</tr>
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</table>
15.3 If the Employer, Project Manager, or Contractor determines, that any
<table>
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<tr>
<th>16. Employer’s and Contractor’s Risk</th>
<th>16.1 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.</th>
</tr>
</thead>
</table>
| 17. Employer’s Risks | 17.1 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.  
17.2 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 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. |
| 18. Contractor’s Risks | 18.1 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. |
| 19. Insurance | 19.1 The Contractor shall provide insurance in the joint names of the Employer and the Contractor from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the SCC 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.  
19.2 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 |
<table>
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<tr>
<th>Section</th>
<th>Description</th>
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<tbody>
<tr>
<td>19.3</td>
<td>If the Contractor does not provide any of the policies and certificates required, the Employer may affect 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.</td>
</tr>
<tr>
<td>19.4</td>
<td>Alterations to the terms of insurance shall not be made without the approval of the Project Manager.</td>
</tr>
<tr>
<td>19.5</td>
<td>Both parties shall comply with any conditions of the insurance policies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>20. Site Investigation Reports</th>
<th>20.1 The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the SCC, supplemented by any information available to the Contractor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Contractor to Construct the Works</td>
<td>21.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.</td>
</tr>
<tr>
<td>22. The Works to Be Completed within intended Completion Date</td>
<td>22.1 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 within the intended Completion Date.</td>
</tr>
<tr>
<td>23. Design by contractor and Approval by the Project Manager</td>
<td>23.1 The contractor shall be responsible for the design of permanent works as specified in SCC.</td>
</tr>
<tr>
<td></td>
<td>23.2 Contractor shall be responsible for design of the Temporary Works. The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.</td>
</tr>
<tr>
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<td>23.3 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, shall be subject to prior approval by the Project Manager before their use.</td>
</tr>
<tr>
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<td>23.4 The Project Manager’s approval shall not alter the Contractor’s responsibility for design of temporary works.</td>
</tr>
<tr>
<td>24. Safety, Security and Protection of the Environment</td>
<td>24.1 The Contractor shall, throughout the execution, and completion of the works and remedying of any defects therein:</td>
</tr>
<tr>
<td></td>
<td>a. Have full regard for the safety of all persons entitled to be upon the site and keep the site (so as the same is under his control) and the works (so far as the same are not completed or occupied by the Employer) in an orderly state appropriate to the avoidance of danger to such persons.</td>
</tr>
<tr>
<td></td>
<td>b. Provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when necessary or required by the Project Manager or by any duly constituted authority, for the protection of the Works of for the safety and convenience of the public or others.</td>
</tr>
</tbody>
</table>
|                              | c. Take all reasonable steps to protect the environment on and off the
site and to avoid damage or nuisance to persons
<table>
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<tr>
<th>Section</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>25. Discoveries</td>
<td>Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the employer. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager’s instructions for dealing with them.</td>
</tr>
<tr>
<td>26. Possession of the Site</td>
<td>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 SCC, the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.</td>
</tr>
<tr>
<td>27. Access to the Site</td>
<td>The Contractor shall allow the Project Manager and any person authorized by the Project Manager 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.</td>
</tr>
<tr>
<td>28. Instructions, Inspections and Audits</td>
<td>The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.</td>
</tr>
</tbody>
</table>

- Ensure that any cut or fill slopes are planted in grass or other plant cover as soon as possible to protect them from erosion.
- Any spoil or material removed from drains shall be disposed of to designated stable tipping areas as directed by the Project Manager.
- Shall not use fuel wood as a means of heating during the processing or preparation of any materials forming part of the works.
- The Project Manager shall have the power to disallow any working practice or activity of the Contractor or direct that such practices or activities be modified should the Project Manager consider, on the advice of the relevant Government Departments, that the practices or activities will be harmful to wildlife.
- Provide on the Site such lifesaving apparatus as may be appropriate and an adequate and easily accessible first aid outfit or such outfits as may be required by any government ordinance, factory act, etc., subsequently published and amended from time to time.

h. Provide on the Site such lifesaving apparatus as may be appropriate and an adequate and easily accessible first aid outfit or such outfits as may be required by any government ordinance, factory act, etc., subsequently published and amended from time to time.
<table>
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| 29. Dispute Settlement | 29.1 The Employer and the Contractor shall attempt to settle amicably by direct negotiation any disagreement or dispute arising between them under or in connection with the Contract.  
29.2 Any dispute between the Parties as to matters arising pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party’s request for such amicable settlement may be referred to Arbitration within 30 days after the expiration of amicable settlement period. |
| 30. Procedures for Disputes | 30.1 In case of arbitration, the arbitration shall be conducted in accordance with the arbitration procedures published by the Nepal Council of Arbitration (NEPCA) at the place given in the SCC.                                                                                                                      |
| B. Staff and Labor |                                                                                                                                                                                                                                                                                                                                                                     |
| 31. Forced Labor | 31.1 The Contractor shall not employ forced labor, which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor, or similar labor–contracting arrangements. |
| 32. Child Labor | 32.1 The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where national laws have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work. |
| 33. Non-discrimination and Equal Opportunity | 34.1 The Contractor shall not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment relationship on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employment or retirement, and discipline. In countries where national law provides for non-discrimination in employment, the Contractor shall comply with national law. When national laws are silent on nondiscrimination in employment, the Contractor shall meet this Sub clause’s requirements. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination. |
| B. Time Control |                                                                                                                                                                                                                                                                                                                                                                     |
| 34. Program | 34.1 Within the time stated in the SCC, 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.  
34.2 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.

34.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period stated in the SCC. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount stated in the SCC 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 a lump sum contract, the Contractor shall provide an updated Activity Schedule within 15 days of being instructed to by the Project Manager.

34.4 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.

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<tr>
<th>35. Extension of the Intended Completion Date</th>
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<tr>
<td>35.1 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.</td>
</tr>
<tr>
<td>35.2 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 at least 21 days prior to the intended completion date. 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.</td>
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<th>36. Acceleration</th>
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<tr>
<td>36.1 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.</td>
</tr>
<tr>
<td>36.2 If the Contractor’s priced proposals for acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.</td>
</tr>
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<tr>
<th>37. Delays Ordered by the Project Manager</th>
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<tbody>
<tr>
<td>37.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.</td>
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<th>38. Management Meetings</th>
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<tr>
<td>38.1 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.</td>
</tr>
<tr>
<td>38.2 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.</td>
</tr>
</tbody>
</table>
stated in writing to all who attended the meeting.

| 39. Early Warning | 39.1 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.  
39.2 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 | 40. Identifying Defects | 40.1 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. |

| 41. Tests | 41.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification 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. |

| 42. Correction of Defects | 42.1 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 SCC. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.  
42.2 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. |

| 43. Uncorrected Defects | 43.1 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 | 44. Contract Price | 44.1 In the case of a Unit Rate contract, 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.  
44.2 In the case of a lump sum contract, 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. |

| 45. Changes in the | 45.1 In the case of an Unit Rate contract: |
### Contract Price

(a) 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 2 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change.

(b) The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 10 percent, except with the prior approval of the Employer.

(c) 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.

45.2 In the case of a lump sum contract, 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.

### 46. Variations

46.1 All Variations shall be included in updated Programs, and, in the case of a lump sum contract, also in the Activity Schedule, produced by the Contractor.

46.2 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 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.

46.3 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 costs.

46.4 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.

46.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

46.6 In the case of an Unit Rate contract, 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 45.1 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.

### 47. Cash Flow Forecasts

47.1 When the Program, or, in the case of a lump sum contract, the Activity Schedule, is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast.
48. Payment Certificates

48.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

48.2 The Project Manager shall check the Contractor’s monthly statement and certify the amount to be paid to the Contractor within 30 days of submission by contractor.

48.3 The value of work executed shall be determined by the Project Manager.

48.4 The value of work executed shall comprise:
   (a) In the case of an Unit Rate contract, the value of the quantities of work in the Bill of Quantities that have been completed; or
   (b) In the case of a lump sum contract, the value of work executed shall comprise the value of completed activities in the Activity Schedule.

48.5 The value of work executed shall include the valuation of Variations and Compensation Events.

48.6 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.

49. Payments

49.1 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 30 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest as indicated in the SCC 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.

49.2 If an amount certified is increased in a later certificate or as a result of an award by 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.

49.3 Items of the Works for which no rate or price has been entered in BOQ shall not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

50. Compensation Events

50.1 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 26.1.
   (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.

2) 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.

3) 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.

4) 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.

5) The advance payment is delayed.

6) The effects on the Contractor of any of the Employer’s Risks.

7) The Project Manager unreasonably delays issuing a Certificate of Completion.

50.2 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.

50.3 As soon as information demonstrating 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.

50.4 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.

51. Tax

51.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 30 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 53.

52. Currency

52.1 The currency of Contracts shall be Nepalese Rupees.

53. Price Adjustment

53.1 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the SCC. 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
53.2 Adjustment Formulae:\(^2\): The formulae will be of the following general type:

\[ p_n = A + b \frac{L_n}{L_0} + c \frac{M_n}{M_0} + d \frac{E_n}{E_0} + \text{etc.} \]

Where:

- \( p_n \) is a price adjustment factor to be applied to the amount for the payment of the work carried out in the subject month, determined in accordance with Clause 49;
- \( A \) is a constant, specified in the Bidding Forms- Table of Price Adjustment data, representing the nonadjustable portion in contractual payments;\(^3\) \( b, c, d, \text{ etc.} \), coefficients representing the estimated proportion of each cost element (labor, materials, equipment usage, etc.) in the Works or sections thereof, net of Provisional Sums, as specified in the SCC;
- \( L_n, M_n, E_n, \text{ etc.} \), are the current cost indices or reference prices of the cost elements for month "n," determined pursuant to Sub-Clause 53.4, applicable to each cost element; and
- \( L_0, M_0, E_0, \text{ etc.} \), are the base cost indices or reference prices corresponding to the above cost elements at the date specified in Sub-Clause 53.4.

53.3 Sources of Indices and Weightings: The sources of indices shall be those listed in the Bidding Forms- Table of Price Adjustment data, as approved by the Project Manager and stated in SCC. Indices shall be appropriate for their purpose and shall relate to the Contractor’s proposed source of supply of inputs on the basis of which his Contract shall have been computed. As the proposed basis for price adjustment, the Contractor shall have submitted with his bid the tabulation of Weightings and Source of Indices in the Bidding Forms, which shall be subject to approval by the Project Manager.

53.4 Base, Current and Provisional Indices: The base cost indices or prices shall be those prevailing on the day 30 days prior to the latest date for submission of bids. Current indices or prices shall be those prevailing on the day 30 days prior to the last day of the period to which a particular Interim Payment Certificate is related. If at any time the current indices are not available, provisional indices as determined by the Project Manager will be used, subject to subsequent correction of the amounts paid to the Contractor when the current indices become available.

53.5 Weightings: The weightings for each of the factors of cost given in the Bidding Forms shall be adjusted if, in the opinion of the Project Manager.

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\(^2\) For complex Works involving several types of construction work with different inputs, a family of Formulae will be necessary. The various items of Day work may also require different formulae, depending on the nature and source of the inputs.

\(^3\) Insert a figure for factor \( A \) only where there is a part of the Contractors’ expenditures which will not be subject to fluctuation in cost or to compensate for the unreliability of some indices. \( A \) should normally be 0.15. The sum of \( A, b, c, d, \text{ etc.} \), should be one.
Manager, they have been rendered unreasonable, unbalanced or inapplicable as a result of varied or additional work already executed or instructed under Clause 46 or for any other reason.

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| 53.6 Where, price adjustment provision is not applicable pursuant to Sub-clause 53.1 then the Contract is subject to price adjustment only for construction material in accordance with this clause. If the prices of the construction materials stated in the contract is increased or decreased in an unexpected manner in excess of ten (10%) percent in comparison to the base price construction material stated in Section –IV, Bidding Forms-Table of Price Adjustment Data, then the price adjustment for the increase or decrease of price of the construction material beyond 10% shall be made by applying the following formulas:

For unexpected increase in price

\[ P = (R_1 - (R_0 \times 1.10)) \times Q \]

For unexpected decrease in price

\[ P = (R_1 - (R_0 \times 0.90)) \times Q \]

Where:

- “P” is price adjustment amount
- “R_1” is the present price of the construction material (Source of indices shall be those listed in the Bidding forms)
- “R_0” is the base price of the construction material
- “Q” is quantity of the construction material consumed in construction during the period of price adjustment consideration

If the Base price and source is to be proposed by the Bidder as per the provision made in Section –IV, Bidding Forms-Table of Price Adjustment Data then the Base price and source filled by Bidder for the construction material stated in the Bidding Form shall be subject to the approval of the Project manager and shall be as stated in SCC.

53.7 The Price Adjustment amount shall be limited to a maximum of the initial Contract Amount as specified in the SCC.

53.8 The Price Adjustment provision shall not be applicable for delayed period if the contract is not completed in time due to the delay caused by the contractor or the contract is a Lump sum Contract

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| 54. Retention | 54.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the SCC until Completion of the whole of the Works.

54.2 Upon the issue of a Defects Liability Certificate by the Project Manager, in accordance with GCC 70.1, half the total amount retained shall be repaid to the Contractor and half when the Contractor has submitted the evidence of submission of tax return to the concerned Internal Revenue Office. On completion of the whole works, the Contractor may substitute retention money with an “on demand” bank guarantee.

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| 55. Liquidated Damages | 55.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the SCC for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated
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<tr>
<td>55.2</td>
<td>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 payment to the date of repayment, at the rates specified in GCC.</td>
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<tr>
<td>56.1</td>
<td>The Contractor shall be paid a Bonus calculated at the rate per calendar day stated in the SCC 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.</td>
</tr>
<tr>
<td>57.1</td>
<td>The Employer shall make advance payment to the Contractor of the amounts stated in the SCC in two equal installments by the date stated in the SCC, against provision by the Contractor of an unconditional bank guarantee from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal in a form acceptable to the Employer in amounts 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.</td>
</tr>
<tr>
<td>57.2</td>
<td>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.</td>
</tr>
<tr>
<td>57.3</td>
<td>The advance payment shall be repaid by deducting proportionate amounts, as stated in SCC, from payments otherwise due 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.</td>
</tr>
<tr>
<td>58. Securities</td>
<td>58.1 The Performance Security, including any additional security required as per ITB 35.5 and ITB 40.1, 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 SCC, by a Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal, acceptable to the Employer, and denominated in Nepalese Rupees. The Performance Security shall be valid until a date 30 days from the date of issue of the Defect Liability Certificate in the case of a bank guarantee. Any additional performance security required as per ITB 35.5 shall be valid until a date 30 days from the date of issue of the certificate of Completion in the case of a bank guarantee. Any additional performance security required as per ITB 40.1 shall be valid until a date 30 days from the date of issue of the certificate of DLP in the case of a bank guarantee. 58.2 The performance security issued by any foreign Bank outside Nepal must be counter guaranteed by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.</td>
</tr>
<tr>
<td>59. Dayworks</td>
<td>59.1 If applicable, the Dayworks rates in the Contractor’s Bid shall be used for small additional amounts of work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way. 59.2 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. 59.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.</td>
</tr>
<tr>
<td>60. Cost of Repairs</td>
<td>60.1 Loss or damage to the Works or Materials to be incorporated in the Repairs 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.</td>
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| F. Force Majeure | 61.1 In this Clause, “Force Majeure” means an exceptional event or circumstance, which is beyond a Party’s control; which such Party could not reasonably have provided against before entering into the Contract; which, having arisen, such Party could not reasonably have avoided or overcome; and C. which is not substantially attributable to the other Party. 61.2 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: c) war, hostilities (whether war be declared or not), invasion, act of
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<tr>
<td>61. Foreign Enemies</td>
<td>foreign enemies; rebellion, terrorism, sabotage by persons other than the Contractor’s Personnel, revolution, insurrection, military or usurped power, or civil war; riot, commotion, disorder, strike or lockout by persons other than the Contractor’s Personnel; munitions of war, explosive materials, ionizing 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 natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.</td>
</tr>
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</table>
| 62. Notice of Force Majeure | 62.1 If a Party is or will be prevented from performing its substantial 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.  
62.2 The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.  
62.3 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. |
| 63. Duty to Minimize Delay | 63.1 Each Party shall at all times use all reasonable endeavors to minimize any delay in the performance of the Contract as a result of Force Majeure.  
63.2 A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure. |
| 64. Consequences of Force Majeure | 64.1 If the Contractor is prevented from performing its substantial obligations under the Contract by Force Majeure of which notice has been given under GCC 62, and suffers delay and/or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to GCC 30 to:  
(a) an extension of time for any such delay, if completion is or will be delayed, under GCC35; and  
(b) if the event or circumstance is of the kind described in subparagraphs (a) to (d) of GCC 61.2 and, in the case of subparagraphs (b) to (d), occurs in the Country, payment of any such Cost, including the costs of rectifying or replacing the |
Works and/or Goods damaged or destructed by Force Majeure,
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<td>64.2</td>
<td>After receiving this notice, the Project Manager shall proceed in accordance with GCC 10 to agree or determine these matters.</td>
</tr>
<tr>
<td>65.1</td>
<td>If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from 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 nonperformance or entitle him to relief under this Clause.</td>
</tr>
<tr>
<td>66.1</td>
<td>If the execution of substantially all the Works in progress is prevented for a continuous period of 90 days by reason of Force Majeure of which notice has been given under GCC 62, or for multiple periods which total more than 150 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 GCC 72.5.</td>
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</table>
| 66.2   | Upon such termination, the Project Manager 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) other Costs or liabilities which in the circumstances were reasonably and necessarily 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 labor employed wholly in connection with the Works at the date of termination. |
| 67.1   | 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 fulfill 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,
- 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
- the sum payable by the Employer to the Contractor shall be the
same as would have been payable under GCC 66 if the Contract
had been terminated under GCC 66.

**Finishing the Contract**

68. Completion

68.1 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 work is completed.

68.2 In addition to the other provisions, before acceptance of the completed
works, Employer shall verify and assure that such works are within the
set objective, quality and appropriate to operate and use.

69. Taking Over

69.1 The Employer shall take over the Site and the Works within seven
days of the Project Manager’s issuing a certificate of Completion.

70. Final Account

70.1 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 60 days of receiving the
Contractor’s account if it is correct and complete. If it is not, the
Project Manager shall issue within 60 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.

71. Operating and Maintenance Manuals

71.1 If “as built” Drawings and/or operating and maintenance manuals are
required, the Contractor shall supply them by the dates stated in the
SCC.

71.2 If the Contractor does not supply the Drawings and/or manuals by the
dates stated in the SCC pursuant to GCC 71.1, or they do not receive
the Project Manager’s approval, the Project Manager shall withhold the
amount stated in the SCC from payments due to the Contractor.

72. Termination

72.1 The Employer may terminate the Contract at any time if the
contractor;

a. does not commence the work as per the Contract,
b. abandons the work without completing,
c. fails to achieve progress as per the Contract.

72.2 The Employer or the Contractor may terminate the Contract if the
other party causes a fundamental breach of the Contract.

72.3 Fundamental breaches of Contract shall include, but shall not be limited
to, the following:

(a) The Contractor uses the advance payment for matters other than the
contractual obligations,

b) the Contractor stops work for 30 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;

c) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;

the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation.

a payment certified by the Project Manager is not paid by the Employer to the Contractor within 90 days of the date of the Project Manager’s certificate;

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;

the Project Manager gives two consecutive Notices to update the Program and accelerate the works to ensure compliance with GCC Sub clause 22.1 and the Contractor fails to update the Program and demonstrate acceleration of the works within a reasonable period of time determined by the Project Manager;

e) the Contractor does not maintain a Security, which is required;

f) 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 SCC**; and

g) If the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract, pursuant to GCC 73.1.

72.4 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 72.3 above, the Project Manager shall decide whether the breach is fundamental or not.

72.5 Notwithstanding the above, the Employer may terminate the Contract for convenience.

72.6 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.

<table>
<thead>
<tr>
<th>73. Fraud and Corruption</th>
</tr>
</thead>
<tbody>
<tr>
<td>73.1 If the Employer determines that the Contractor has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 15 days notice to the Contractor, terminate the Contractor’s employment under the Contract and expel him from the Site.</td>
</tr>
</tbody>
</table>

73.2 Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with GCC Clause 15.
For the purposes of this GCC 73;

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

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

“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;

“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;

“obstructive practice” is

(aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a 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

(bb) acts intended to materially impede the exercise of the GON’s/Dp’s inspection and audit rights provided for under GCC28.3.

74. Black Listing

74.1 Without prejudice to any other rights of the Employer under this Contract, GoN, Public Procurement Monitoring Office (PPMO), on the recommendation of procuring entity, may blacklist a Bidder for its conduct for a period of one (1) to three (3) years on the following grounds and seriousness of the act committed by the bidder:

(a) if it is established that the Contractor has committed substantial defect in implementation of the contract or has not substantially fulfilled its obligations under the contract or the completed work is not of the specified quality as per the contract.

(b) If convicted from a court of law in a criminal offense liable to be disqualified for taking part in procurement contract.

(c) If it is established that the Contractor has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

75. Payment upon Termination

75.1 If the Contract is terminated because of a fundamental breach of 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. 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.

75.2 If the Contract is terminated for the Employer’s convenience or because
| 75.3 If the Contract is terminated because of fundamental breach of Contract or for any other fault by the Contractor, the performance security shall be forfeited by the Employer. In such case, amount to complete the remaining works as per the Contract shall be recovered from the Contractor as Government dues. |
| 76. Property |
| 76.1 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. |
| 77. Release from Performance |
| 77.1 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. |
| 78. Suspension of DPLoan/Credit/Grant |
| 78.1 In the event that the DP suspends the loan/ credit/grant 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 DP's suspension notice; and b. if the Contractor has not received sums due him within the 30 days for payment provided for in GCC 49.1, the Contractor may immediately issue a 15-day termination notice. |
| 79. Eligibility |
| 79.1 The Contractor shall have the nationality of an eligible country as specified in Section V of the bidding document. The Contractor shall be deemed to have the nationality of a country if the Contractor is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related services. |
| 79.2 The materials, equipment, and services to be supplied under the Contract shall have their origin in eligible source countries as specified in Section V of the bidding document and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Employer’s request, the Contractor may be required to provide evidence of the origin of materials, equipment, and services. |
| 79.3 For purposes of GCC 79.2, “origin” means the place where the materials and equipment are mined, grown, produced, or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its |
basic characteristics or in purpose or utility from its components.

<table>
<thead>
<tr>
<th>80. Project Manager’s Duties and Authorities</th>
<th>80.1 The Project Manager’s duties and authorities are restricted to the extent as stated in the SCC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>81. Quarries and Spoil Dumps</td>
<td>81.1 Any quarry operated as part of this Contract shall be maintained and left in a stable condition without steep slopes and be either refilled or drained and be landscaped by appropriate planting. Rock or gravel taken from a river shall be removed over some distance so as to limit the depth of material removed at any one location, not disrupt the river flow or damage or undermine the river banks. The Contractor shall not deposit excavated material on land in Government or private ownership except as directed by the Project Manager in writing or by permission in writing of the authority responsible for such land in Government ownership, or of the owner or responsible representative of the owner of such land in private ownership, and only then in those places and under such conditions as the authority, owner or responsible representative may prescribe.</td>
</tr>
<tr>
<td>82. Local Taxation</td>
<td>82.1 The prices bid by the Contractor shall include all taxes that may be levied in accordance to the laws and regulations in being in Nepal on the date 30 days prior to the closing date for submissions of Bids on the Contractor’s equipment, plant and materials acquired for the purpose of the Contract and on the services performed under the Contract. Nothing in the Contract shall relieve the Contractor from his responsibility to pay any tax that may be levied in Nepal on profits made by him in respect of the Contract.</td>
</tr>
<tr>
<td>83. Value Added Tax</td>
<td>83.1 The Contract is not exempted from value added tax. An amount specified in the schedule of taxes shall be paid by the Contractor in the concerned VAT office within time frame specified in VAT regulation.</td>
</tr>
</tbody>
</table>
| 84. Income Taxes on Staff                     | 84.1 The Contractor’s staff, personnel and labor will be liable to pay personal income taxes in Nepal in respect of their salaries and wages, as are chargeable under the laws and regulations for the time being in force, and the Contractor shall perform such duties in regard to such deductions as may be imposed on him by such laws and regulations.  

84.2 The issue of the Final Account Certificate pursuant to clause GCC 70 shall be made only upon submittal by the Contractor of a certificate of income tax clearance from the Government of Nepal. |
| 85. Duties, Taxes and Royalties               | 85.1 Any element of royalty, duty or tax in the price of any goods including fuel oil, and lubricating oil, cement, timber, iron and iron goods locally procured by the Contractor for the works shall be included in the Contract rates and prices and no reimbursement or payment in that respect shall be made to the Contractor.  

85.2 The Contractor shall familiarize himself with GON the rules and regulations with regard to customs, duties, taxes, clearing of goods and equipment, immigration and the like, and it will be necessary for him to follow the required procedures regardless of the assistance as may be provided by the Employer wherever possible. |
85.3 The Contractor shall pay and shall not be entitled to the reimbursement of cost of extracting construction materials such as sand, stone/boulder, gravel, etc. from the river beds or quarries. Such prices
| 86. Member of Government, etc, not Personally Liable | will be levied by the local District Development Committee (DDC) as may be in force at the time. The Contractor, sub-contractor(s) employed directly by him and for whom he is responsible, will not be exempted from payment of royalties, taxes or other kinds of surcharges on these construction materials so extracted and paid for to the DDC. |
| 86.1 No member or officer of GoN or the Employer or the Project Manager or any of their respective employees shall be in any way personally bound or liable for the act or obligations of the Employer under the Contract or answerable for any default or omission in the observance or performance of any act, matter or thing which are herein contained. |
| 87. Approval of Use of Explosives | 87.1 No explosives of any kind shall be used by the Contractor without the prior consent of the Employer in writing and the Contractor shall provide, store and handle these and all other items of every kind whatsoever required for blasting operations, all at his own expense in a manner approved in writing by the Employer. |
| 88 Compliance with Regulations for Explosives | 88.1 The Contractor shall comply with all relevant ordinances, instructions and regulations which the Government, or other person or persons having due authority, may issue from time to time regarding the handling, transportation, storage and use of explosives. |
| 89. Permission for Blasting | 89.1 The Contractor shall at all times maintain full liaison with and inform well in advance, and obtain such permission as is required from all Government authorities, public bodies and private parties whatsoever concerned or affected, or likely to be concerned or affected by blasting operation. |
| 90. Records of Explosives | 90.1 Before the beginning of the Defects Liability Period, the Contractor shall account to the satisfaction of the Project Manager for all explosives brought on to the Site during the execution of the Contract and the Contractor shall remove all unused explosives from the Site on completion of works when ordered by the Project Manager. |
| 91. Traffic Diversion | 91.1 The Contractor shall include the necessary safety procedures regarding and pedestrian traffic diversion that is needed in execution of the works. The Contractor shall include in his costing of works, any temporary works or diversion that are needed during the construction period. All traffic diversion should be designed for the safety of both the motoring public and the men at work. It shall ensure the uninterrupted flow of traffic and minimum inconvenience to the public during the period concerned. As such, adequate warning signs, flagmen and other relevant safety precautionary measures shall be provided to warn motorists and pedestrians well ahead of the intended diversion as directed by the Project Manager. All traffic devices used shall be designed in accordance with the instruction of Project Manager. |
SECTION-IX

Special Conditions of Contract
The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

### A. General

<table>
<thead>
<tr>
<th>GCC 1.1 (q)</th>
<th>The Employer is Department of water resources and Irrigation, Jawalakhel, Lalitpur</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCC 1.1 (v)</td>
<td>The Intended Completion Date for the whole of the Works shall be 18 months after the Agreement</td>
</tr>
<tr>
<td>GCC 1.1 (bb) &amp; 10.1</td>
<td>The Project Manager is Project Director of Mahakali River Training Project. The Project Manager and Engineer are synonyms.</td>
</tr>
<tr>
<td>GCC 1.1 (ee)</td>
<td>The Site is located at Different Locations of Headquarter of Bajhang, Jayaprithvi Municipality, Nepal</td>
</tr>
<tr>
<td>GCC 1.1 (hh)</td>
<td>The Start Date shall be 7 days after the agreement</td>
</tr>
<tr>
<td>GCC 1.1 (hh)(i)</td>
<td>GCC 1.1 (hh) is Replaced by “The start Date shall be 7 days after the Contract agreement.”</td>
</tr>
<tr>
<td>GCC 1.1</td>
<td>The Works consist of Construction of RCC Counterfort Retaining wall and Boulder Riprap.</td>
</tr>
<tr>
<td>GCC 2.2</td>
<td>Sectional Completions are: Not Applicable</td>
</tr>
<tr>
<td>GCC 2.3 (i)</td>
<td>The following documents also form part of the Contract: Performance Security, JV Agreement, Addenda and other clarifications issued before the submission of bid.</td>
</tr>
<tr>
<td>GCC 3.1</td>
<td>The language of the contract is ENGLISH/NEPALI The law that applies to the Contract is the law of NEPAL</td>
</tr>
<tr>
<td>GCC 11.1</td>
<td>The Project Manager may delegate any of his duties and responsibilities</td>
</tr>
<tr>
<td>GCC 13.1</td>
<td>Maximum percentage of subcontracting permitted is: 0 % of the total contract amount Nature of Works that can be sub contracted: Not Applicable Qualification Criteria: Not Applicable</td>
</tr>
</tbody>
</table>
GCC 14.1 Schedule of other contractors: Not Applicable

GCC 19.1 The minimum insurance amounts and deductibles shall be:

2. The minimum cover for loss of or damage to the Works, Plant and Materials is: 115% of the Contract Amount.
3. The maximum deductible for insurance of the Works and of Plant and Materials is: 50000
4. The minimum cover for loss or damage to Equipment is: Full Replacement Cost
5. The maximum deductible for insurance of Equipment is: 50000
6. The minimum for insurance of other property is: 2000000 (Except the works, plants, materials and Equipment) with unlimited number of occurrences
8. The maximum deductible for insurance of other property is: 50000
9. The minimum cover for personal injury or death insurance
   i. for the Contractor's employees is that specified in the Labor act of Nepal and
   ii. for other people is: For Injury 100000 and for death 1000000 with an unlimited number of occurrences

GCC 20.1 Site Investigation Reports are: Not Applicable.

GCC 23.1 The following shall be designed by the Contractor: Temporary Works

GCC 26.1 The Site Possession Date(s) shall be: Within 30 day after signing the contract agreement.

GCC 30.1 The place of arbitration shall be: Kathmandu, Nepal

B. Time Control

GCC 34.1 The Contractor shall submit for approval a Program for the Works within 15 days from the date of the Letter of Acceptance.

GCC 34.3 The period between Program updates is 90 days
   The amount to be withheld for late submission of an updated Program is 5000.00 NPR

C. Quality Control

GCC 42.1 The Defects Liability Period is 365 days

D. Cost Control

GCC 49.1 Prevailing Interest Rate 5%
The Contract is subject to price adjustment, and the following information regarding coefficients does apply.

The coefficients and indices for adjustment of prices in Nepalese Rupees shall be as specified in the Table of Adjustment Data submitted by bidder together with the Letter of Price Bid which is approved by the Project manager.

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Index Description</th>
<th>Source of Index</th>
<th>Base Value</th>
<th>Base Date</th>
<th>Employer's Proposed Weighting coefficient Range from</th>
<th>Employer's Proposed Weighting coefficient Range to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-Adjustable(A)</td>
<td></td>
<td>0.15</td>
<td></td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>2</td>
<td>Labor (b)</td>
<td>&quot;National salary and wage rate index&quot;- &quot;construction labour&quot; of NRB</td>
<td>0</td>
<td>Bid Submission date - 30 days</td>
<td>0.15</td>
<td>0.25</td>
</tr>
<tr>
<td>3</td>
<td>Materials (c)</td>
<td>&quot;National wholesale price index&quot;- &quot;construction materials&quot; of NRB</td>
<td>0</td>
<td>Bid Submission date - 30 days</td>
<td>0.3</td>
<td>0.5</td>
</tr>
<tr>
<td>4</td>
<td>Equipment usage (d)</td>
<td>&quot;National wholesale price index&quot;- &quot;Machinery and Equipment&quot; of NRB</td>
<td>0</td>
<td>Bid Submission date - 30 days</td>
<td>0.2</td>
<td>0.3</td>
</tr>
</tbody>
</table>

GCC 53.1 (i) Base value mentioned in GCC 53.1 will be fixed at the time of Agreement and indices will be take 30 days prior to bid submission.

GCC 53.6 Base Price of Construction Materials applicable for price adjustment shall be as per the Table of Adjustment Data submitted by Bidder together with the Letter of Price Bid which is approved by the Project manager.

GCC 53.6 (i) GCC 53.6 is replaced by "Not Applicable"

GCC 53.7 The Price Adjustment amount :-NA

GCC 54.1 The proportion of payments retained is: 5 %

GCC 55.1 The liquidated damages for the whole of the Works are 0.05 % of the final Contract Price per day. The maximum amount of liquidated damages for the whole of the Works is 10 % of the final Contract Price.

GCC 56.1 The Bonus for the whole of the Works is 0 % per day. The maximum amount of Bonus for the whole of the Works is 0 % of the final Contract Price.
The Advance Payments shall be 15.00% and shall be paid in two equal installments to the Contractor.

<table>
<thead>
<tr>
<th>Installment</th>
<th>Percentage</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Installment</td>
<td>7.50</td>
<td>Acceptable bank guarantee and Insurance policy.</td>
</tr>
<tr>
<td>Second Installment</td>
<td>7.50</td>
<td>Acceptable bank guarantee and full mobilization in site.</td>
</tr>
</tbody>
</table>

GCC 57.3 Deductions from Payment Certificates will commence in the first certificate in which the value of works executed exceeds 30% of the Contract Price. Deduction will be at the rate of 40% of the respective Monthly Interim Payment Certificate until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the end of 80% of the approved contract period.

GCC 57.3(i) SCC (GCC 57.3) is replaced by: "Deductions from Payment Certificates will commence in the first certificate in which the value of works executed exceeds 30% of the Contract Price. Deduction will be made in respective Monthly Interim Payment Certificate in such a way until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the end of 80% of the approved contract period."

GCC 58.1 The Performance Security amount is NRs 15,74,600.00

E. Finishing the Contract

GCC 71.1 The date by which operating and maintenance manuals are required is 0%.

GCC 71.2 The date by which 'as built' drawings are required is within 15 days.
The amount to be withheld for failing to produce "as built" drawings and/or Operating and maintenance manuals is 50000.

GCC 72.3 The maximum number of days is 200 days.

GCC 80 The Project Manager has to obtain the specific approval of the Employer for taking any of the following actions: The Project Manager has to obtain the specific approval of the Employer for taking any of the following actions: a. Approving subcontracting of any part of the works under General Conditions of Contract Clause 13; b. Certifying additional costs determined under General Conditions of Contract Clause 50.2; c. Determining the extension of the intended Completion Date under General Conditions of Contract Clause 35; d. Issuing a Variation under General Conditions of Contract Clause 1 and 46, except in an emergency situation, as reasonably determined by the Project Manager; emergency situation may be defined as the situation when protective measures must be taken for the safety of life or of the works or of adjoining property.
SECTION-X

Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.
Section X: Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.
Letter of Intent  
[on letterhead paper of the Employer]

Date: ... ........................

To: ..................................................Name and address of the Contractor ..................................................

Subject: ........................ Issuance of letter of intent to award the contract............

This is to notify you that, it is our intention to award the contract .......................... [insert date] ..........................for execution of the .......................... [insert name of the contract and identification number, as given in the Contract Data/SCC] to you as your bid price .......................... [insert amount in figures and words in Nepalese Rupees] as corrected and modified in accordance with the Instructions to Bidders is hereby selected as substantially responsive lowest evaluated bid.

Authorized Signature: ..........................

Name: ..........................

Title: ..................................................

CC:
[Insert name and address of all other Bidders, who submitted the bid]

[Notes on Letter of Intent
The issuance of Letter of Intent is the information of the selection of the bid of the successful bidder by the Employer and for providing information to other unsuccessful bidders who participated in the bid as regards to the outcome of the procurement process. This standard form of Letter of Intent to Award should be filled in and sent to the successful Bidder only after evaluation and selection of substantially responsible lowest evaluated bid.]
Letter of Acceptance
[on letterhead paper of the Employer]

Date: ………………………

To: ………………………………. Name and address of the Contractor …………………

Subject: ………………….. Notification of Award

This is to notify that your Bid dated ………………………date………………….. for execution of the……………………name of the contract and identification number, as given in the Contract Data/SCC …………………….. for the Contract price of Nepalese Rupees [insert amount in figures and words in Nepalese Rupees], as corrected in accordance with the Instructions to Bidders is hereby accepted in accordance with the Instruction to Bidders.

You are hereby instructed to contact this office to sign the formal contract agreement within 15 days with Performance Security of NRs. ……….. in accordance with the Conditions of Contract, using for that purpose the Performance security Form included in Section X (Contract Forms) of this Bidding Document.

Authorized Signature: …………………………………

Name and Title of Signatory: ……………………………
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 in
the sum of NRs …..........…..[insert amount of contract price in words and figures including
taxes](hereinafter “the Contract Price”).

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.
   (a) the Letter of Acceptance;
   (b) the Letters of Technical and Price Bid;
   (c) the Addenda Nos ......................... Insert addenda numbers if any .............
   (d) the Special Conditions of Contract;
   (e) the List of Eligible Countries that was specified in Section V of the bidding document,
   (f) the General Conditions of Contract;
   (g) the Specification;
   (h) the Drawings;
   (i) Bill of Quantities (or Schedules of Prices for lump sum contracts), and
   (j) Table of Price Adjustment Data
   (k) List of Approved Subcontractors [For GoN funded project]
   (l) .................................................... ..[Specify if there are any other document]

3. In consideration of the payments to be made by the Employer to the Contractor as indicated 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 Nepal on the day, month and year indicated above.

Signed by ………………………….
for and on behalf the Contractor in the presence
of Witness, Name Signature, Address, Date

Signed by…………………………..
for and on behalf of the Employer in the presence of
Witness, Name, Signature, Address, Date
List of Approved Subcontractors

In accordance with GCC Sub-Clause 13.1, The following Subcontractors are approved for carrying out the work as specified below.

<table>
<thead>
<tr>
<th>Name of Subcontractors</th>
<th>Description of Works</th>
<th>Value/Percentage of subcontract</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
Performance Security
(On letterhead paper of the Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.)

............................

Bank’s Name, and Address of Issuing Branch or Office

Beneficiary: ..............................................

Name and Address of Employer ...................................

Date: ...................................................

Performance Guarantee No.:...........................................

We have been informed that ... ... [insert name of the Contractor] (hereinafter called "the Contractor") has been notified by you to sign the Contract No. ..................... [insert reference number of the Contract] for the execution of ............ [insert name of contract and brief description of Works] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we... .................................. . [insert name of the Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ..............[insert name of the currency and amount in figures*] (......... ... insert amount in words) such sum being payable in Nepalese Rupees, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the………………………..Day of ………………… **, and any demand for payment under it must be received by us at this office on or before that date.

...................................................

Seal of Bank and Signature(s)

Note:
All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.
* The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract in Nepalese Rupees.
** Insert the date thirty days after the date specified for the Defect Liability Period. The Employer should note that in the event of an extension of the time 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], 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”.

*DoWRI/MRTP/CPBJ/WORKS/NCB-5
Advance Payment Security
(On letterhead paper of the Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.)

Bank’s Name, and Address of Issuing Branch or Office

Beneficiary: Name and address of employer

Date: 

Advance Payment Guarantee No.

We have been informed that has entered into Contract No. Name and Address of Employer, name of the Contractor, reference number of the Contract, dated with you, for the execution of contract and brief description of Works. (hereinafter called “the Contractor”).

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum, name of the currency and amount in figures*...(amount in words ....) is to be made against an advance payment guarantee.

At the request of the Contractor, we... name of the Bank hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of... name of the currency and amount in figures*... (amount in words ... ) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that eighty (80) percent of the Contract Price has been certified for payment, or on the ... day of **, whichever is earlier.

Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

Seal of Bank and Signature(s)

Note:
All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document. *The Guarantor shall insert an amount representing the amount of the advance payment in Nepalese Rupees of the advance payment as specified in the Contract.
** Insert the date Thirty days after the expected completion date. The Employer should note that in the event of an extension of the time 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], 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”.

DoWRI/MRTP/CPBJ/WORKS/NCB-5
Invitation for Online Bids
Government of Nepal
Ministry of Energy, Water Resources and Irrigation
Department of Water Resources and Irrigation
Mahakali River Training Project, Darchula
(Date of publication: 06, July, 2020)

7. The Government of Nepal [GoN] has allocated funds towards the cost of Mahakali River Training Project, Darchula [MRTP] and intends to apply part of the funds to cover eligible payments under the Contract for construction of River Training Infrastructures. Bidding is open to all eligible Nepalese Bidders.
8. MRTP invites electronic bids from eligible bidders for the execution of following works under National Competitive Bidding - Single Stage Two Envelopes Bidding Procedures.
9. Bidders may obtain further information at the office of Mahakali River Training Project, Darchula, Tel: +977 -93 420360; Facsimile: +977-93 420360 or may visit PPMO e-GP system http://www.bolpatra.gov.np/egp.
10. Bidding Documents are available online and can be downloaded from PPMO e-GP system http://www.bolpatra.gov.np/egp. Interested bidder should register in the e-GP system and deposit the cost of Bidding Documents in the Project’s Rajaswa (revenue) account as specified below on or before office hour of Nrs.5,000 and the scanned copy (pdf format) of the Bank deposit voucher shall be uploaded by the bidder at the time of electronic submission of the bids.

Name of the Bank: RastriyaBanijyaBank, Darchula
Name of Office: Treasury and Account Controller Office, Darchula Office Code no.: 14229 Dharauti Account No.: 1-1-001, Rajaswa (revenue) Shirshak no. : 14229 Dharauti Account No: 409020300000.
8. Pre-bid meeting shall be held at Room No. 322 of Department of Water Resources and Irrigation, Jawalakhel, Lalitpur at 13:00 hrs on 26, July, 2020.
9. Bidders have to submit their bid electronically and must be submitted through PPMO e-GP System http://www.bolpatra.gov.np/egp or before 12.00 hrs on 6, August, 2020. Bids received after this deadline will be rejected. Hardcopy submission is not permitted.

13. Modification/Withdrawal of the bid shall be done before 24 hrs of last date of bid submission deadline.
14. The Technical bids will be opened in the presence of Bidders’ representatives who choose to attend at 13:00 hrs on 6, August, 2020 at Room No. 322 of Department of Water Resources and Irrigation, Jawalakhel, Lalitpur. Bid validity period is stated in the following table which must be accompanied by a scanned copy of the bid security in pdf Format amounting stated in the table below, which shall be valid for 30 days beyond (i.e. 03, November, 2020) the validity period of the bids.
15. If the last date of purchase and /or submission falls on a government holiday, the next working day shall be considered as the last date. In such case the validity period of the bid security shall remain the same as specified for the original last date of bid submission.
16. Other mandatory information shall be as per PPA-2063, PPR-2064.

<table>
<thead>
<tr>
<th>Contract Identification No</th>
<th>Description of works</th>
<th>Bid Validity</th>
<th>Bid-Security (Nrs.)</th>
<th>Cost of Bidding Documents (Nrs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DoWRI/MRTP/CPBJ/WORKS/NCB-05</td>
<td>Construction of RCC Counterfort Retaining wall and Boulder Riprap</td>
<td>04, October, 2020 (90 Days)</td>
<td>15,74,600.00</td>
<td>5,000.00</td>
</tr>
</tbody>
</table>

Project Director

Note: Provision Hard copy Submission of bids in system generated notice of bidding document is amended by this notice with electronic submission only.
SECTION-VI
Bill of Quantities
# Bill of Quantities

## 1 Provisional Sum

<table>
<thead>
<tr>
<th>SL. No</th>
<th>Item Description</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Rate (NPR)</th>
<th>Amount (NPR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>As Built Drawing</td>
<td>PS</td>
<td>1.0</td>
<td>35355.44</td>
<td>35,355.44</td>
</tr>
<tr>
<td>2</td>
<td>Lab Test</td>
<td>PS</td>
<td>1.0</td>
<td>106066.32</td>
<td>106,066.32</td>
</tr>
<tr>
<td>3</td>
<td>Insurance of works</td>
<td>PS</td>
<td>1.0</td>
<td>106066.32</td>
<td>106,066.32</td>
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<tr>
<td>4</td>
<td>Third Party Insurance</td>
<td>PS</td>
<td>1.0</td>
<td>106066.32</td>
<td>106,066.32</td>
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<tr>
<td>5</td>
<td>Insurance against accident of workman</td>
<td>PS</td>
<td>1.0</td>
<td>106066.32</td>
<td>106,066.32</td>
</tr>
</tbody>
</table>

## 2 Construction work

### 2.1 River Training Work

#### 2.1.1 Civil Work

<table>
<thead>
<tr>
<th>SL. No</th>
<th>Item Description</th>
<th>Unit</th>
<th>Quantity</th>
<th>Bidder's Rate (NPR)</th>
<th>Bidder's Rate (in words)</th>
<th>Total Amount (NPR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Maintainance of access road, river diversion and dewatering works for workability till the completion of works</td>
<td>Job</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>E/W in excavation in foundation for structures in all kind of soils (Dry and Wet condition)</td>
<td>m3</td>
<td>4289.7</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>Concreting of foundation vertical faces, walls (Cement concrete) including supply of materials and haulage distance upto 30 m (PCC 1:3:6) all complete works.</td>
<td>m3</td>
<td>135.0</td>
<td></td>
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<tr>
<td>4</td>
<td>Concreting of superstructure, deck slabe, beams (Cement concrete) including supply of materials &amp; haulage distance up to 30m P.C.C.(1:1.5:3) all complete works.</td>
<td>m3</td>
<td>1870.25</td>
<td></td>
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<tr>
<td>5</td>
<td>Providing, and laying reinforcement including cutting bending, fixing in position and lead 30m etc all complete as per specification</td>
<td>Mt.</td>
<td>113.71</td>
<td></td>
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<tr>
<td>6</td>
<td>Making Wooden forms including supply and selection of materials, fixing nailing according to drawings placing separators, dismentaling forms and hauling upto 30m (Scrap value neglected) (6 times Usage)</td>
<td>m2</td>
<td>5612.65</td>
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<tr>
<td>7</td>
<td>Back Filling with ordinary soils in 15cm thick layers and hand compaction (Haulage Distance 10m) with no Sprinkling water</td>
<td>m3</td>
<td>3590.88</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>Hire charge of 0.6m3 capacity of excavator for making Boulder rip rap infront of RCC wall</td>
<td>Hr.</td>
<td>18.0</td>
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<tr>
<td>Total of Procument Items</td>
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<tr>
<td><strong>Total Item Price</strong></td>
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<td><strong>VAT</strong></td>
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<tr>
<td><strong>Grand Total</strong></td>
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</tbody>
</table>