



BIDDING DOCUMENT

for

THE PROCUREMENT OF

Construction of Khaltetar Lift Irrigation Sub- Project, Sunkoshi Ga. Pa.-6, Sindhuli

National Competitive Bidding (NCB)

Single-Stage: Single-Envelope Bidding Procedure

Sunkoshi Main Diversion Multipurpose Project

Issued on: **June 23, 2025**

Issued to: **All Eligible Bidders**

Invitation for Bids No.: **SMDMP/WORKS/NCB/LIFT-03/81-82**

NCB No.: **SMDMP/WORKS/NCB/LIFT-03/81-82**

Contract Identification No.: **SMDMP/WORKS/NCB/LIFT-03/81-82**



Abbreviations

BD	Bidding Document
BDF	Bidding Forms
BDS	Bid Data Sheet
BOQ	Bill of Quantities
COF	Contract Forms
DP	Development Partners
DoLI.....	Department of Local Infrastructure
e-GP.....	Electronic Government Procurement
ELI	Eligibility
EEC.....	Evaluation and Eligibility Criteria
GCC	General Conditions of Contract
GoN ¹	Government of Nepal
ICC	International Chamber of Commerce
IFB	Invitation for Bids
ITB	Instructions to Bidders
JV	Joint Venture
NCB	National Competitive Bidding
PAN	Permanent Account Number
PPA	Public Procurement Act, 2063
PPMO	Public Procurement Monitoring Office
PPR	Public Procurement Regulations, 2064
PS	Provisional Sum
SBD	Standard Bidding Document
SCC	Special Conditions of Contract
TS	Technical Specifications
VAT	Value Added Tax
WRQ	Works Requirements

¹ “GoN” word indicates all public entities according to Public Procurement Act, 2063

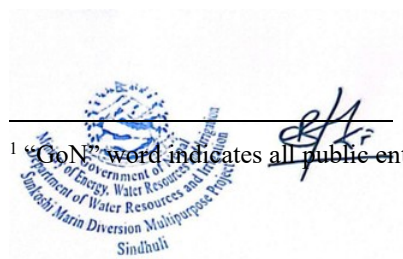


Table of Contents

Invitation for Bids	1
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Part - I Bidding Procedures

Section - I Instructions to Bidders	4
Section - II Bid Data Sheet.....	22
Section - III Evaluation and Eligibility Criteria.....	26
Section – IV Bidding Forms.....	28

Part - II Requirements

Section - V Works Requirements	41
Section - VI Bill of Quantities.....	46

Part - III Conditions of Contract and Contract Forms

Section - VII General Conditions of Contract.....	56
Section - VIII Special Conditions of Contract.....	82
Section - IX Contract Forms	86



Invitation for Bids

Government of Nepal

Ministry of Energy, Water Resources and Irrigation

Department of Water Resources and Irrigation

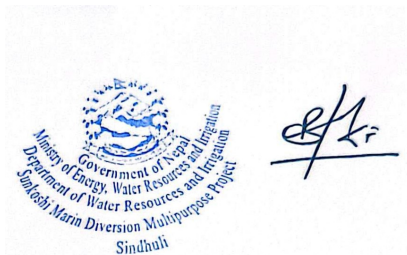
Sunkoshi Marin Diversion Multipurpose Project

Sindhuli

Invitation for Bids No: **SMDMP/WORKS/NCB/LIFT-03/81-82**

Date of publication: **23rd June, 2025**

1. **Sunkoshi Marin Diversion Multipurpose Project (SMDMP)** invites sealed bids or electronic bids from Nepalese eligible bidders for the construction of **Khaltetar Lift Irrigation Sub Project, Sunkoshi Ga. Pa.-6 Sindhuli** under National Competitive Bidding procedures. The estimated amount for the works is **NRs. 78,01,572.36**
2. Eligible Bidders may obtain further information and inspect the Bidding Documents at the office of **Sunkoshi Marin Diversion Multipurpose Project (SMDMP), Sindhuli** or may visit PPMO website www.bolpatra.gov.np/egp.
3. Bidder who chooses to submit their bid electronically may download the bidding documents for e-submission from PPMO's Web Site www.bolpatra.gov.np/egp. Bidders, submitting their bid electronically, should deposit the cost of bidding document as **NRs. 3000.00** 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. Information to deposit the cost of bidding document in Bank:
Name of the Bank: **Rastriya Banijya Bank Ltd.**
Name of Office: **Sunkoshi Marin Diversion Multipurpose Project**
Office Code no. : **308032501**
Office Account no.: **1000100200010000**
Rajaswa (revenue) Shirshak no. : **14229**
4. Electronic bids must be submitted through PPMO website www.bolpatra.gov.np/egp on or before **12:00 hrs** on **23rd July 2025**. Bids received after this deadline will be rejected.
6. The bids will be opened in the presence of Bidders' representatives who choose to attend at **13:00 hrs on 23rd July 2025** at the office of **Sunkoshi Marin Diversion Multipurpose Project, Sindhuli**. Bids must be valid for a period of **90 days** from the bid submission deadline 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.190,000.00** which shall be valid for 30 days beyond the validity period of the bid.
7. 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 and bid security shall remain the same as specified for the original last date of bid submission.



Part - I Bidding Procedures

Table of Contents

Section-I Instruction to Bidders.....	4
A. General	4
1. Scope of Bid	4
2. Source of Funds	4
3. Fraud and Corruption	4
4. Eligible Bidders	7
5. Eligible Materials, Equipment and Services	8
B. Contents of Bidding Document	9
6. Sections of Bidding Document	9
7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting	9
8. Amendment of Bidding Document	10
C. Preparation of Bids	10
9. Cost of Bidding	10
10. Language of Bid	10
11. Documents Comprising the Bid	11
12. Letter of Bid and Schedules	11
13. Bid Prices and Discounts	11
14. Currency of Bid and Payment	12
15. Period of Validity of Bids	12
16. Bid Security	12
17. Format and Signing of Bid	13
D. Submission and Opening of Bids	14
18. Sealing and Marking of Bids	14
19. Deadline for Submission of Bids	14
20. Late Bids	14
21. Withdrawal and Modification of Bids	14
22. Bid Opening	15
E. Evaluation and Comparison of Bids	16
23. Confidentiality	16
24. Clarification of Bids	16
25. Deviations, Reservations, and Omissions	17
26. Determination of Responsiveness	17
27. Nonconformities, Errors, and Omissions	17
28. Correction of Arithmetical Errors	18
29. Evaluation of Bids	18
30. Comparison of Bids	19
31. Employer's Right to Accept Any Bid, and to Reject Any or All Bids... ..	19
F. Award of Contract	19
32. Award Criteria	19
33. Letter of Intent to Award the Contract/ Notification of Award	19
34. Performance Security	20
35. Signing of Contract	20
36. Complaint and Review	21



SECTION– I: Instructions to Bidders

This section specifies the procedures to be followed by Bidders in the preparation and submission of their Bids. Information is also provided on the submission, opening, and evaluation of bids and on the award of contract.

A. General	
1. Scope of Bid	<p>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 V (Works Requirements). The name, identification, and number of lots (Contracts) / multiple contracts of the National Competitive Bidding (NCB) are provided in the BDS.</p> <p>1.2 Throughout this Bidding Document:</p> <ul style="list-style-type: none"> (a) the term “in writing” means communicated in written form and delivered against receipt through e-GP system or e-mail or fax or courier ; (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 (c) “day” means calendar day.
2. Source of Funds	<p>2.1 GoN Funded: In accordance with its annual program and budget, approved by the GoN, the implementing agency indicated in the BDS plans to apply a portion of the allocated budget to eligible payments under the contract(s) for which this Bidding Document is issued.</p> <p>Or</p> <p>Public Entities' own Resource Funded: In accordance with its annual program and budget, approved by the public entity, the implementing agency indicated in the BDS plans to apply a portion of the allocated budget to eligible payments under the contract(s) for which this Bidding Document is issued.</p> <p>Or</p> <p>DP Funded: The GoN has applied for or received financing (hereinafter called “funds”) from the Development Partner (hereinafter called “the DP”) indicated in the BDS 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.</p> <p>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.</p>
3. Fraud and Corruption	<p>3.1 Procuring Entities as well as bidders, suppliers and contractors and their sub-contractors under GoN/DP-financed contracts, shall adhere to the highest standard</p>

of ethics during the procurement and execution of such contracts. In pursuance of this;

(a) the Employer adopts, for the purposes of this provision, the terms as defined below:

(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.

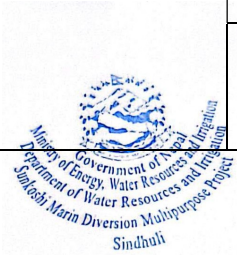
(v) “obstructive practice” means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an investigation; (b) making false statements to investigators in order to materially impede an investigation; (c) failing to comply with requests to provide information, documents, 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.

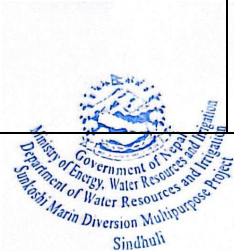
(b) the Employer will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the contract;

(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

	<p>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</p> <p>(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.</p>
	<p>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 :</p> <ul style="list-style-type: none"> (a) give or propose improper inducement directly or indirectly, (b) distortion or misrepresentation of facts, (c) engaging in corrupt or fraudulent practice or involving in such act, (d) interference in participation of other competing bidders, (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, (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, (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.
	<p>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:</p> <ul style="list-style-type: none"> (a) if convicted by a court of law in a criminal offence which disqualifies the Bidder from participating in the contract, (b) if it is established that the contract agreement signed by the Bidder was based on false or misrepresentation of Bidder's qualification information, (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. (d) if the successful bidder fails to sign the contract. (e) if the bidder fails to inform about the saturation of maximum number of contracts as per ITB 4.9.
	<p>3.4 A bidder declared blacklisted and ineligible by the GoN, Public Procurement Monitoring Office (PPMO), by a competent authority under the prevailing law for failure to repay a loan disbursed by a bank or financial institution, and/or the DP in</p>

	<p>case of DP funded project, shall be ineligible to bid for a contract during the period of time determined by the GoN, PPMO, the competent authority and/or the DP.</p> <p>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.</p> <p>3.6 Furthermore, Bidders shall be aware of the provisions of GCC 28.3 and GCC 72.3(j).</p>
<p>4. Eligible Bidders</p>	<p>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:</p> <p>(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. The eligibility criteria requirement of the parties to the JV shall be as specified in Section III Evaluation and Eligibility Criteria, and</p> <p>(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.</p> <p>4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of any country or eligible countries mentioned in the BDS. 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.</p> <p>4.3 A Bidder shall not have a conflict of interest. A Bidder found to have a conflict of interest shall be disqualified. if any of, including but not limited to, the following apply:</p> <p>(a) they have controlling partners in common; or</p> <p>(b) they receive or have received any direct or indirect subsidy from any of them; or</p> <p>(c) they have the same legal representative for purposes of this bid; or</p> <p>(d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or improperly influence on the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or</p> <p>(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</p> <p>(f) a Bidder or any of its affiliated entity, participated as a consultant in the</p>

	<p>preparation of the design or technical specifications of the works that are the subject of the Bid; or</p> <p>(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. or</p> <p>(h) a Bidder that has a close business or family relationship with a professional staff of the Procuring Entity.</p>
	<p>4.4 A firm that is under a declaration of ineligibility by the GoN/DP 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.</p>
	<p>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.</p>
	<p>4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.</p>
	<p>4.7 Firms shall be excluded in any of the cases, if</p> <ul style="list-style-type: none"> (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. (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; (c) DP Funded: a firm has been determined to be ineligible by the DP in relation to their guidelines or appropriate provisions on preventing and combating fraud and corruption in projects financed by them.
	<p>4.8 The Bidder, including all parties constituting the Bidder, shall be ineligible to participate in the open competitive bidding process if it has already secured maximum number of construction contracts (in open competitive bidding) as specified in BDS and has not yet completed the work as stipulated in the respective contracts.</p> <p>4.9 For the purpose of ITB 4.8 above, the bidder shall declare that the bidder, and all parties constituting the Bidder have not already secured maximum number of construction contracts (in open competitive bidding in procurement of works) as specified in BDS. If the bidder, and all parties constituting the Bidder has participated in bidding processes of many public entities and during that period the maximum number of contracts have been attained as specified saturates due to issuance of letters</p>

	of acceptance by a particular public entity, the bidder shall inform in writing to all other concerned public entities, where the bidder have participated in bidding process, within three days of issuance of last letter of acceptance that saturates the maximum number of contracts as specified.
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 the BDS 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 Eligibility Criteria (EEC) Section IV Bidding Forms (BDF) PART II Requirements Section V Works Requirements (WRQ) Section VI Bill of Quantities (BOQ) PART III Conditions of Contract and Contract Forms Section VII General Conditions of Contract (GCC) Section VIII Special Conditions of Contract (SCC) Section IX Contract Forms (COF)
	6.2 The Invitation for Bids (IFB) 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.

<p>7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting</p>	<p>7.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer's address indicated in the BDS 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 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 17.2</p> <p>7.2 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.</p> <p>7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.</p> <p>7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage. 7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer as mentioned in BDS.</p> <p>7.5 The Bidder is requested, to submit any questions in writing, to reach the Employer as mentioned in BDS.</p> <p>7.6 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.</p> <p>7.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.</p>
<p>8. Amendment of Bidding Document</p>	<p>8.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addendum or several addenda.</p> <p>8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3.</p> <p>8.3 To give prospective Bidders reasonable time in which to take an addendum into account</p>

	in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 19.2. However, the time available to submit bids shall not be less than five (5) days since amendment in bidding document.
C. Preparation of Bids	
9. Cost of Bidding	9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
10. Language of Bid	10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in 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.
11. Documents Comprising the Bid	<p>11.1 The Bid shall comprise the following:</p> <ul style="list-style-type: none"> (a) Letter of Bid; (b) completed Bill of Quantities (BoQ), in accordance with ITB 12 and ITB 13, or as stipulated in the BDS; (c) Bid Security, in accordance with ITB 16; (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 17.2; (e) documentary evidence of establishing the Bidder's eligibility; (f) 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; (g) Table of Price Adjustment (if applicable); and (h) any other required documents required, in the BDS. <p>11.2 The Bidder is solely responsible for the authenticity of the submitted documents.</p>
12. Letter of Bid and Schedules	12.1 The Letter of Bid, Schedules, and all documents listed under ITB 11, shall be prepared using the relevant forms in Section IV (Bidding Forms) and in Section VI (Bill of Quantities). The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
13. Bid Prices and Discounts	<p>13.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Schedules shall conform to the requirements specified below.</p> <p>13.2 The Bidder shall submit a bid for the whole of the works described in ITB 1.1 by filling in prices for all items of the Works, as identified in Section VI (Bill of Quantities). In case of Unit Rate Contracts, the Bidder shall fill in rates and prices for all items of the</p>

	Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.
	13.3 The price to be quoted in the Letter of Bid shall be the total price of the Bid, excluding any discounts offered. Absence of the total price in the Letter of Bid may result in rejection of the Bid.
	13.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Bid, in accordance with ITB 12.1.
	13.5 If so indicated in ITB 1.1 and ITB 29.4, bids are invited for individual Contracts or for any combination of Contracts (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 13.4, provided the bids for all Contracts are submitted and opened at the same time.
	13.6 Unless otherwise provided in the BDS and the Conditions of Contract, the prices quoted by the Bidder shall be fixed. If the prices quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Table of Adjustment Data in Section IV (Bidding Forms) and the Employer may require the Bidder to justify its proposed indices and weightings.
	13.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 30 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total bid price submitted by the Bidder.
14. Currency of Bid and Payment	14.1 The currency of the bid and payment shall be in Nepalese Rupees.
15. Period of Validity of Bids	<p>15.1 Bids shall remain valid for the period specified in the BDS. The bid validity period shall start from the bid submission deadline as prescribed by the Employer in accordance with ITB 19.1. If the prescribed bid submission deadline date falls on a government holiday, then the next working day shall be considered as the bid submission deadline date. In such case the validity period of the bids shall be considered from the original bid submission deadline date.</p> <p>In the case of electronic bid submission, if any technical issue arises in the handling of the e-GP system, the PPMO may extend the deadline for bid submission. However, the validity period of the bids shall still be counted from the original bid submission deadline.</p> <p>A bid valid for a shorter period shall be rejected by the Employer as nonresponsive.</p> <p>15.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 16, 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</p>

	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.
16. Bid Security	<p>16.1 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.</p> <p>16.2 The bid security shall be, at the Bidder's option, in any of the following forms:</p> <ul style="list-style-type: none"> (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. <p>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 15.2.</p> <p>A bid security valid for a shorter period shall be rejected by the Employer as nonresponsive.</p> <p>16.3 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.</p> <p>16.4 The public entity shall return the bid securities except those that are to be forfeited as per ITB 16.5 to the respective bidders within three (3) days after the successful bidder has furnished the required performance security and signed the Contract Agreement pursuant, to ITB 34.1 and ITB 35.1.</p> <p>16.5 The bid security shall be forfeited if:</p> <ul style="list-style-type: none"> (a) a Bidder requests for withdrawal or modification of its bid, except as provided in ITB 15.2: <ul style="list-style-type: none"> (i) during the period of bid validity specified by the Bidder on the 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 Bid, in case of hard copy submission. (b) a Bidder changes the prices or substance of the bid while providing information pursuant to ITB 24.1; (c) a Bidder involves in fraud and corruption pursuant to ITB 3.1; (d) the successful Bidder fails to: <ul style="list-style-type: none"> (i) furnish a performance security in accordance with ITB 29.5 and ITB 34.1;

	<p>(ii) sign the Contract in accordance with ITB 35.1 or</p> <p>(iii) accept the correction of arithmetical errors pursuant to ITB 28.1;</p> <p>16.6 The Bid Security of a JV shall be in the name of the JV that submits the bid. If the JV 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.</p>
<p>17. Format and Signing of Bid</p>	<p>17.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11 and clearly mark it ORIGINAL". 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 18.1(b),</p> <p>17.2 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.</p> <p>17.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.</p>
<p style="text-align: center;">D. Submission and Opening of Bids</p>	
<p>18. Sealing and Marking of Bids</p>	<p>18.1 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:</p> <p>(a) Bidders submitting bids by mail, by hand or by courier</p> <p>i. Bidders shall enclose the original and each copy of the Bid. These envelopes containing the original and the copies shall then be enclosed in one single envelope.</p> <p>ii. The inner and outer envelopes shall:</p> <p>(aa) bear the name and address of the Bidder;</p> <p>(bb) be addressed to the Employer as provided in BDS19.1;</p> <p>(cc) bear the specific identification of this bidding process indicated in BDS 1.1; and</p> <p>(dd) bear a warning not to open before the time and date for bid opening.</p> <p>iii. 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.</p> <p>(b) Bidders submitting Bids electronically shall follow the electronic bid submission procedure specified in BDS.</p>
<p>19. Deadline for Submission of Bids</p>	<p>19.1 Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS.</p>

	<p>In case of e-submission, the standard time for e-submission is Nepalese 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.</p> <p>19.2 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.</p>
<p>20. Late Bids</p>	<p>20.1 The Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 19. Any bid received by the Employer after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.</p>
<p>21. Withdrawal, and Modification of Bids</p>	<p>21.1 A Bidder may withdraw, or modify its bid after it has been submitted either in hard copy or by e-submission. Procedures for withdrawal or modification of submitted bids are as follows:</p> <p>(i) Bids submitted in hard Copy</p> <p>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 17.2 before 24 hours prior to the last deadline of submission of bid. The corresponding modification of the bid must accompany the respective written notice. All notices must be:</p> <p>(aa) prepared and submitted in accordance with ITB 17 and ITB 18, and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL”, “MODIFICATION;” and</p> <p>(bb) received by the Employer twenty-four hour prior to the deadline prescribed for submission of bids, in accordance with ITB 19.</p> <p>ii) E-submitted bids.</p> <p>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.</p> <p>21.2. Bids requested to be withdrawn in accordance with ITB 21.1 shall not be opened. In case of hard copy submission, the Bid will be returned unopened to the Bidders.</p> <p>21.3 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.</p> <p>21.4 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.</p> <p>21.5 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.</p>

	<p>21.6 The following provisions apply for withdrawal or modification of the Bids:</p> <p>(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.</p> <p>(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 Bid or any extension thereof.</p> <p>21.7 Once a Bid is withdrawn, bidder will not be able to submit another bid for the same bid.</p>
<p>22. Bid Opening</p>	<p>22.1 The Employer shall open the bids in public at the address, date and time specified in the BDS in the presence of Bidders' designated representatives who choose to attend.</p> <p>22.2 The Employer shall download the e-submitted bid files. The e-GP system allows the Employer to download the e-submitted bid files (report) only after bid opening date and time after login simultaneously by two members of the Bid opening committee.</p> <p>22.3 Electronically submitted 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 bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files shall be considered incomplete.</p> <p>22.4 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 bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at bid opening. Only envelopes that are opened and read out at bid opening shall be considered further.</p> <p>22.5 All other envelopes shall be opened one at a time, reading out: the name of the Bidder; the Bid Price(s), including any discounts and alternative bids and indicating whether there is a modification; the presence of a bid security and any other details as the Employer may consider appropriate. Only discounts and alternative offers read out at bid opening shall be considered for evaluation. No bid shall be rejected at bid opening except for late bids, in accordance with ITB 20.1.</p> <p>22.6 The Employer shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, or modification; the Bid Price, per Contract if applicable, including any discounts and alternative offers; 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.</p>
<p>E. Evaluation and Comparison of Bids</p>	
<p>23. Confidentiality</p>	<p>23.1 Information relating to the examination, evaluation, comparison, and recommendation</p>

	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.
	23.2 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.
	23.3 Notwithstanding ITB 23.2, 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.
24. Clarification of Bids	24.1 To assist in the examination, evaluation, and comparison of the 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 prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids, in accordance with ITB 28. In case of e-submission of bid, upon notification from the employer, the bidder shall also submit the original of documents comprising the bid as per ITB 11.1 for verification of submitted documents for acceptance of the e-submitted bid.
	24.2 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.
25. Deviations, Reservations, and Omissions	<p>25.1 During the evaluation of bids, the following definitions apply:</p> <p>(a) "Deviation" is a departure from the requirements specified in the Bidding Document;</p> <p>(b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and</p> <p>(c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.</p>
26. Determination of Responsiveness	26.1 The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB 11.
	<p>26.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,</p> <p>(a) if accepted, would:</p> <p>(i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or</p> <p>(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</p> <p>(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.</p>
	26.3 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.

	<p>26.4 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 24.1, the bid shall not be considered for further evaluation.</p> <p>26.5 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.</p>
<p>27. Nonconformities, Errors, and Omissions</p>	<p>27.1 Provided that a bid is substantially responsive, the Employer may waive any non-conformities in the bid that do not constitute a material deviation, reservation, or omission.</p> <p>27.2 Provided that a bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the bid. Failure of the Bidder to comply with the request may result in the rejection of its bid.</p> <p>27.3 Provided that a bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component. The adjustment shall be made using the methods indicated in Section III (Evaluation and Eligibility Criteria).</p> <p>27.4 If the monetary value of such non-conformities is found to be more than fifteen percent of the Bid Price of the bidder on account of minor discrepancies pursuant to ITB 27.3, such bid shall be considered non responsive and shall not be involved in evaluation.</p>
<p>28. Correction of Arithmetical Errors</p>	<p>28.1 Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:</p> <p>(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;</p> <p>(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and</p> <p>(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 Bid, the bid price in the Summary of Bill of Quantities will prevail and the bid amount in item (c) of the Letter of Bid will be corrected.</p> <p>(d) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the</p>

	amount in figures shall prevail subject to (a) ,(b) and (c) above.
	28.2 If the Bidder that submitted the lowest evaluated bid does not accept the correction of errors, its bid shall be disqualified and its bid security shall be forfeited.
29. Evaluation of Bids	<p>29.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.</p> <p>29.2 To evaluate a bid, the Employer shall consider the following:</p> <ul style="list-style-type: none"> (a) the bid price, excluding Value Added Tax and Provisional Sums in the Summary Bill of Quantities, for Unit Rate Contracts, or Schedule of Prices for lump sum Contracts, but including Day work items, where priced competitively; (b) adjustment for correction of arithmetic errors in accordance with ITB 28.1; (c) adjustment due to discounts offered in accordance with ITB 13.4; (d) adjustment for nonconformities in accordance with ITB 27.3; (e) application of all the evaluation factors indicated in Section III (Evaluation and Eligibility Criteria); <p>29.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.</p> <p>29.4 If this Bidding Document allows Bidders to quote separate prices for different Lots (Contracts), and to award multiple Contracts to a single Bidder as specified in BDS, the methodology to determine the lowest evaluated price of the Contract combinations, including any discounts offered in the Letter of Bid, is specified in Section III (Evaluation and Eligibility Criteria).</p> <p>29.5 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.</p> <p>29.6 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 24.1, the bid shall not be considered for further evaluation.</p> <p>29.7 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.</p>

30. Comparison of Bids	30.1 The Employer shall compare all substantially responsive bids in accordance with ITB 29.2 to determine the lowest evaluated bid.
31. Employer's Right to Accept Any Bid, and to Reject Any or All Bids	<p>31.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to Contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.</p> <p>31.2 The public entity shall give notice of the rejection of bids or the cancellation of the procurement proceedings pursuant to ITB 31.1, along with the reasons for such rejection or cancellation, to all bidders participating in the bid.</p> <p>31.3 Where any bidder requests, within thirty (30) days of the communication of the notice pursuant to ITB 31.2, the grounds for the rejection of all bids or the cancellation of the procurement proceedings, the public entity shall provide such information to that bidder.</p>
F. Award of Contract	
32. Award Criteria	32.1 The Employer shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.
33. Letter of Intent to Award the Contract/Notification of Award	<p>33.1 The Employer shall notify the concerned Bidder whose bid has been selected in accordance with ITB 32.1 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.</p> <p>33.2 After issuance of the notice under ITB 33.1 if the concerned bidder provides information pursuant to ITB 4.9 regarding saturation of maximum number of contracts, the employer shall disqualify the bidder and shall select the next lowest evaluated Bidder in accordance with ITB 32.1 and notify accordingly as per ITB 33.1.</p> <p>33.3 If no bidder submits an application pursuant to ITB 36 within a period of seven days of the notice provided under ITB 33.1, the Employer shall, accept the bid selected in accordance with ITB 32.1 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.</p> <p>33.4 After communicating letter of acceptance under ITB 33.3, if the concerned bidder provides information pursuant to ITB 4.9 regarding saturation of maximum number of contracts, the employer shall reject the bid of that bidder and shall select the next lowest evaluated Bidder in accordance with ITB 32.1 and shall issue the notice accordingly as per ITB 33.1. In such case bid security of the rejected bidder shall not be forfeited.</p> <p>33.5 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</p>

	bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.
34. Performance Security	<p>34.1 Within Fifteen (15) days of the receipt of Letter of Acceptance from the Employer, the successful Bidder shall furnish the performance security as under mentioned from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal in accordance with the conditions of Contract using Sample Form for the Performance Security included in Section IX (Contract Forms), or another form acceptable to the Employer.</p> <p>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.</p> <p>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:</p> <p>Performance Security Amount = $[(0.85 \times \text{Cost Estimate} - \text{Bid Price}) \times 0.5] + 5\% \text{ of Bid Price}$.</p> <p>The Bid Price and Cost Estimate shall be without VAT and Contingencies but including Provisional Sum.</p> <p>34.2 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 33.</p>
35. Signing of Contract	<p>35.1 The Employer and the successful Bidder shall sign the Contract Agreement within the period as stated ITB 34.1.</p> <p>35.2 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 (vii) contract price.</p> <p>35.3 Within thirty (30) days from the date of issuance of notification pursuant to ITB 33.1 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.</p> <p>35.4 If the bidder whose bid is accepted fails to sign the contract as stated ITB 35.1, the Public Procurement Monitoring Office shall blacklist the bidder on recommendation of</p>

	the Public Entity.
36. Complaint and Review	36.1 If a Bidder is dissatisfied with the Procurement proceedings or the decision made by the Employer in the intention to award the Contract, it may file an application to the Chief of the Public Entity within Seven (7) days of providing the notice under ITB 33.1 by the Public Entity, for review of the proceedings stating the factual and legal grounds.
	36.2 Late application filed after the deadline pursuant to ITB 36.1 shall not be processed.
	<p>36.3 The chief of Public Entity shall, within five (5) days after receiving the application, give its decision with reasons, in writing pursuant to ITB 36.1:</p> <ul style="list-style-type: none"> (a) whether to suspend the procurement proceeding and indicate the procedure to be adopted for further proceedings; or (b) to reject the application. <p>The decision of the chief of Public Entity shall be final.</p>



SECTION - II

Bid Data Sheet

This section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section I. Instructions to Bidders.

A. General	
ITB 1.1	The number of the Invitation for Bids is : <i>SMDMP/WORKS/NCB/LIFT-03/81-82</i>
ITB 1.1	The Employer is: <i>Sunkoshi Marin Diversion Multipurpose Project</i>
ITB 1.1	The number and identification of lots(contracts) comprising this bidding process is: <i>SMDMP/WORKS/NCB/LIFT-03/81-82</i>
ITB 2.1	The name of the Project is: <i>Construction of Khaltetar Lift Irrigation Sub Project, Sunkoshi Ga. Pa.-6, Sindhuli.</i> The implementing agency is: <i>Sunkoshi Marin Diversion Multipurpose Project</i>
ITB 4.1 (a)	Maximum number of partner in a joint venture shall be : <i>3 (three)</i>
ITB 4.2	Eligible countries: <i>Nepal</i>
ITB 4.8 & ITB 4.9	For GoN Funded: The Bidder, including all parties constituting the Bidder, shall be ineligible to participate in the open competitive bidding process if it has already secured five (5) construction contracts (in open competitive bidding) and has not yet completed the work as stipulated in the respective contracts. Following Procurement of Works contracts shall not be counted for this purpose: a) The works for which tender were invited or contracts accepted before 2078-12-03 B.S (March 17, 2022 A.D) b) The works for which tender have been invited and contracts accepted after 2078-12-03 B.S (March 17, 2022 A.D) but the work acceptance report has been approved according to Rule 117 of PPR. c) The works for which tenders were invited or contracts accepted under all types of foreign assistance.
ITB 5.1	For GoN funded: For the purpose of Country of Origin: <i>“all Countries”</i>
B. Bidding Document	
ITB 7.1	For clarification purposes only, the Employer’s address is: Attention: <i>Project Director</i> Address: <i>Sunkoshi Marin Diversion Multipurpose Project</i> Telephone: : Electronic mail address: <i>smdmpp3@gmail.com</i>

ITB 7.4	A Pre-Bid meeting “ shall not ” held. 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
ITB 11.1 (b)	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: <i>N/A</i>
ITB 11.1 (h)	The Bidder shall submit with its bid the following additional documents: <i>N/A</i>
ITB 13.6	The prices quoted by the Bidder “ shall not be ” subject to adjustment during the performance of the Contract.
ITB 15.1	The bid validity period shall be: <i>Ninety (90) days</i> .
ITB 16.1	The Bidder shall furnish a bid security, from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal with a minimum of <i>NRs. 190,000.00</i> , which shall be valid for 30 days beyond the validity period of the bid.
ITB 16.2 (b)	Account Name: <i>Sunkoshi Marin Diversion Multipurpose Project</i> Bank Name: <i>Rastriya Banijya Bank</i> Bank Address: <i>Sindhuli</i> Dharauti Account Number: <i>1060100102030000</i> Office Code: <i>308032501</i>
ITB 17.1	In addition to the original of the bid, the number of copy/ies is/are: <i>Not Applicable</i>
ITB 17.2	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	
ITB 18.1	Bidders shall have the option of submitting their bids “ <i>by electronic only</i> ”

ITB 18.1 (b)

Electronic bid submission procedure:

- (a) Bidders submitting Bids electronically shall follow the electronic bid submission procedures specified in this clause.
- i. Bidders who choose to submit their bids electronically, can view/download the bidding documents from “***published bids***” section of e-GP system, <https://bolpatra.gov.np/egp>.
 - ii. For the purpose of e-Submission, the bidder shall, at first, register in e-GP system and maintain their organization profile data and documents required during bid response preparation. The details of e-GP registration and profile management procedure are specified in Article No 9 and 10 respectively of e-GP Directives issued by PPMO, which can be downloaded from ***Download section*** of e-GP system.
 - iii. In order to submit the bid, interested bidders shall deposit the cost of bidding document in the bank and account specified in Invitation for Bid (IFB). The scanned copy (in PDF format) of the bank deposit voucher shall also be submitted along with the bid.
 - iv. The bidders shall prepare their bids using data and documents maintained in bidder’s profile, instruction provided by e-GP system and forms/format provided in the bidding document.
 - v. Bidders may submit bids as a single entity or as a joint venture (JV). Bidder submitting bid in JV 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) shall update their profile data and documents required during preparation and submission of their 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.
 - viii. Bidders shall submit the required documents as specified in Section I-Instruction to Bidders, Section II-Bid Data Sheet and Section III-Evaluation and Eligibility Criteria of the bidding document. The format of the documents shall be in PDF and/or web form as provisioned in the e-GP system.

The required forms and documents shall be part of bid.

No.	Document	Requirement	Remarks
1.	Letter of Bid	Mandatory	PDF
2.	Bid Security / Bank Guarantee	Mandatory	PDF
3.	Firm or Company registration Certificate	Mandatory	PDF

4.	VAT and PAN registration Certificate	Mandatory (for domestic bidders only)	PDF
5.	Business Registration Licence	Mandatory	PDF
6.	Tax Clearance Certificate / Tax return submission evidence / evidence of time extension	Mandatory (for domestic bidders only)	PDF
7.	Power of Attorney of Bid signatory	Mandatory	PDF
8.	Bank Voucher for cost of bid document	Mandatory	PDF
9.	Joint venture agreement	Mandatory in case of JV Bids Only	PDF
10.	Completed Bill of Quantities (BoQ)	Mandatory	Online Forms
11.	Price Adjustment Table (if Applicable)	Mandatory (If Applicable)	Online Forms
12.	Additional documents specified in ITB 11.2 (h)	Mandatory (If any)	PDF

Note:

- a) The documents specified as “Mandatory” should be included in e-submission and non-submission of the documents shall be considered as non-responsive bid.
 - b) Bidders (all partners in case of JV) should verify/update their profile documents as appropriate for the specific bid before submitting their bid electronically.
- ix. After providing all the details and documents, the e-GP system will generate bid response documents for the bidder. Bidders shall download, verify and confirm the bid response documents prior to bid submission.
 - x. 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 then only allow bidders to submit their bid.
 - xi. Electronically submitted bids can be modified and/or withdrawn through the system within the bid submission deadline.
 - xii. 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 bidders are fully responsible for using the e-GP system as per specified procedures and in no case the employer shall be held liable for bidder's inability to use the system.
 - cc) When a bidder submits electronic bid through the e-GP System, it is

	assumed that the bidder has prepared the bid by studying and examining the complete set of the bidding document and e-GP instruction including the provision stipulated in e-GP Directives.
ITB 19.1	<p><u>For bid submission purposes only, the Employer's address is :</u></p> <p>Attention: <i>Project Director</i> Address: <i>Sunkoshi Marin Diversion Multipurpose Project</i></p> <p><u>The deadline for bid submission is :</u></p> <p>Date: <i>23rd July 2025</i> Time: <i>12:00 Hrs.</i></p>
ITB 22.1	<p>The bid opening shall take place at :</p> <p>Address : <i>Sunkoshi Marin Diversion Multipurpose Project</i></p> <p>Date : <i>23rd July 2025</i></p> <p>Time : <i>13:00 Hrs</i></p>
E. Evaluation and Comparison of Bids	
ITB 29.4	Bidders are <i>"not permitted"</i> to quote separate prices for lots (Contracts), and a single Bidder will be awarded multiple lots (Contracts) based on provision of <i>Paragraph 1.1, Multiple Contracts Section III (Evaluation and Eligibility Criteria):</i>
ITB 29.5	The amount of the performance security be increased by Eight (8) percent of the quoted bid price (without VAT but Including PS).



SECTION - III

Evaluation and Eligibility Criteria

This Section contains all the criteria that the Employer shall use to evaluate bids and eligible Bidders. GoN/DP requires bidders to be qualified by meeting predefined eligibility criteria. In accordance with ITB 29, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section IV (Bidding Forms).

1. Evaluation

In addition to the criteria listed in ITB 29.2 (a) - (e) the following criteria shall apply:

1.1 Multiple Contracts

Pursuant to Sub-Clause ITB 29.4 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 29.4 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.

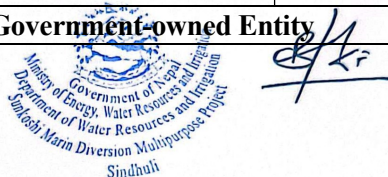
1.2 Quantifiable Nonconformities and Omissions

Subject to ITB 13.2 and ITB 29.2, the evaluated cost of quantifiable nonconformities including omissions, is determined as follows:

[Insert in bidding document: “Pursuant to ITB 27.3, 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.”]

2. Eligibility

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
2.1 Conflict of Interest					
No conflicts of interest in accordance with ITB Sub-Clause 4.3.	must meet requirement	existing or intended JV must meet requirement	must meet requirement	not applicable	Letter of Bid
2.2 Government/DP Eligibility					
Not having been declared ineligible by government/DP, as described in ITB Sub-Clause 4.4.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Bid
2.3 Government-owned Entity					



Bidder required to meet conditions of ITB Sub-Clause 4.5.	must meet requirement	existing or intended JV must meet requirement	must meet requirement	not applicable	Letter of Bid, Forms ELI - 1, ELI - 2, with attachments
2.4 UN Eligibility					
Not having been declared ineligible based on a United Nations resolution or Employer's country law, as described in ITB Sub-Clause 4.7.	must meet requirement	existing or intended JV must meet requirement	must meet requirement	not applicable	Letter of Bid
2.5 Bidder's Running Contracts					
Bidder's have not yet secured five (5) number of construction contracts ² (in open competitive bidding) as described in ITB Sub-Clause 4.8.	must meet requirement	existing or intended JV must meet requirement	must meet requirement	not applicable	Letter of Bid, Form ELI-3
2.6 Other Eligibility					
Firm or Company Registration Certificate	must meet requirement	not applicable	must meet requirement	not applicable	Document attachment
Business Registration License	must meet requirement	not applicable	must meet requirement	not applicable	Document attachment
VAT and PAN Registration certificate	must meet requirement	not applicable	must meet requirement	not applicable	Document attachment
Tax clearances certificate for the <i>F/Y 2080/81</i> or Tax return submission evidence or evidence of tax time extension for.	must meet requirement	not applicable	must meet requirement	not applicable	Document attachment
Additional requirements <i>[Insert if any]</i>

²Note: Following **Procurement of Works** contracts shall not be counted for this purpose:

- The **works for** which **tender** were invited or contracts accepted before 2078-12-03 B.S or March 17, 2022 A.D
- The **works for** which **tender** have been invited **and contracts accepted** after 2078-12-03 B.S or i.e March 17, 2022 A.D and accepted but the work acceptance report has been approved according to Rule 117 of PPR.
- The **works for which tenders were invited or** contracts **accepted** under all types of foreign assistance

SECTION - IV

Bidding Forms

This Section contains the forms which are to be completed by the Bidder and submitted as part of its Bid.



Letter of 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: **[Insert Complete name of Employer]**

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: **[Insert Description of the works]**.

(c) The total price of our Bid, excluding any discounts offered in item (d) below is: **[Insert one of the options below as appropriate]** or when left blank is the Bid Price indicated in the Bill of Quantities.

Option 1, in case of single contract: Total price is: **[insert the total price of the Bid in words and figures]**;

Or

Option 2, in case of multiple lots (contracts): (i) Total price of each lot (contracts): **[insert the total price of each lot in words and figures]**; (ii) Total price of subject contract [say Lot1] and Lot2 [another contract] **[insert the total price in words and figures]**; (iii) Total price of subject contract [say Lot1] and Lot3 [another contract] **[insert the total price in words and figures]**; Total price of subject contract [say Lot1], Lot2 [another contract], Lot3 [another contract], **[insert the total price in words and figures]**;

(d) The discounts offered and the methodology for their application for subject contract [single contract] are: [For Bidding Documents not provisioning multiple contracts]

Add following if Bidding Document provisions applicability of multiple contracts



The discounts offered and the methodology for their application for subject contract [say Lot1] and Lot2 [another contract] are:.....

The discounts offered and the methodology for their application for subject contract [say Lot1] and Lot3 [another contract] are:.....

The discounts offered and the methodology for their application for subject contract [say Lot1], Lot2 [another contract] and Lot3 [another contract],....., are:.....

[Note:

1. Formulate possible combinations depending upon the number of lots under Bidding Process and modify accordingly Paragraph (c) and (d)]

(e) Our bid shall be valid for a period of*[insert validity period as specified in ITB 15.1]* 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) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries or any countries [insert the nationality of the Bidder, including that of all parties that comprise the Bidder if the Bidder is a consortium or association, and the nationality of each Subcontractor and Supplier];

(h) 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;

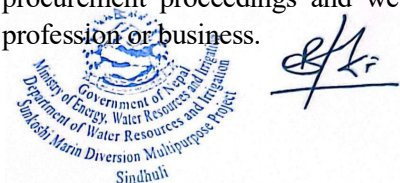
(i) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB 4.3;

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

(k) ☒ We are not a government owned entity ☐ We are a government owned entity but meet the requirements of ITB 4.5; *

(l) 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;

(m) We declare that, we have not been black listed as per ITB 3.4 and no conflict of interest in the proposed procurement proceedings and we have not been punished for an offense relating to the concerned profession or business.



(n) We declare that we have not yet secured five (5) number of constructions contracts³ (in open competitive bidding) as described in ITB Sub-Clause 4.9.

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

(p) If awarded the contract, the person named below shall act as Contractor's Representative:

(q) 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.

(r) 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.

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

In the capacity of *[insert legal capacity of person signing the Bid]*.....

Signed *[signature of the person whose name and capacity are shown above]*.....

Duly authorized to sign the Bid for and on behalf of *[insert complete name of the Bidder]*.....

Date *[insert date of signing]*.....

* Note: Use one of the two options as appropriate.

³ Note: Following Procurement of Works contracts shall not be counted for this purpose

a) The works for which tender were invited or contracts accepted before 2078-12-03 B.S (March 17, 2022 A.D).

b) The works for which tender have been invited and contracts accepted after 2078-12-03 B.S (March 17, 2022 A.D) and accepted but the work acceptance report has been approved according to Rule 117 of PPR.

c) The works for which tenders were invited or contracts accepted under all types of foreign assistance.

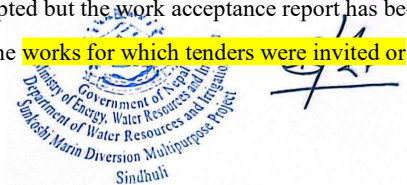


Table of Price Adjustment Data⁴

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

Code	Index Description	Source of Index*	Base Value and Date	Employer's Proposed Weighting Range (coefficient)	Bidder's Proposed Weighting (coefficient)**
1	2	3	4	5	6
	Non - adjustable (A)			0.15	0.15
	Labor (b)				
	Materials (c)				
	Equipment usage (d)				
		Total			1.00

*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

⁴ Non-compliance of the data (stipulated by the bidder in this table) with requirements described here shall not be grounds for bid rejection and such non-compliance will be subject to clarification and rectification prior to contract award.

Table of Price Adjustment Data⁵

[To be used if Price Adjustment is applicable as per GCC 53.6]

Code	Construction Material*	Unit	Base Price (NRs/Unit) (Ex-factory)	Source (Factory)**
1	2	3	4	5

* 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.

⁵ Non-compliance of the data (stipulated by the bidder in this table) with requirements described here shall not be grounds for bid rejection and such non-compliance will be subject to clarification and rectification prior to contract award.

Bid Security

Bank Guarantee

Bank's Name, and Address of Issuing Branch or Office

(On letterhead paper of the Bank)

Beneficiary: **[Insert 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 **[Insert name of Contract]** under Invitation for Bids No. **[insert IFB 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..... **[Insert name of Bank]** hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of **Nepalese Rupees. [Insert amount in figures and 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 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 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) 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; or

(d) 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 (**URDG, 2010 Revisions**), ICC Publication No. 758. **except that the supporting statement under Article 15(a) is hereby excluded.**

... 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).



Bidder's Information Format

Site Organization

Method Statement

Mobilization Schedule

Construction Schedule

Others



Bidder's Information

Form ELI - 1: Bidder's Information Sheet

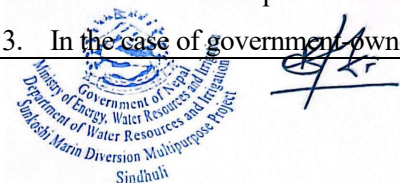
Bidder's Information	
Bidder's legal name	
In case of JV, legal name of each partner	
Bidder's country of constitution	
Bidder's year of constitution	
Bidder's legal address in country of constitution	
Bidder's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	
Attached are copies of the following original documents.	
<p>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.</p> <p>2. Authorization to represent the firm or JV named in above, in accordance with ITB 17.2.</p> <p>3. In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1.</p> <p>4. In case of a government-owned entity, any additional documents not covered under 1 above required to comply with ITB 4.5.</p>	



Form ELI - 2: JV Information Sheet

Each member of a JV must fill in this form

JV / Specialist Subcontractor Information	
Bidder's legal name	
JV Partner's or Subcontractor's legal name	
JV Partner's or Subcontractor's country of constitution	
JV Partner's or Subcontractor's year of constitution	
JV Partner's or Subcontractor's legal address in country of constitution	
JV Partner's or Subcontractor's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)	
Attached are copies of the following original documents.	
<ol style="list-style-type: none"> 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 .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 ELI - 3: Bidder's Running Contracts****

Each member of a JV must fill in this form

	Bidder's Running Contracts				
Name of office	Contract Identification no.	Source of Fund*	Date of issuance of Letter of Acceptance	Status of contract**	Date of Issuance of Taking Over Certificate***

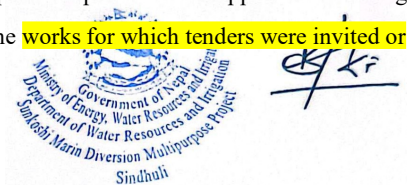
* Mention GON funded or DP funded or Other PE (Insert name) funded

** Mention "Yet to sign" if contract is not signed, "Running" if contract has been signed and contract is running and "Substantially completed" if taking over certificate has been issued.

*** Insert date of issuance of taking over certificate if the awarded contract has been substantially completed and taking over certificate has been issued.

****Note: Following Procurement of Works contracts shall not be counted for this purpose

- The works for which tender were invited or contracts accepted before 2078-12-03 B.S (March 17, 2022 A.D).
- The works for which tender have been invited and contracts accepted 2078-12-03 B.S (March 17, 2022 A.D) but the work acceptance report has been approved according to Rule 117 of PPR.
- The works for which tenders were invited or contracts accepted under all types of foreign assistance.



Part – II

REQUIREMENTS



Table of Contents

Section - V	Works Requirements	41
Scope of Work		41
Specifications		42
Notes on the Specifications		42
Sample Clause: Equivalency of Standards and Codes		43
Drawings		44
Supplementary Information		45
Section - VI	Bill of Quantities	46
Notes for Unit Rate Contracts		46
Preamble of Bill of Quantities		48
General		48
Day work Schedule		49
Provisional Sums		50
Bill of Quantities		51



SECTION - V

Works Requirements

This Section contains the **Scope of Work**, Specification, the Drawings, and supplementary information that describe the Works to be procured.



Scope of Work

Khaltetar Lift Irrigation Sub Project intends to irrigate 10 ha of land in Sunkoshi Ga. Pa.-6, Sindhuli District. The Source is Sunkoshi River. The main objective consists of construction of necessary lift irrigation infrastructures such as construction of well, reservoir tank, pump house, distribution system and associated structures.



Specifications

Notes on the Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Employer without qualifying or conditioning their Bids. The specifications must be drafted to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of economy, efficiency and fairness in procurement be realized, responsiveness of Bids be ensured, and the subsequent task of bid evaluation facilitated. The specifications should require that all goods and materials to be incorporated in the Works 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.

Samples of specifications from previous similar projects are useful in this respect. The use of metric units is encouraged by the Funding Agency in case of funding assisted projects. Most specifications are normally written specially by the Employer or Project Manager to suit the Contract Works in hand. The available standard specification of works of Ministry of Physical Infrastructure and Transport, DoLI and Other line Ministries can be adopted for respective civil construction works.

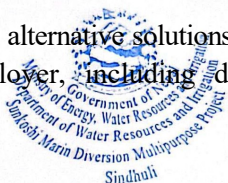
There are considerable advantages in standardizing General Specifications for repetitive Works in recognized public sectors, such as highways, urban housing, irrigation, and water supply, in the same country or region where similar conditions prevail. The General Specifications should cover all classes of workmanship, materials, and equipment commonly involved in construction, however it may not necessarily be adequate to be used in a particular Works Contract and may necessitate preparation of Particular (Special) Specifications to amend and or supplement the provision of the General Specifications to meet the requirement of the particular Works.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for goods, materials, and workmanship, recognized international standards should be used as much as possible. Where other particular standards are used, whether national standards of Nepal or other standards, the specifications should state that goods, materials, and workmanship that meet other authoritative standards, and which ensure substantially equal or higher quality than the standards mentioned, will also be acceptable.

Employers should decide whether technical solutions to specified parts of the Works are to be permitted. Alternatives are appropriate in cases where obvious (and potentially less costly) alternatives are possible to the technical solutions indicated in the Procurement Documents for certain elements of the Works, taking into consideration the comparative specialized advantage of potential bidders. For example:

The Employer should provide a description of the selected parts of the Works with appropriate references to Drawings, Specifications, Bill of Quantities, and Design or Performance criteria, stating that the alternative solutions if applicable shall be at least structurally and functionally equivalent to the basic design parameters and specifications.

Such alternative solutions shall be accompanied by all information necessary for a complete evaluation by the Employer, including drawings, design calculations, technical specifications, breakdown of prices,



proposed construction methodology, and other relevant details.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials 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 that ensure a substantially equal or higher quality than the standards and codes specified will be accepted subject to the Project Manager's prior review and written consent. Differences between the standards specified and the proposed alternative standards shall be fully described in writing by the Contractor and submitted to the Project Manager at least 30 days prior to the date when the Contractor desires the Project Manager's consent. In the event the Project Manager determines that such proposed deviations do not ensure substantially equal or higher quality, the Contractor shall comply with the standards specified in the documents. These Notes for Preparing Specifications are intended only as information for the Employer or the person drafting the Procurement Documents. They should not be included in the final documents.

[Refer Specifications attached with the document]

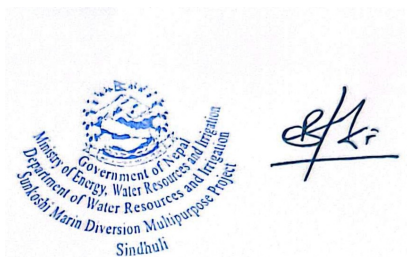


Drawings

Note:

1. It is customary to bind the drawings in a separate volume, which is often larger than other volumes of the contract documents. The size will be dictated by the scale of the drawings, which must not be reduced to the extent that details are reduced illegible.
2. A simplified map showing the location of the Site in relation to the local geography, indicating major roads, posts, airports, and railroads, is helpful.
3. The construction drawings, even if not fully developed, must show sufficient details to enable bidders to understand the type and complexity of the work involved and the price the Bill of Quantities.

[Refer Drawings attached]



Supplementary Information

[insert supplementary information if any]



SECTION - VI

Bill of Quantities⁶

Notes for Unit Rate Contracts :

Objectives

The objectives of the Bill of Quantities are

- (a) to provide sufficient information on the quantities of Works to be performed to enable Bids to be prepared efficiently and accurately; and*
- (b) when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.*

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

Content

The Bill of Quantities should be divided generally into the following sections:

- (a) Preamble;*
- (b) Work Items (grouped into parts);*
- (c) Day works Schedule;*
- d) Provisional Sums; and*
- (d) Summary.*

Preamble

The Preamble should indicate the inclusiveness of the unit prices, and should state the methods of measurement which have been adopted in the preparation of the Bill of Quantities and which are to be used for the measurement of any part of the works.

Work Items

The items in the Bill of Quantities should be grouped into sections to distinguish between those parts of the Works which by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, or phasing of the Works, or considerations of cost. General items common to all parts of the works may be grouped as a separate section in the Bill of Quantities.

Day work Schedule

A Day work Schedule should be included only if the probability of unforeseen work, outside the items included in the Bill of Quantities, is high. To facilitate checking by the Employer of the realism of rates quoted by the Bidders, the Day work Schedule should normally comprise the following:

- (a) A list of the various classes of labor, materials, and Constructional Plant for which basic day work rates or prices are to be inserted by the Bidder, together with a statement of the conditions under which the Contractor will be paid for work executed on a day work basis.*

⁶In lump sum contracts, delete “Bill of Quantities” and replace with “Schedule of Activities” throughout this section.

- (b) *Nominal quantities for each item of Day work, to be priced by each Bidder at Day work rates as bid. The rate to be entered by the Bidder against each basic Day work item should include the Contractor's profit, overheads, supervision, and other charges.*

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 Contract Data should state the manner in which they will be used, and under whose authority (usually the Project Manager's).

Summary

The Summary should contain a tabulation of the separate parts of the Bill of Quantities carried forward, with provisional sums for Day work, for physical (quantity) contingencies, and for price contingencies (upward price adjustment) where applicable.

These Notes for Preparing Specifications are intended only as information for the Employer or the person drafting the Bidding documents. They should not be included in the final documents.

Preamble of Bill of Quantities

A. General

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Special Conditions of Contract, Technical Specifications, and Drawings.
2. 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.
3. 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.
4. 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.
5. 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.

6. 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.
7. 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.
8. 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.
9. The method of measurement of completed work for payment shall be in accordance with the Specifications.
10. The abbreviations and symbols used in this Bill of Quantities are: *[Insert as applicable]*

B. Day work Schedule

a) General

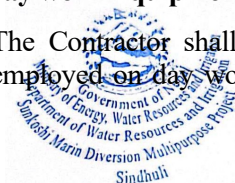
1. Work shall not be executed on a day work basis except by written order of the Project Manager. Bidders shall enter basic rates for day work items in the Schedules. These rates shall apply to any quantity of day work ordered by the Project Manager. Nominal quantities have been indicated against each 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

1. 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.
2. 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

1. 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.

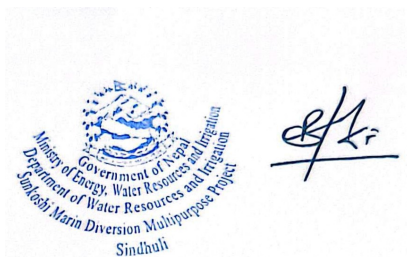
2. In calculating the payment due to the Contractor for Constructional Plant employed on day work, only the actual number of working hours will be eligible for payment, except that where applicable and agreed with the Project Manager, the travelling time from the part of the Site where the Construction 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

1. 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

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.



Bill of Quantities

[Refer Bill of Quantities]



CONDITIONS OF CONTRACT AND CONTRACT FORMS



Table of Clauses

General.....	58
1. Definitions	58
2. Interpretation	59
3. Language and Law	60
4.Contract Agreement	60
5. Assignment	60
6. Care and Supply of Documents	60
7. Confidential Details.....	61
8. Compliance with Laws	61
9. Joint and Several Liability	61
10. Project Manager's Decisions	61
11. Delegation.....	62
12. Communications	62
13. Subcontracting	62
14. Other Contractors	62
15 Personnel and Equipment	62
16. Employer's and Contractor's Risk.....	63
17. Employer's Risks	63
18. Contractor's Risks	63
19. Insurance	63
20. Site Investigation Reports.....	64
21. Contractor to Construct the Works.....	64
22. The Works to Be Completed within intended Completion Date	64
23. Design by contractor and Approval by the Project Manager	64
24. Safety, Security and Protection of the Environment	64
25. Discoveries.....	65
26. Possession of the Site.....	65
27. Access to the Site	65
28.Instructions, Inspections and Audits.....	65
29. Dispute Settlement	66
30. Procedures for Disputes.....	66
B. Staff and Labor	66
31. Forced Labor	66
32. Child Labor	66
33.Non-discrimination and Equal Opportunity	66
B1. Time Control	66
34. Program	66
35. Extension of the Intended Completion Date	67
36. Acceleration	67
37. Delays Ordered by the Project Manager	67
38. Management Meetings	67
39. Early Warning.....	67
C. Quality Control	68
40. Identifying Defects	68
41. Tests.....	68
42. Correction of Defects.....	68

90. Records of Explosives.....	83
91. Traffic Diversion.....	83

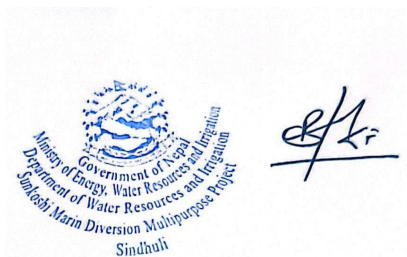


Section VII: General Conditions of Contract

Sunkoshi Marin Diversion Multipurpose Project

***Construction of Khaltetar Lift Irrigation Sub Project, Sunkoshi
Ga. Pa.-6, Sindhuli***

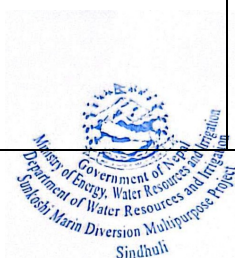
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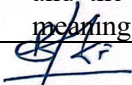


General Conditions of Contract

This Section provides the General Conditions of Contract that will apply to the Contract for which the Bidding document is issued.

General	
1. Definitions	<p>1.1 Boldface type is used to identify defined terms.</p> <p>(a) The Accepted Contract Amount means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.</p> <p>(b) The Activity Schedule is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.</p> <p>(c) Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.</p> <p>(d) Compensation Events are those defined in GCC 50 hereunder.</p> <p>(e) The Completion Date is the date of completion of the Works as certified by the Project Manager, in accordance with GCC 68.1.</p> <p>(f) The Contract is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC 2.3 below.</p> <p>(g) The Contractor is the party whose Bid to carry out the Works has been accepted by the Employer.</p> <p>(h) The Contractor's Bid is the completed bidding document submitted by the Contractor to the Employer.</p> <p>(i) The Contract Price is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.</p> <p>(j) Days are calendar days; months are calendar-months.</p> <p>(k) Dayworks are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.</p> <p>(l) A Defect is any part of the Works not completed in accordance with the Contract.</p> <p>(m) The Defects Liability Certificate is the certificate issued by Project Manager upon correction of defects by the Contractor.</p> <p>(n) The Defects Liability Period is the period calculated from the Completion Date where the Contractor remains responsible for remedying defects.</p> <p>(o) Drawings include calculations and other information provided or approved by the Project Manager for the execution of the Contract.</p> <p>(p) The Employer is the party who employs the Contractor to carry out the Works, as specified in the SCC.</p> <p>(q) Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.</p> <p>(r) 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</p>



	<p>the Contract; which, having arisen, such Party could not reasonably have avoided or overcome; and, which is not substantially attributable to the other Party.</p> <p>(s) The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.</p> <p>(t) In writing or written means hand written, type written, printed or electronically made, and resulting in permanent record.</p> <p>(u) 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.</p> <p>(v) 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.</p> <p>(w) Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.</p> <p>(x) Party means the Employer or the Contractor, as the context requires.</p> <p>(y) SCC means Special Conditions of Contract</p> <p>(aa) Plant is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.</p> <p>(bb) 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.</p> <p>(cc) Retention Money means the aggregate of all monies retained by the Employer pursuant to GCC 54.1.</p> <p>(dd) 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.</p> <p>(ee) The Site is the area defined as such in the SCC.</p> <p>(ff) 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.</p> <p>(gg) Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.</p> <p>(hh) 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.</p> <p>(ii) 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.</p> <p>(jj) Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.</p> <p>(kk) A Variation is an instruction given by the Project Manager which varies the Works</p> <p>(ll) The Works are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the SCC.</p>
<p>2. Interpretation</p> 	<p>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</p> 

	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: <ul style="list-style-type: none"> (a) Contract Agreement, (b) Letter of Acceptance, (c) Letter of 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 .
	3.2 Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Employer's country when <ul style="list-style-type: none"> (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 Employer's Country prohibits any import of goods from, or any payments to, a particular country, person, or entity. Where the Employer'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 IX.
	4.2 Without altering the basic nature or scope of work, the contract may be amended upon mutual written consent as per prevailing Public Procurement Law.
5. Assignment	5.1 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 <ul style="list-style-type: none"> (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.
6. Care and Supply of	6.1 The Specification and Drawings shall be in the custody and care of the Employer.

Documents	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.
	6.2 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.
	6.3 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.
	6.4 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.
7. Confidential Details	7.1 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.
	7.2 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.
	7.3 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.
8. Compliance with Laws	8.1 The Contractor shall, in performing the Contract, comply with applicable Laws of Nepal.
9. Joint and Several Liability	9.1 If the Contractor is a joint venture of two or more entities, all such 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.
10. Project Manager's Decisions	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.

11. Delegation	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.
12. Communications	<p>12.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices and requests, these communications shall be:</p> <p>(a) in writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the SCC; and</p> <p>(b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Contract. However:</p> <p>(i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and</p> <p>(ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.</p> <p>Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed.</p> <p>12.2 A Notice shall be effective when delivered or on the Notice's effective date, whichever is later.</p>
13. Subcontracting	13.1 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.
14. Other Contractors	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
15 Personnel and Equipment	<p>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.</p> <p>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.</p> <p>15.3 If the Employer, Project Manager, or Contractor determines, that any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or other prohibited practices during the execution of the Works, then that employee shall</p>

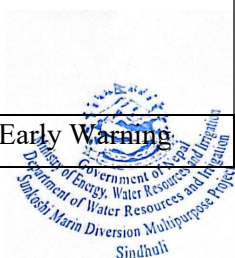
	be removed in accordance with Clause 15.2 above.
16. Employer's and Contractor's Risk	16.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.
17. Employer's Risks	<p>17.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Employer's risks:</p> <p>(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</p> <p>(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</p> <p>(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.</p> <p>(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.</p> <p>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 or damage due to</p> <p>(a) a Defect which existed on the Completion Date,</p> <p>(b) an event occurring before the Completion Date, which was not itself an Employer's risk, or</p> <p>(c) the activities of the Contractor on the Site after the Completion Date.</p>
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	<p>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:</p> <p>(a) loss of or damage to the Works, Plant, and Materials;</p> <p>(b) loss of or damage to Equipment;</p> <p>(c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and</p> <p>(d) Personal injury or death.</p> <p>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</p>

	<p>provide for compensation to be payable in the proportions of Nepalese Rupees required to rectify the loss or damage incurred.</p> <p>19.3 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.</p> <p>19.4 Alterations to the terms of insurance shall not be made without the approval of the Project Manager.</p> <p>19.5 Both parties shall comply with any conditions of the insurance policies.</p>
20. Site Investigation Reports	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.
21. Contractor to Construct the Works	21.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.
22. The Works to Be Completed within intended Completion Date	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.
23. Design by contractor and Approval by the Project Manager	<p>23.1 The contractor shall be responsible for the design of permanent works as specified in SCC.</p> <p>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.</p> <p>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.</p> <p>23.4 The Project Manager's approval shall not alter the Contractor's responsibility for design of temporary works.</p>
24. Safety, Security and Protection of the Environment	<p>24.1 The Contractor shall, throughout the execution, and completion of the works and remedying of any defects therein:</p> <p>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.</p> <p>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.</p>

	<p>c. Take all reasonable steps to protect the environment on and off the site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.</p> <p>d. Ensure that any cut or fill slopes are planted in grass or other plant cover as soon as possible to protect them from erosion.</p> <p>e. Any spoil or material removed from drains shall be disposed of to designated stable tipping areas as directed by the Project Manager.</p> <p>f. Shall not use fuel wood as a means of heating during the processing or preparation of any materials forming part of the works.</p> <p>g. 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.</p> <p>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.</p>
25. Discoveries	25.1 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.
26. Possession of the Site	26.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the SCC , the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.
27. Access to the Site	27.1 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.
28. Instructions, Inspections and Audits	28.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.
	28.2 The Contractor shall keep, and shall make all reasonable efforts to cause its Subcontractors and sub consultants to keep accurate and systematic accounts and records in respect of the Works in such form and details as will clearly identify relevant time changes and costs.
	28.3 The Contractor shall permit the GoN/DP and/or persons appointed by the GoN/DP to inspect the Site and/or the accounts and records of the Contractor and its sub-contractors relating to the performance of the Contract, and to have such accounts and records audited by auditors appointed by the GoN/DP if required by the GoN/DP. The Contractor's attention is drawn to Sub-Clause 73.2 which provides, inter alia, that acts intended to materially impede the exercise of the GoN's/DP's inspection and audit rights provided for under this Sub-Clause constitute a obstructive practice subject to contract termination.

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 procedures in accordance with law of Nepal 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.
B1. 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

	<p>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.</p>
	<p>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.</p>
35. Extension of the Intended Completion Date	<p>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.</p> <p>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. Along with full supporting information the contractor shall also submit Performance Security, Advanced Payment Guarantee and insurance Policy with extended validity as well as revised work schedule.</p>
36. Acceleration	<p>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.</p> <p>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.</p>
37. Delays Ordered by the Project Manager	<p>37.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.</p>
38. Management Meetings	<p>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.</p> <p>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 and stated in writing to all who attended the meeting.</p>
39. Early Warning	<p>39.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific</p>



	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 issuance of taking over certificate pursuant to GCC clause 69.2, 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 Contract Price	45.1 In the case of an Unit Rate contract: (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

	<p>rate to allow for the change.</p> <p>(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.</p> <p>(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.</p>
	<p>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.</p>
46. Variations	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>46.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.</p> <p>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.</p>
47. Cash Flow Forecasts	<p>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.</p>
48. Payment Certificates	<p>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.</p> <p>48.2 The Project Manager shall check the Contractor's monthly statement and certify the</p>

	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: <ul style="list-style-type: none"> (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: <ul style="list-style-type: none"> (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. (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued

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	<p>to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.</p> <p>(g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.</p> <p>(h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.</p> <p>(i) The advance payment is delayed.</p> <p>(j) The effects on the Contractor of any of the Employer's Risks.</p> <p>(k) The Project Manager unreasonably delays issuing a Certificate of Completion.</p>
	<p>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.</p>
	<p>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.</p>
	<p>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.</p>
51. Tax	<p>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.</p>
52. Currency	<p>52.1 The currency of Contracts shall be Nepalese Rupees.</p>
53. Price Adjustment	<p>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 payment amounts due.</p>
	<p>53.2 Adjustment Formulae⁷: The formulae will be of the following general type:</p>

⁷ 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.

	$pn = A + b \frac{Ln}{Lo} + c \frac{Mn}{Mo} + d \frac{En}{Eo} + etc.$ <p>Where:</p> <p><i>pn</i> 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;</p> <p><i>A</i> is a constant, specified in the Bidding Forms- Table of Price Adjustment data, representing the nonadjustable portion in contractual payments;⁸ <i>b, c, d, etc.</i>, 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;</p> <p><i>Ln, Mn, En, etc.</i>, 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</p> <p><i>Lo, Mo, Eo, etc.</i>, are the base cost indices or reference prices corresponding to the above cost elements at the date specified in Sub-Clause 53.4</p> <p>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.</p> <p>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.</p> <p>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, 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.</p> <p>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</p>
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⁸ 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, etc. should be one.

	<p>the following formulas:</p> <p>For unexpected increase in price</p> $P = [R_1 - (R_0 \times 1.10)] \times Q$ <p>For unexpected decrease in price P</p> $= [R_1 - (R_0 \times 0.90)] \times Q$ <p>Where:</p> <p>“P” is price adjustment amount</p> <p>“R₁” is the present price of the construction material (Source of indices shall be those listed in the Bidding forms)</p> <p>“R₀” is the base price of the construction material</p> <p>“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..</p> <p>53.7 The Price Adjustment amount shall be limited to a maximum of the initial Contract Amount as specified in the SCC.</p> <p>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.</p>
54. Retention	<p>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.</p> <p>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.</p> <p>54.3 The Contractor may substitute retention money with an unconditional bank guarantee issued from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law if:</p> <ul style="list-style-type: none"> (a) at least eighty (80) percent of the whole works have been completed, (b) progress of the works is satisfactory in accordance with the Contract as per approved work schedule, and (c) it can be assured that the works can be completed at the intended completion date. <p>The validity of the bank guarantee under this sub-clause shall be at least 30 days beyond the end of Defect Liability Period.</p> <p>54.4 54.3 retention money is substituted by bank guarantee in accordance with clause 54.3, the</p>

	bank guarantee shall be submitted either using the Retention Money Security Form included in Section X (Contract Forms) or in another Form acceptable to the employer. The validity of the bank guarantee shall be at least one month more than the end of defect liability period.
55. Liquidated Damages	<p>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 damages shall not exceed the amount defined in the SCC. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.</p> <p>55.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC 49.</p>
56. Bonus	56.1 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.
57. Advance Payment	<p>57.1 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 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.</p> <p>The validity of the bank guarantee under this sub-clause shall be at least 30 days beyond the end of intended completion date.</p> <p>57.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.</p> <p>57.3 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.</p> <p>57.4 If the advance provided under GCC 57.1 is not repaid due to non-performance of the works under the contract, by the contractor within the time period specified in the contract, the Employer shall recover the advance by enforcing the bank guarantee as provided under GCC 57.1, and shall also recover interest on the advance amount from</p>

	the contractor at a rate stated in SCC.
58. Securities	<p>58.1 The Performance Security, including any additional security required as per ITB 29.5 and ITB 34.1, 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 in accordance with the conditions of Contract using Sample Form for the Performance Security included in Section IX (Contract Forms), or another form acceptable to the Employer, and denominated in Nepalese Rupees. The Performance Security shall be valid until a date 30 days beyond the end of the Defect Liability Period.</p> <p>However, if the bidder quoted a bid price more than fifteen (15) percent below the estimated cost, the bidder may submit a separate performance security for the amount exceeding five percent of the bid price, as per ITB 34.1 (ii) , which shall be valid until a date 30 days beyond the end of the intended completion date.</p> <p>Any additional performance security required as per ITB 29.5 shall be valid until a date 30 days beyond the end of the intended completion date.</p> <p>58.2 The performance security issued by any foreign Bank outside Nepal must be counter guaranteed by an Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.</p>
59. Day works	<p>59.1 If applicable, the Day works 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.</p> <p>59.2 All work to be paid for as Day works 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.</p> <p>59.3 The Contractor shall be paid for Day works subject to obtaining signed Day works forms.</p>
60. Cost of Repairs	<p>60.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.</p>
F. Force Majeure	
61. Definition of Force Majeure	<p>61.1 In this Clause, "Force Majeure" means an exceptional event or circumstance,</p> <ul style="list-style-type: none"> (a) which is beyond a Party's control; (b) which such Party could not reasonably have provided against before entering into the Contract; (c) which, having arisen, such Party could not reasonably have avoided or overcome; and (d) which is not substantially attributable to the other Party. <p>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:</p>

	<p>(a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies;</p> <p>(b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war;</p> <p>(c) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel;</p> <p>(d) 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</p> <p>(e) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.</p>
62. Notice of Force Majeure	<p>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.</p> <p>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.</p> <p>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.</p>
63. Duty to Minimize Delay	<p>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.</p> <p>63.2 A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.</p>
64. Consequences of Force Majeure	<p>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</p> <p>(a) an extension of time for any such delay, if completion is or will be delayed, under GCC35 ; and</p> <p>(b) if the event or circumstance is of the kind described in sub-paragraphs (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, to the extent they are not indemnified through the insurance policy referred to in GCC 19.</p> <p>64.2 After receiving this notice, the Project Manager shall proceed in accordance with GCC 10 to agree or determine these matters.</p>
65. Force Majeure	<p>65. If any Subcontractor is entitled under any contract or agreement relating to the Works to</p>

Affecting Subcontractor	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.
66. Optional Termination, Payment and Release	<p>66.1 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.</p> <p>66.2 Upon such termination, the Project Manager shall determine the value of the work done and issue a Payment Certificate, which shall include</p> <ul style="list-style-type: none"> (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. Release from Performance	<p>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,</p> <ul style="list-style-type: none"> (a) the Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract; and (b) the sum payable by the Employer to the Contractor shall be the same as would have been payable under GCC 66 if the Contract had been terminated under GCC 66.
G. Finishing the Contract	
68. Completion	<p>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.</p>

	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	<p>69.1 In the contractor's Opinion, if the works are complete and ready for taking over, the contractor may apply by notice to the Project Manager for a Taking-Over Certificate. If the Works are divided into Sections, the Contractor may similarly apply for a Taking-Over Certificate for each Section.</p> <p>69.2 The Project Manager shall, within 30 days after receiving the Contractor's application:</p> <p>(a) issue the Taking-Over Certificate to the Contractor if physical progress of works is at least ninety (90) percent in accordance with the Contract except for any minor outstanding work and defects (as listed in the Taking-Over Certificate) which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or</p> <p>(b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice under this Sub-Clause.</p> <p>69.3 If the Engineer fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 30 days, and if the Works or Section (as the case may be) are substantially completed in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on the last day of that period.</p>
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	<p>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.</p> <p>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.</p>
72. Termination	<p>72.1 The Employer may terminate the Contract at any time if the contractor;</p> <p>a. does not commence the work as per the Contract,</p> <p>b. abandons the work without completing,</p> <p>c. fails to achieve progress as per the Contract.</p>

	<p>72.2 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.</p> <p>72.3 Fundamental breaches of Contract shall include, but shall not be limited to, the following :</p> <ul style="list-style-type: none"> 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; d)the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation. e)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; f)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; g)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; h)the Contractor does not maintain a Security, which is required; i) 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 j) 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. <p>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.</p> <p>72.5 Notwithstanding the above, the Employer may terminate the Contract for convenience.</p> <p>72.5 Notwithstanding the above, the Employer may terminate the Contract for convenience.</p> <p>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.</p>
<p>73.Fraud and</p>	<p>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,</p>

Corruption	<p>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.</p> <p>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.</p> <p>For the purposes of this GCC 73;</p> <ul style="list-style-type: none"> (i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party. (ii) "fraudulent practice"⁵ 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; (iii) "collusive practice"⁶ is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party; (iv) "coercive practice"⁷ is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party; (v) "obstructive practice" is <ul style="list-style-type: none"> (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	<p>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 or contractor 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 or contractor:</p> <ul style="list-style-type: none"> (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	<p>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</p>

	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 of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.
	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 DP Loan/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 SCC 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.
80. Project Manager's Duties and Authorities	80.1 The Project Manager's duties and authorities are restricted to the extent as stated in the SCC .
81. Quarries and Spoil Dumps	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.
82. Local Taxation	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.
83. Value Added Tax	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.
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 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. Member of Government, etc, not Personally Liable	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 of 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 VIII: Special Conditions of Contract

The following Special Conditions of Contract shall supplement the GCC. Whenever there is a conflict, the provisions herein shall prevail over those in the GCC .

Sunkoshi Marin Diversion Multipurpose Project

Construction of Khaltetar Lift Irrigation Sub Project, Sunkoshi Ga. Pa.-6, Sindhuli

SMDMP/WORKS/NCB/LIFT-03/81-82



Special Conditions of Contract

A. General	
GCC 1.1 (p)	The Employer is <i>Sunkoshi Marin Diversion Multipurpose Project</i>
GCC 1.1 (u)	The Intended Completion Date for the whole of the Works shall be <i>12 months from the date of agreement</i>
GCC 1.1(bb) & GCC 10.1	The Project Manager is <i>Project Director of Sunkoshi Marin Diversion Multipurpose Project</i> The Project Manager and Engineer are synonyms.
GCC 1.1 (ee)	The Site is located at <i>Sindhuli</i>
GCC 1.1 (hh)	The Start Date shall be <i>[insert Start date]</i>
GCC 1.1 (ll)	The Works consist of <i>Construction of Khaltetar Lift Irrigation Sub Project</i>
GCC 2.2	Sectional Completions are: <i>Not Applicable</i>
GCC 2.3 (i)	The following documents also form part of the Contract: <i>Not Applicable</i>
GCC 3.1	The language of the contract is ENGLISH/NEPALI The law that applies to the Contract is the law of NEPAL
GCC 11.1	The Project Manager <i>[Insert “may” or “may not”]</i> delegate any of his duties and responsibilities.
GCC 12.1 (a)	The agreed electronic transmission shall be: <i>[Insert E-mail or E-Fax or any other such means of Employer] and</i> <i>[Insert E-mail or E-Fax or any other such means of Contractor.]</i>
GCC 14.1	Schedule of other contractors: <i>Not Applicable</i>
GCC 19.1	The minimum insurance amounts and deductibles shall be: <ol style="list-style-type: none"> 1. The minimum cover for loss of or damage to the Works, Plant and Materials is: 115 % of the Contract Amount. 2. The maximum deductible for insurance of the Works and of Plant and Materials is: <i>0.75% of Sum Insured</i> 3. The minimum cover for loss or damage to immovable Equipment/plants is : 100% (i.e Replacement Cost) 4. The maximum deductible for insurance of immovable Equipment/plant is: 1% of Sum Insured The minimum cover for loss of or damage to other property is: NRs. 1,000,000.00

	<p><i>(Nepalese Rupees One Million only)</i> with unlimited number of occurrences</p> <p>6. The maximum deductible for insurance of other property is: <i>1% of Sum Insured</i></p> <p>7. The minimum cover for personal injury or death insurance</p> <p>i. for the Contractor's employees is that specified in the Labor act of Nepal and</p> <p>ii. for other people is <i>1 million</i> with an unlimited number of occurrences</p>
GCC 20.1	Site Investigation Reports are: <i>none</i>
GCC 23.1	The following shall be designed by the Contractor: <i>none</i>
GCC 26.1	The Site Possession Date(s) shall be: <i>15 days after signing the contract</i>
GCC 30.1	The place of arbitration shall be: <i>Kathmandu</i>
C. Time Control	
GCC 34.1	The Contractor shall submit for approval a Program for the Works within <i>30 days</i> from the date of the Letter of Acceptance.
GCC 34.3	<p>The period between Program updates is <i>90 days</i></p> <p>The amount to be withheld for late submission of an updated Program is <i>NRs. 100,000.00</i></p>
D. Quality Control	
GCC 42.1	The Defects Liability Period is: <i>365</i> days.
E. Cost Control	
GCC 49.1	<i>[insert the prevailing interest rate]</i>
GCC 53.1	<p>The Contract <i>"is not"</i> subject to price adjustment, and the following information regarding coefficients <i>"does not"</i> apply.</p> <p>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 and attached as Annex-1.</p>
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 and attached as Annex-1.
GCC 53.7	The Price Adjustment amount shall be limited to a maximum of: <i>Not Applicable</i> percentage of the initial Contract Amount (without VAT but including PS).
GCC 54.1	The proportion of payments retained is: 5 (five) percent.
GCC 55.1	The liquidated damages for the whole of the Works are 0.05 Percent of the final Contract Price (without VAT but including PS) per day. The maximum amount of liquidated damages for the

	whole of the Works is 10 Percent of the final Contract Price (without VAT but including PS).
GCC 56.1	The provision of bonus "Not Applicable" in the contract.
GCC 57.1	The provision of Advance Payments "Applicable" in the contract. The Advance Payments shall be: 10 percent of initial contract amount (without VAT but including PS) and shall be paid in two equal installments and to the Contractor. <i>The first installment of 5% shall be made to the contractor upon submission of acceptable bank guarantee for advance payment and second installment of 5% shall be made after the contractor completes full mobilization at site and has fulfilled contractual obligations such as submission of insurance policies, work program and acceptable bank guarantee to the employer.</i>
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 <i>proportionately of the respective Interim Payment Certificate</i> 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 price.
GCC 57.4	Recover interest on the advance amount from the Contractor should be at a rate of 10 %.
GCC 58.1	The Performance Security amount is: <i>as per ITB 34.1</i>
G. Finishing the Contract	
GCC 71.1	The date by which operating and maintenance manuals are required is; <i>Not Applicable</i>
GCC 71.2	The date by which "as built" drawings are required is: <i>before final bill Payment</i> The amount to be withheld for failing to produce "as built" drawings and/or Operating and maintenance manuals is: NRs. 50,000.00
GCC 72.3 (i)	The maximum number of days is: 200
GCC 79.2	For GoN funded: For the purpose of Country of Origin: "all Countries"
GCC 80	<p>The Project Manager has to obtain the specific approval of the Employer for taking any of the following actions :</p> <ol style="list-style-type: none"> Approving subcontracting of any part of the works under General Conditions of Contract Clause 13; Certifying additional costs determined under General Conditions of Contract Clause 50; Determining start date under General Conditions of Contract Clause 1; Determining the extension of the intended Completion Date under General Conditions of Contract Clause 35; 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. Adjustment of rates under General Conditions of Contract Clause 45;

Section IX: Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and when required Advance Payment Security and Retention Money Security, 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 BDS/SCC] to you as your bid
price *Nepalese Rupees* *[insert amount of contract price in figures and words*
including taxes] 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 **for the Invitation of Bids** dated**[Insert date of bid invitation]**for execution of the.....**[Insert name of the contract and identification number, as given in the Contract BDS/SCC]** for the Contract price of Nepalese Rupees **[insert amount in figures and words including taxes]**, 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 theday of.....between..... name of the Employer(*hereinafter “the Employer”*), of the one part, andname of the Contractor(*hereinafter “the Contractor”*), of the other part:

WHEREAS the Employer desires that the Works known as name of the Contractshould 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 Letter of Bid;
 - (c) the Addenda Nos [*Insert addenda numbers if any*]
 - (d) the Special Conditions of Contract;
 - (e) the List of Eligible Countries as per GCC,
 - (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
 - (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

Government of Nepal
Ministry of Energy, Water Resources and Irrigation
Department of Water Resources and Irrigation
Sindhuli
Sindhuli
Sindhuli

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.

Name of Subcontractors	Description of Works	Value/Percentage of subcontract



Performance Security

(On letterhead paper of the Bank)

..... **Bank's Name, and Address of Issuing Branch or Office**

Beneficiary: **[Insert Name and Address of Employer]**

Date:

Performance Guarantee No.:.....

We have been informed that ... **[insert name of the Contractor, which in the case of a joint venture shall be the name of the joint venture]** (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 **Nepalese Rupees****[insert amount in figures* and 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.....**[insert day]**.....Day of**[insert month, year]**..... **, and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees **(URDG), 2010 Revisions**, ICC Publication No. 758, **except that the supporting statement under Article 15(a) is hereby excluded.**

.....

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.



Advance Payment Security

(On letterhead paper of the Bank)

..... Bank's Name, and Address of Issuing Branch or Office.....

Beneficiary:[Insert Name and address of employer]

Date :

Advance Payment Guarantee No.....

We have been informed that [insert name of the Contractor, which in the case of a joint venture shall be the name of the joint venture] (hereinafter called "the Contractor") has entered into Contract No. [insert reference number of the contract]dated [insert agreement date] with you, for the execution of[Insert name of the contract and brief description of Works] (hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum Nepalese Rupees [insert amount in figures*and in words] is to be made against an advance payment guarantee.

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 Nepalese Rupees[insert amount in figures*. =and 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:

(a) Used the advance payment for purposes other than the costs of mobilization in respect of the Works.
Or

(b) .Has failed to repay the advance payment when it has become due and payable in accordance with the conditions of the contract, specifying the amount payable by the contractor.

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 .. [insert day]..... day of ... [insert month, year]...**, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG), 2010 Revisions,, ICC Publication No. 758 , except that the supporting statement under Article 15(a) is hereby excluded..

.....

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.



Retention Money Security

(On letterhead paper of the Bank)

..... **Bank's Name, and Address of Issuing Branch or Office**.....

Beneficiary: _____ *[Insert name and Address of Employer]*

Date: _____ *[Insert date of issue]*

RETENTION MONEY GUARANTEE No.: *[Insert guarantee reference number]*

We have been informed that _____ *[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the **Contractor**") has entered into Contract No. _____ *[insert reference number of the contract]* dated _____ with the Beneficiary, 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, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when at least eighty (80) percent of the whole works have been completed, progress of the works is satisfactory in accordance with the Contract as per approved work schedule and it can be assured that the works can be completed at the intended completion date, payment of *[insert the amount of the Retention Money]* is to be made against a Retention Money guarantee.

At the request of the **Contractor**, we, .. *[insert name of the Bank]*, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of **Nepalese Rupees** _____ *[insert amount in figures and amount in words]*¹ upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the **Contractor** is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.

This guarantee shall expire no later than the *...[insert day]...* day of *.....[insert month, year]...*², and any demand for payment under it must be received by us at the office indicated above on or before that date.

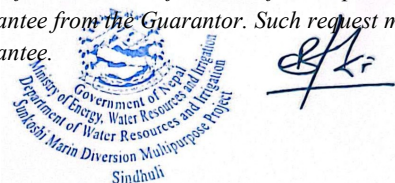
This guarantee is subject to the Uniform Rules for Demand Guarantees (**URDG**), 2010 Revisions, ICC Publication No. 758, **except that the supporting statement under Article 15(a) is hereby excluded.**

.....
Seal of Bank and Signature(s)

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

¹The Guarantor shall insert the amount of the Retention Money.

²Insert the same expiry date which is 30 days more than the end of Defect Liability Period. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.



Annex-1

Table of Price Adjustment Data [GCC 53.1]

Code	Index Description	Source of Index*	Base Value and Date	Employer's Proposed Weighting Range (coefficient)	Bidder's Proposed Weighting (coefficient)**
1	2	3	4	5	6
	Non - adjustable (A)			0.15	0.15
	Labor (b)				
	Materials (c)				
	Equipment usage (d)				
		Total			1.00

Note: Base value and Bidder's proposed weighting coefficient to be filled as per "Bid Form of Table of Price Adjustment Data" in Bidding Forms (Section-IV) after verification by the Employer in case of the alternative provision of Bidder proposed value and weighting coefficient.

Table of Price Adjustment Data [GCC 53.6]

Code	Construction Material*	Unit	Base Price (NRs/Unit) ** (Ex-factory)	Source (Factory)**
1	2	3	4	5

** For the purpose of calculation of price adjustment, the Ex-factory price of the same source mentioned in the table shall be taken into consideration.

Note: Base Price and source to be filled as per "Bid Form of Table of Price Adjustment Data" in Bidding Forms (Section-IV) after verification by the Employer in case of the alternative provision of Bidder proposed source and base price.

SPECIFICATIONS

Table of Contents

1. General	2
1.1. Site Preparation.....	2
1.2. Excavation.....	2
2. Construction Materials	4
2.1. Cement.....	4
2.2. Aggregates.....	5
2.3. Water.....	5
2.4. Timber.....	6
2.5. Reinforcement.....	6
3. Concrete Works	8
4. Brick Works	17
5. Stone Works	20
6. Form Works	23
7. Plastering Works	26
8. Gabion Works	27
9. Pipe Works.....	34
10. Submersible Pump.....	38
11. Well Construction.....	41
12. Deep Tubewell.....	42
13. Measurement and Payment.....	49

SPECIFICATIONS

1. General

1.1. Site Preparation

a) Clearing and Grubbing

Clearing and Grubbing shall consist of the cutting, removing and disposal of all tree, bushes, shrubs, grass, weeds, other vegetation, anthills, rubbish, fences, top organic soil not exceeding 150 mm in thickness and all other objectionable material, resulting from the clearing and grubbing. It shall also include the removal and disposal of structures that obstruct, encroach upon or otherwise obstruct the work.

The moving of a certain amount of soil or gravel material may be inherent to or unavoidable during the process of clearing and no extra payment shall be made for this. Clearing shall include the removal of all rocks and boulders of up to 0.15 m³ in size exposed or lying on the surface.

b) Conservation of Top Soil

Where suitable Top Soil exists within the limits of the area to be cleared and grubbed, the contractor shall, if ordered by the Engineer, remove the top soil together with any grass and other suitable vegetation. If not used immediately, the top soil shall be transported and deposited in stockpiles for later use.

1.2. Excavation

All excavation should be carried out to the lines and levels as shown in the drawings or as instructed by the Engineer. While executing excavations, the contractor shall take adequate precautions against soil erosion and water pollution. Over excavation shall not be permitted. Any excess depth excavated below the formation levels as specified shall be made by the contractor at his own expense by backfilling with suitable material of similar characteristics to those of materials with compaction.

In the excavation of trenches or foundation any materials e.g. rocks, stones, tree, roots, old foundations should be removed and water drained out. Pumping out the water should be preferred if the pumping equipment can be made available at the site. If necessary, temporary shoring should be fixed in order to safeguard any slips of earth and safety of the worker.

Provision should be made at site to the shore up, support and adequately protect any works in the vicinity likely to be affected by the excavation. Any damage to drains, floors, building, pipe lines or any existing work should be made good at the expense of the contractor.

Specifications

No blasting should be carried out without the permission of the Engineer. In carrying out blasting, all precautions must be taken to avoid damage or injury to person or property and observe the regulation laid down by the Government of Nepal.

Precaution should be taken to prevent water from surface, subsoil or rainwater from accumulating in the excavated area, and keep such excavation reasonably dry at all times. All the surplus material should be deposited or removed as instructed by the Engineer. Any excavated rock, if advised by the Engineer, may be broken up and used as rubble or metal required for the project work.



2. Construction Materials

2.1. Cement

All cement used on the works should be the best quality Ordinary Portland Cement and should comply with the requirements of NS 49:2041 or equivalent Indian or British Standard.

Cement shall be free flowing and free of lumps. It shall be supplied in the manufacturer's sealed unbroken bags or in bulk. Bagged cement shall be transported in vehicles provided with effective means of ensuring that it is protected from the weather.

Bulk cement shall be transported in vehicles or in containers built and equipped for the purpose.

Cement in bags shall be stored in a suitable weatherproof structure of which the interior shall be dry and well-ventilated at all times. The floor shall be raised above the surrounding ground level not less than 30 cm and shall be so constructed that no moisture rises through it.

Each delivery of cement in bags shall be stacked together in one place. The bags shall be closely stacked so as to reduce air circulation with min gap of 500 mm from outside wall. If pallets are used, they shall be constructed so that bags are not damaged during handling and stacking. Stack of cement bags shall not exceed 8 bags in height. Different types of cement in bags shall be clearly distinguished by visible marking and shall be stored in separate stacks.

Cement from broken bags shall not be used in the works. Cement in bags shall be used in the order in which it is delivered.

Bulk cement shall be stored in weather proof silos which shall bear a clear indication of the type of cement contained in them. Different types of cement shall not be mixed in the same silo.

The Contractor shall provide sufficient storage capacity on site to ensure that his anticipated programme of work is not interrupted due to lack of cement.

Cement which has become hardened or lumpy or fails to comply with the Specification in any way shall be removed from the Site.

All cement for any one structure shall be from the same source as far as possible.



2.2. Aggregates

The material should be chemically inert in combination with cement used, strong, hard, durable of limited porosity, clean and free from adhering coatings, clay lumps and organic or the impurities which might cause the corrosion of reinforced cement or impair the strength or durability of the concrete complying with IS 383 (1970). If required, all or any portion of the aggregate must be washed thoroughly as advised by the Engineer.

The maximum quantity of deleterious material shall not be more than 5% of the weight of Coarse Aggregate. Whenever feasible, periodic sampling and analysis of the aggregate should be done to maintain the quality and uniformity of the materials collected for use.

Coarse aggregate should as far as possible be angular or rounded in shape. Aggregate with high percentage of flaky or elongated particles should be rejected. The amount of fine particles occurring in a free state or as a loose adherent should not exceed 1% when determined by the laboratory sedimentation test. After twenty-four hours in water, a previously dried sample should not gain more than 10% in weight.

Fine aggregate, whenever feasible should be natural sand. Fine aggregate derived by crushing coarse aggregate may be used in combination with natural sand in suitable proportions. The caustic soda tests for organic impurities should show a colour not deeper than of the Standard solution. The setting test for natural sand should be made and after being allowed to settle for three hours the layers of silt deposit on the coarse material should not exceed 8% and the layer of mica deposit should not exceed 2%.

The sand containing more than the allowable percentage of silt shall be washed so as to bring the silt content within the limit.

The aggregates should be stored in such a way as to prevent the admixture of foreign materials. The heaps of fine and coarse aggregates should be kept separate. Different sizes of fine or coarse aggregates should be stored in separate stock piles sufficiently removed from each other to prevent the material at the edge of the piles from getting intermixed.

Sand requiring for mortar for plasterwork shall conform to IS 1542-1977 and for masonry work shall conform to IS 2116-1980.

2.3. Water

As far as possible, only fresh and clean water free from all deleterious matter and chemically inert should be used for mixing mortar or concrete, and water from excavation should not be used. The Engineer should inspect the alternative water sources and advise the most suitable one to be used.

2.4. Timber

Whenever applicable, the timber for carpentry and joinery should be the Sal Wood of the best quality. The timber should be reasonably straight grained. All timber for the works is to be purchased or provided at the work- site immediately after the project started and should be stacked in open as long as possible before use.

All timber and assembled woodwork should be protected from the weather and stored in such a way as to prevent attack by termites, insects or decay fungi.

Where the timbers need to be extended into a wall, they should be thoroughly "brush treated" with a wood preservative, and as much clear air space maintained around the timber where it adjoins the wall as possible.

2.5. Reinforcement

Reinforcement as plain bars and deformed bars and steel fabric shall comply with the following Standards.

NS: 191/ IS: 1786 for high strength deformed steel bars and wires.

IS: 1566 for steel mesh fabric.

NS: 84/ IS: 432 mild steel and medium tensile steel bars.

All reinforcement shall be from an approved manufacturer and, if required by the Engineer, the Contractor shall submit the ISI certification mark or other test certificate from the manufacturer acceptable to the Engineer.

The sampling and frequency of testing shall be as set out in the NS: 84 and NS: 191. All reinforcement not complying with the Specification shall be removed from site.

Storage of Reinforcement

All reinforcement shall be delivered to site either in straight lengths or cut and bent. No reinforcement shall be accepted in long lengths which have been transported bent over double.

Any reinforcement which is likely to remain in storage for a long period shall be protected from the weather so as to avoid corrosion and pitting. All reinforcement which has become corroded or pitted to an extent which, in the opinion of the Engineer, will affect its properties shall either be removed from site or may be tested for compliance with the appropriate Indian Standard in accordance with Sub-clause 814 (1) at the Contractor expense.

Reinforcement shall be stored at least 150 mm above the ground on clean area free of mud and dirt and sorted out according to category, quality and diameter.

Bending Reinforcement

Unless otherwise shown on the Drawing, bending and cutting shall comply with IS: 2502.

The Contractor shall satisfy himself as to the accuracy of any bar bending schedules supplied and shall be responsible for cutting, bending, and fixing the reinforcement in accordance with the Drawing.

Bars shall be bent mechanically using appropriate bar benders. Bars shall be bent cold by the application of slow steady pressure. At temperature below 5°C the rate of bending shall be reduced if necessary to prevent fracture in the steel. Bending reinforcement inside the forms shall not be permitted except for mild steel bars of diameter less or equal to 12 mm, when it is absolutely necessary.

After bending, bars shall be securely tied together in boundless or groups and legibly labelled as set out in IS: 2502.

Fixing Reinforcement

Reinforcement shall be thoroughly cleaned. All dirt, scale, loose rust, oil and other contaminants shall be removed before placing it in position. If the reinforcement is contaminated with concrete from previous operation, it shall be cleaned before concreting in that section.

Reinforcement shall be securely placed and fixed in position as shown in the drawing or directed by the Engineer.

All reinforcement shall be checked of shape, size, diameter and number where necessary. Reinforcement shall be rigidly fixed so that it remains intact during placing of concrete. Any fixers made to the formwork shall not remain within the space to be occupied by the concrete being placed.

No splices shall be made in the reinforcement except where shown on the Drawing or agreed by the Engineer. Splice lengths shall be as shown on the Drawing or directed by the Engineer.

Reinforcement shall not be welded except where required by the contract or agreed by the Engineer. If welding is employed, all welded splices shall be full penetration butt welds complying with the procedures set out in IS: 2751 or IS: 9417 as applicable.

3. Concrete Works**Grade of Concrete**

The commonly used grades of concrete are M10, M15, M20 and M25. In the designation of a concrete mix, letter “M” refers to the Mix and the number to 28th day cube compressive strength of that mix expressed in N/mm².

Strength Requirements of Concrete

Where Ordinary Portland Cement conforming to NS 49: 2041 is used; the compressive strength requirements for various grades of the concrete should be as shown in table below:

Grade of Concrete	Compressive Strength of 15 cm*15cm*15cm Cube	
	At 7 days' Work Test (N/mm ²)	At 28 days' Work Test (N/mm ²)
M10	7	10
M15	10	15
M20	13	20
M25	17	25

It may be noted that for general guidance the grades of concrete listed corresponds approximately to the nominal mixes generally used.

Grade of Concrete	Nominal Mix
M10	1:3:6
M15	1:2:4
M20	1:1.5:3
M25	1:1:2

The Cement content shall not be more than 450 kg/m³ unless special considerations been given in design to cover the risk of cracking due to drying and shrinkage in thin sections or to early thermal cracking and to the increased risk of damage due to alkali silica reactions.

The minimum cement content and maximum water cement ratio is as follows:

S.N.	Exposure	Minimum Cement Content in kg/m ³	Maximum free water cement ratio	Minimum Grade of Concrete
A. Plain Cement Concrete				
1	Mild	220	0.6	
2	Moderate	240	0.6	M15
3	Severe	250	0.5	M20
B. Reinforced Cement Concrete				
1	Mild	300	0.55	M20

Note:

1. *The minimum cement contents shown in the above table are required in order to achieve impermeability and durability having 20 mm size aggregate, in case of 10 mm size add 40 kg/ m³ and in case of 40 mm size aggregate reduce up to 30 kg / m³. In order to meet the strength requirements in the Specification higher contents may be required.*
2. *Exposure can be classified as*
Mild: Concrete surface protected against weather or aggressive conditions
Moderate: Concrete surfaces sheltered from severe rain or freezing whilst wet concrete exposed to condensation and rain. Concrete continuously under water. Concrete in contact or buried under non-aggressive soil/ ground water.
Severe: Concrete surface exposed to severe rain, alternate wetting and drying or occasional freezing whilst or severe condensation.

Mixing Concrete

Proportioning

Concrete mixes shall be proportioned according to the Design mix or prescribed mix as specified. All mixing operations shall be supervised by experienced supervisor. Cement and aggregate shall be batched by weight or by volume as specified in the contract. Water may be measured by weight or volume. The quantity of cement, each size of aggregate and water as indicated by the mechanism employed shall be within a tolerance of plus or minus three percent of the respective weight/ volume per batch agreed by the Engineer. The water to be added to the mix shall be reduced by the amount of free water contained in the coarse and fine aggregates. This amount shall be determined by the Contractor by a method agreed by the Engineer.

Machine Mixing

Concrete for the works shall be batched and mixed in one or more plants or concrete mixer unless the Engineer agrees to some other arrangement. If concrete mixers are used, there shall be sufficient number of mixtures including stand by mixers.

Batching and mixing plants shall be complying with the requirements of IS: 1791 and capable of producing a uniform distribution of the ingredients throughout the mass. Truck mixers shall comply with the requirements of IS: 4925 and shall only be used with the prior approval of the Engineer. If the plant proposed by the Contractor does not fall within the scope of IS: 1791 it shall have been tested in accordance with IS: 4634 and shall have a mixing performance within the limits of IS: 1791.

All mixing operations shall be under the control of an experienced supervisor.

The aggregate storage bins shall be provided with drainage facilities arranged so that the drainage water is not discharged to the weigh hoppers. Each bin shall be drawn at least once per week and any accumulations of mud or silt shall be removed.

If bulk cement is used, the scale and weight hopper for cement shall be distinct from the scale and weight hopper for aggregates.

Cement and aggregates shall be batched by weight. Water may be measured by weight or volume.

The weighing and water dispensing mechanisms shall be maintained in good order.

The nominal drum or pan capacity of the mixer shall not be exceeded. The turning speed and the mixing time shall be as recommended by the manufacturer, but in addition, when water is the last ingredient to be added, mixing shall continue for at least one minute after all the water has been added to the drum or the pan.

The blades of pan mixers shall be maintained within the tolerances specified by the manufacturer of the mixer and the blades shall be replaced when it is no longer possible to maintain the tolerances by adjustment.

Mixers which have been out of use for more than 30 minutes shall be thoroughly cleaned before any fresh concrete is mixed. Mixers shall be cleaned out before changing to another type of cement.

Hand Mixing

Concrete for structural purposes generally shall not be mixed by hand. However, for small volumes of works and where non-structural concrete is required, hand mixing may be carried out subject to approved of the Engineer.

For making hand mixing concrete, cement, sand and aggregate shall be batched separately by volume or by weight as applicable. Then cement and sand shall be mixed dry to uniform colour. The aggregate shall be stacked in a proper shape upon which cement sand mix shall be spread and whole mix shall be mixed to uniform consistency.

For hand mixed concrete the specified quantities of cement shall be increased by 10% and not more than 0.25 cubic meter shall be mixed at one time. During windy weather precautions shall be taken to prevent cement from being blown away in the process of gauging and mixing.

Transportation of Concrete

The concrete shall be discharged from the mixer and transported to the works by means which shall prevent adulteration, segregation or loss of ingredients, and shall ensure that the concrete is of the required workability at the point and time of placing. The loss of

slump between discharge from the mixer and placing shall be within the tolerances specified.

The capacity of the means of transport shall not be less than the full volume of a batch.

The time elapsing between mixing transporting placing and compacting altogether of a batch of concrete shall not be longer than the initial setting time of the concrete. If the placing of any batch of concrete is delayed beyond this period, the concrete shall not be placed in the works.

Placing of Concrete

i) Preparation of Surface to Receive Concrete

Surfaces on which concrete is to be deposited shall be clean, hard and sound and shall be wet but without any standing water. Any flow of water into an excavation shall be diverted through proper side drains to a sump or be removed by other suitable which will prevent washing away the freshly deposited concrete or any of its constituents. Any under drain constructed for this purpose shall be completely grouted up when they are no longer required by a method agreed by the Engineer.

Unless otherwise instructed by the Engineer surfaces against which concrete is to be placed shall receive prior coating of cement slurry or mortar mixed in the proportions similar to those of the fine proportions similar to those of the fines portion in the concrete to be placed. The mortar shall be kept ahead of the concrete. The mortar shall be placed into all parts of the excavated surface and shall not be less than 5 mm thick.

If any fissures have been cleaned out, they shall be filled with mortar or with concrete as instructed by the Engineer.

The amount of mortar placed at one time shall be limited so that it does not dry out or set before being covered with concrete.

ii) Placing Procedures

The Concrete shall be deposited as nearly as possible in its final position. It shall be placed so as to avoid segregation of the concrete and displacement of the reinforcement, other embedded items or form work. It shall be brought up in layers approximately parallel to the construction joint planes and not exceeding 300 mm in compacted thickness unless otherwise permitted or directed by the Engineer, but the layers shall not be thinner than four times the maximum nominal size of aggregate.

When placing on a nearly horizontal surface, placing shall start at the lower end of the surface to avoid decompaction of concrete.

Layers shall not be placed so that they form feather edges nor shall they be placed on a previous layer which has taken its initial set. In order to comply with this requirement,

another layer may be started before initial set of the preceding layer.

All the concrete in a single bay or pour shall be placed as a continuous operation. It shall be carefully worked round all obstructions, irregularities in the foundations and the like so that all parts are completely full of compacted concrete with no segregation or honey combing. It shall also be carefully worked round and between water stops, reinforcement, embedded steelwork and similar items which protrude above the surface of the completed pour.

All work shall be completed on each batch of concrete before its initial set commences and thereafter the concrete shall not be disturbed before it has set hard. No concrete that has partially hardened during transit shall be used in the works and the transport of concrete from the mixer to the point of placing shall be such that this requirement can be complied with.

Concrete shall not be placed during rain which is sufficiently heavy or prolonged to wash mortar from coarse aggregate on the exposed faces of fresh concrete. Means shall be provided to remove any water accumulating on the surface of the placed concrete. Concrete shall not be deposited into such accumulations of water.

In dry weather, covers shall be provided for all fresh concrete surfaces which are not being worked on. Water shall not be added to concrete for any reason.

When concrete is discharged from the place above its final deposition, segregation shall be prevented by the use of chutes, down pipes, trunking, baffles or other appropriate devices.

Forms for walls shall be provided with openings or other devices that will permit the concrete to be placed in a manner that will prevent segregation and accumulations of hardened concrete on the formwork or reinforcement above the level of the placed concrete.

When it is necessary to place concrete under water the Contractor shall submit to the Engineer his proposals for the method and equipment to be employed. The concrete shall be deposited either by bottom-discharging watertight containers or through funnel-shaped tremies which are kept continuously full with concrete in order to reduce to a minimum the contact of the concrete with the water. Special care shall be taken to avoid segregation.

If the level of concrete in a tremie pipe is allowed to fall to such extent that the water enters the pipe, the latter shall be removed from the pour and filled with concrete before being again lowered into the placing position. During and after concreting under water, pumping or dewatering in the immediate vicinity shall be suspended if there is any danger that such work will disturb the freshly placed concrete.

iii) Interruptions to Placing

If the concrete placing is interrupted for any reason and the duration of the interruption cannot be forecast or is likely to be prolonged, the Contractor shall immediately take the

necessary action to form a construction joint so as to eliminate as far as possible feather edges and sloping top surfaces and shall thoroughly compact the concrete. All work on the concrete shall be completed before elapse of initial setting time and it shall not thereafter be disturbed until it is hard enough to resist damage. Plant and materials to comply with this requirement shall be readily available at all time during concrete placing.

Before concreting is resumed after such an interruption the Contractor shall cut out and remedy all damaged or uncompacted concrete, feather edges or any undesirable features and shall leave a clean sound surface against which the fresh concrete may be placed.

If it becomes possible to resume concrete placing without contravening the Specification and the Engineer consents to a resumption, the new concrete shall be thoroughly worked in and compacted against the existing concrete so as to eliminate any cold joints.

In case of long interruption concrete shall be resumed as directed by Engineer.

iv) Dimension of Pours

Unless otherwise agreed by the Engineer, pours shall not be more than two meters high and shall as far as possibly have a uniform thickness over the plan area of the pour. Concrete shall be placed to the full planned height of all pours except in the circumstances described in (iii).

The Contractor shall plan the dimensions and sequence of pours in such a way that cracking of the concrete does not take place due to thermal or shrinkage stresses.

v) Placing Sequence

The Contractor shall arrange that the intervals between successive lifts of concrete in one section of the works are of equal duration. This duration shall not be less than three days or not more than seven days under temperate weather conditions unless otherwise agreed by the Engineer.

Where required by the Engineer to limit the opening of construction joints due to shrinkage, concrete shall not be placed against adjacent concrete which is less than 21 days old.

Contraction gaps in concrete shall be of the widths and in the locations as shown on the Drawing and they shall not be filled until the full-time interval shown on the Drawing has elapsed.

Compaction of Concrete

Concrete shall be fully compacted throughout the full extent of the placed layer. It shall thoroughly worked against the formwork and around any reinforcement and other embedded item, without displacing them. Care shall be taken at arises or other confined spaces. Successive layers of the same pour shall be thoroughly worked together.

Concrete shall be compacted with the assistance of mechanical of immersion vibrators, unless the Engineer agrees another method.

Immersion and surface vibrators shall operate at a frequency of between 70 and 200 hertz. The Contractor shall ensure that vibrators are operated at pressures and voltages not less than those recommended by the manufacturer in order that the compactive effort is not reduced.

A sufficient number of vibrators shall be operated to enable the entire quantity of concrete being placed to be vibrated for the necessary period and, in addition, stand-by vibrators shall be available for instant use at each place where concrete is being placed.

Vibration shall be continued at each until the concrete ceases to contract, air bubbles have ceased to appear, and a thin layer of mortar has appeared on the surface. Vibrators shall not be used to move concrete laterally and shall be withdrawn slowly to prevent the formation of voids.

The vibrators shall be inserted vertically into the concrete to penetrate the layer underneath at regular spacing which shall not exceed the distance from the vibrator over which vibration is visibly effective and some extent of vibration is overlapped.

Vibration shall not be applied by way of reinforcement nor shall the vibrator be allowed to touch reinforcement, sheathing ducts or other embedded items.

Curing of Concrete

Concrete shall be protected during the first stage of hardening from loss of moisture and from the development of temperatures differentials within the concrete sufficient to cause cracking. Concrete shall be cured with wet cotton mat, sheet material or other compound for curing approved by the Engineer. The methods used for curing shall not cause damage of any kind to the concrete.

Curing shall be continued for as long as may be necessary to achieve the above objectives but not less than seven days or until the concrete is covered by successive construction whichever is the shorter period.

The curing process shall commence as soon as the concrete is hard enough to resist damage from the process. In the case of large areas or continuous pours, it shall commence on the completed section of the pour before the rest of the pour is finished.

Water used for curing shall be of the same quality as that used for mixing.

Formed surfaces may be cured by retaining the formwork in place for the required curing period.

Alternatively, Approved curing compound shall be used to cover exposed surface. If instructed by the Engineer, the Contractor shall, in addition to the curing provisions set out above provide a suitable form of shading to prevent the direct rays of the sun reaching the concrete surfaces for at least the first four days of the curing period.

Protection of Fresh Concrete

Freshly placed concrete shall be protected from rainfall and from water running over the surface until it is sufficiently hard to resist damage from these causes.

Concrete placed in the works shall not be subjected to any loading including traffic until it has attained at least its characteristic strength.

Concreting in Hot Weather

The Contractor shall prevent damage to concrete arising from exposure to extreme temperatures, and shall maintain in good working order all plant and equipment required for this purpose

In the event that conditions become such that even with the use of equipment the requirements cannot be met, concrete placing shall immediately cease until such time as the requirements can again be met.

During hot weather the Contractor shall take all measures necessary to ensure that the temperature of concrete at the time of placing in the works does not exceed 30oC and that the concrete does not lose any moisture during transporting and placing.

Such measures may include but are not necessarily limited to the following:

- (a) Shielding aggregates from direct sunshine.
- (b) Use of a mist water spray on aggregates.
- (c) Sun shields on mixing plants and transporting equipment.

Surfaces in which concrete is to be placed shall be shielded from direct sunshine and surfaces shall be thoroughly wetted to reduce absorption of water from the concrete placed on or against them.

After concrete has been placed, the selected curing process shall be commenced as soon as possible. If any interval occurs between completion of placing and start of curing, the concrete shall be closely covered during the interval with polythene sheet to prevent loss of moisture.

Construction Joints

Whenever concrete is to be bonded to other concrete which has hardened, the surface of contact between the sections shall be deemed a construction joint.

Where construction joints are shown in the Drawing, the Contractor shall form such joints in such positions. The locations of joints, which the Contractor requires to make for the purpose of construction, shall be subject to the approval of the Engineer. Construction joints shall be in vertical or horizontal planes except in sloping slabs where they shall be

normal to the exposed surface or elsewhere where the Drawing require a different arrangement.

Construction joints shall be arranged as to reduce to a minimum the effects of shrinkage in the concrete after placing, and shall be placed in the most advantageous positions with regard to stresses in the structures and the desirability of staggering joints.

Feather edges of concrete at joints shall be avoided. Any feather edges which may have formed where reinforcing bars project through a joint shall be cut back until sound concrete has been reached.

The intersections of horizontal and near horizontal joints and exposed faces of concrete shall appear as straight lines produced by use of a guide strip fixed to the formwork at the top of the concrete lift, or by other means acceptable to the Engineer.

Construction joints formed as free surfaces shall not exceed a slope of 20 per cent from the horizontal.

The surface of the fresh concrete in horizontal or near horizontal joints shall be thoroughly cleaned and roughened by means of high-pressure water, and air jets or wire brush, when the concrete is hard enough to withstand the treatment without the leaching of cement. The surface of vertical or near vertical joints shall be similarly treated if circumstances permit the removal of formwork at a suitable time.

Where concrete has become too hard for the above treatment to be successful, the surface whether formed or free shall be thoroughly scabbled by mechanical means, manually or wet sand blasted and then washed with clean water. The indentations produced by scabbling shall not be less than 10 mm deep and shall be away from the finished face by 40 mm.

If instructed by the Engineer the surface of the concrete shall be thoroughly brushed with a thin layer of mortar composed of one part of cement to two parts of sand by weight immediately prior to the deposition of fresh concrete. The mortar shall be kept just ahead of the fresh concrete being placed and the fresh layer of concrete shall be thoroughly and systematically vibrated to full depth to ensure complete bond with the adjacent layer.

No mortar or concrete shall be placed until the joint has been inspected and approved by the Engineer.

4. Brickworks

a) Machine Made Bricks

Machine made Bricks shall be of uniform deep red or copper colour, thoroughly burnt without being vitrified, regular in shape and size and shall have sharp and square sides and edges and parallel faces to ensure uniformity in the thickness of the courses of brickwork. The Brick shall be first class bricks and free from grit and other impurities such as lime, iron and other deleterious salts, conforming NS-1/2035 except that minimum compressive strength when tested flat shall not be less than 8 N/mm² for individual bricks and 10 N/mm² for average 5 specimens and that the size may be according to local practice with a tolerance of ± 5 percent. These shall be well-burnt, sound, and hard with sharp edges and shall emit ringing sound when struck with a mallet. The average water absorption of the brick samples shall not be more than 15% over the dry weight after immersion in cold water for 24 hours.

b) Chimney Bricks

The Brick shall be uniform first-class chimney made bricks and free from grit and other impurities such as lime, iron and other deleterious salts, conforming NS- 1/2035 except that minimum compressive strength when tested flat shall not be less than 8 N/mm² for individual bricks and 10 N/mm² for average 5 specimens and that the size may be according to local practice with a tolerance of ± 5 percent. These shall be well burnt, sound, and hard with sharp edges and shall emit ringing sound when struck with a mallet. The bricks shall be provided with frogs. The average water absorption of the brick samples shall not be more than 25% over the dry weight after immersion in cold water for 24 hours.

Mortar

Cement Sand Mortar

Cement Sand mortar shall be mixed in proportion of materials as indicated in the contract. The ingredients shall be accurately measured by volume and shall be well and evenly mixed together before adding required amount of water to make homogeneous paste of workable consistency. If hand mixing is allowed, it shall be done in clean and smooth hard platform. The gauged materials shall be put in the platform and mixed dry thoroughly. Water in required quantity will then be added and the whole mix will be mixed again until it is homogeneous and of uniform colour.

a) Sand

Sand shall comply with IS: 2116. It shall consist of natural sand, crushed stone sand, crushed gravel sand or a combination of any of them. It shall be hard, durable, clean and free from deleterious & organic matters. It shall not contain clay, silt and fine dust more than 5 % by weight.

b) Cement

Cement shall be ordinary Portland cement and shall comply with following requirements.

Ordinary and High Strength Portland Cement (OPC and HSPC), Portland Slag Cement (PSC), Portland Pozzolana Cement (PPC) shall be sampled according to IS: 3535 and tested according to NS: 123/IS: 4031.

Chemical and physical requirements for Ordinary Portland Cement, High Strength Portland Cement, Portland Slag Cement and Portland Pozzolana Cement shall be in accordance with NS: 49/IS: 269, IS: 8112, IS: 12269, IS: 455, IS: 1489 respectively.

Soaking of Bricks

Bricks shall be soaked in water for a minimum period of one hour before use. When bricks are soaked, they shall be removed from the tank sufficiently in advance so that at the time of laying they are skin dry. Such soaked bricks shall be stacked on a clean place where they are not spoilt by dirt, earth, etc.

Laying of Bricks

All bricks work shall be laid in English bond, even and true to line, plumb, level and all joints accurately kept. Whole bricks used on the face shall be selected ones of uniform size and true rectangular face.

Bricks shall be laid with frogs up, if any, on a full bed of mortar. When laying, bricks shall be slightly pressed so that the mortar gets into all the surface pores of bricks to ensure proper adhesion. All joints shall be properly flushed and packed with mortar so that no hollow spaces are left.

Before laying bricks in foundation, a layer of not less than 12 mm of mortar shall be spread to make the surface on which the brick work will be laid even. Immediately thereafter, the first course of bricks shall be laid.

The brick work shall be built in uniform layers. Corners and other advanced work shall be raked back. Brick work shall be done true to plumb or in specified batter. No part of it, during construction, shall rise more than one meter above the general construction level, to avoid unequal settlement and improper jointing.

The thickness of joints in case of brick masonry shall not exceed 10 mm.

When fresh masonry is to be placed against existing surface of structures, the surface shall be cleaned of all loose materials, roughened and wetted as directed by the Engineer so as to affect a good bond with the new work.

Curing of Brick Works

Brick work shall be protected from rain by suitable covering. Masonry work in cement mortar shall be kept constantly moist on all faces for a minimum period of seven days. The top of the masonry work shall be left flooded with water so as not to disturb or washout the brick mortar.

During hot weather, all finished or partly completed work shall be covered or wetted in such a manner as to prevent rapid drying of the brick work.

Alternatively, use of Chemical may be proposed by the Contractor to assist him for curing. Contractor shall submit to the Engineer full details of the Chemical he purposes to use and the manner in which he proposed to add in the mortar mix/ paint. Approval of the Engineer shall be obtained based on test of the mortar.

Scaffolding

The scaffolding shall be sound and strong to withstand all loads likely to come upon it. The holes which provide resting space for horizontal members shall not be left in masonry under one meter in width or immediately near the skew backs of arches. The holes left in the masonry work for supporting the scaffolding shall be filled and made good.

Condition of Equipment

All equipment used for mixing or transporting mortar and bricks shall be clean and free from set mortar, dirt or other injurious foreign substances.



5. Stone Works

Stone

The stones to be used shall be durable and angular in shape. If boulders are used, they shall be broken into angular pieces. The stones shall be sound, hard, and free from iron bands, spots, sand holes, flaws, shakes, cracks or other defects. The stone shall not absorb water more than 5 per cent. The specific gravity of the stone shall not be less than 2.50. Except otherwise described in the contract, the length of any stone shall not exceed three times its height. The breadth of the stone on the bed shall not be less than 150 mm nor greater than $\frac{3}{4}$ the thickness of the wall. At least 85% of the stones used in masonry, except those used for chinking as chips or spalls of stones shall have individual volumes of more than 0.01 m³. The chips or spalls used including voids in the dry stone masonry shall not be more than 20% of the stone masonry by volume. In case of mortared masonry, the total volume of mortar and spalls taken together shall not be more than 30% of the mortared masonry. Representative samples of the stones intended for use in the works shall be submitted to the Engineer for prior approval. Further representative samples shall be submitted for approval whenever there is a change in the type or strength of the rock that the Contractor intends to use in masonry work.

Mortar

Cement Sand Mortar

Cement Sand mortar shall be mixed in proportion of materials as indicated in the contract. The ingredients shall be accurately measured by volume and shall be well and evenly mixed together before adding required amount of water to make homogeneous paste of workable consistency. If hand mixing is allowed, it shall be done in clean and smooth hard platform. The gauged materials shall be put in the platform and mixed dry thoroughly. Water in required quantity will then be added and the whole mix will be mixed again until it is homogeneous and of uniform colour.

c) Sand

Sand shall comply with IS: 2116. It shall consist of natural sand, crushed stone sand, crushed gravel sand or a combination of any of them. It shall be hard, durable, clean and free from deleterious & organic matters. It shall not contain clay, silt and fine dust more than 5 % by weight.

d) Cement

Cement shall be ordinary Portland cement and shall comply with following requirements.

Ordinary and High Strength Portland Cement (OPC and HSPC), Portland Slag Cement (PSC), Portland Pozzolana Cement (PPC) shall be sampled according to IS: 3535 and tested according to NS: 123/IS: 4031.

Chemical and physical requirements for Ordinary Portland Cement, High Strength

Portland Cement, Portland Slag Cement and Portland Pozzolana Cement shall be in accordance with NS: 49/IS: 269, IS: 8112, IS: 12269, IS: 455, IS: 1489 respectively.

Construction

The method of construction described herein shall hold in all Clauses of this Section, wherever applicable.

(1) General

Construction shall be carried out in accordance with I.S. 1597-1992, Code of Practice for construction of stone masonry, Part 1 Rubble stone masonry or Part 2 Ashlar Masonry as appropriate. All stratified stone possessing bedding planes shall be laid with its natural bed as nearly as possible at right angles to the direction of load. In the case of arch rings, the natural bed shall be radial. Face work groins shall be built to a height not exceeding one meter in advance of the main body of the work and adjacent walling stepped down on either side. Masonry face work between the groins shall then be built to a height not exceeding 500 mm above the backing which shall then be brought up level with the completed face work. At no time shall the backing be built up higher than the face work.

Except for dry rubble walling, all joints (gaps) shall be sufficiently thick to prevent stone to stone contact and the gaps shall be completely filled with mortar. Stones shall be clean and sufficiently wetted before laying to prevent absorption of water from mortar.

Placing loose mortar on the course and pouring water upon it to fill the gaps in stones shall not be allowed. Mortar shall be fluid, mixed thoroughly and then poured in the joints. No dry or hollow space shall be left anywhere in the masonry and each stone shall have all its faces completely covered with mortar of the thickness as specified for joints.

The bed which is to receive the stone shall be cleaned, wetted and covered with a layer of fresh mortar. All stones shall be laid full in mortar both in bed and vertical joints and settled carefully in place with a wooden mallet immediately after placement and solidly embedded in mortar before it has set. Clean and wet chips and spalls shall be wedged into the mortar joints and bed whenever necessary to avoid thick joints or bed of mortar. When the foundation masonry is laid directly on rock, the bedding face of the stones of the first course shall be dressed to fit into rock snugly when pressed down in the mortar bedding over the rock. For masonry works over rock, a levelling course of M15/40 or M15/20 concrete 100mm thickness shall be laid over rock and then stone masonry work shall be laid without foundation concrete block.

In case, any stone already set in mortar is disturbed or the joints broken, it shall be taken out without disturbing the adjoining stones and joints. Dry mortar and stones thoroughly cleaned from the joints and the stones shall be reset in fresh mortar. Sliding one stone on top of another which is freshly laid, shall not be allowed.

Shaping and dressing of stone shall be done before it is laid in the work. Dressing and hammering of the laid stones which will loosen the masonry, shall not be allowed.

Building up face wall tied with occasional through stones and filling up the middle with stones spalls and chips or dry packing shall not be allowed. Vertical joints shall be staggered. Distance between the nearer vertical joints of upper layer and lower layer in coursed rubble masonry shall not be less than half the height of the course.

Masonry in a structure between two expansion joints shall be carried up nearly at one uniform level throughout but when breaks are unavoidable the masonry shall be raked in sufficiently long steps to facilitate jointing of old and new work. The stepping of raking shall not be more than 45 degrees with the horizontal.

Masonry shall not be laid when the air temperature in the shade is less than 3°C. Newly laid masonry shall be protected from the harmful effects of weather.

(2) Concreting Capping

Where masonry structures are to receive a concrete capping. The joints to the upper surface of the masonry shall be raked out to a depth of 10 mm prior to placing of the concrete to the capping. The concrete for capping shall be as per the Drawing or as directed by Engineer and shall conform to Section 2000.

(3) Pointing

Where external faces of the mortared masonry work will be backfilled or otherwise permanently covered up, the mortared joint shall be finished flush to the faces of the adjacent stonework.

Where mortared masonry faces will remain exposed, the mortar joints shall be pointed to a consistent style as shown on the Drawing. Pointing shall be carried out using mortar 1:3 by volume of cement and sand or as shown on the Drawing. The mortar shall be filled and pressed into the raked-out joints before giving the required finish. The pointing, if not otherwise mentioned shall be ruled type for which it shall, while masonry work is still green, be ruled along the centre with half round tools of such width as may be specified by the engineer. The excess mortar shall then, be taken off from the edges of the lines and shall not be unnecessarily plastered over the exposed stone works. The thickness of the joints shall not be less than 3mm for Ashlar masonry.

However, the maximum thickness of joints in different works shall be as follows: Random Rubble: 20 mm

Coursed Rubble: 15 mm

Ashlar masonry: 5 mm

6. Formworks

The Contractor shall be responsible for designing and construction of formwork so that they will support the loads imposed on them by the fresh concrete together with additional stresses imposed by vibrating equipment and by construction traffic, and so that after the concrete has hardened the formed faces shall be in the positions shown on the Drawing within the tolerances set out.

Construction of Formwork

Joints in formwork for exposed faces shall, unless otherwise specified, be evenly spaced and horizontal or vertical and shall be continuous in a regular pattern.

All joints in formwork shall be water tight. Where reinforcement projects through formwork, the form shall fit closely round the bars.

Formwork shall be so designed that it may be easily removed from the work without damage to the faces of the concrete. It shall also incorporate provisions for making minor adjustments in position, if required, to ensure the correct location of concrete faces. Due allowance shall be made in the position of all formwork for movement and settlement under the weight of fresh concrete.

Surfaces at slopes less than 20° may be formed by screeding. Surfaces at slopes between 20° and 30° shall generally be formed if the Contractor can demonstrate to the satisfaction of the Engineer that such slopes can be screeded with the use of special screed boards to hold the concrete in place during vibration.

Horizontal or inclined formwork to the upper surface of concrete shall be adequately secured against uplift due to the pressure of fresh concrete. Formwork shall also be tied down or otherwise secured against floating within the body of the concrete.

The internal and external angles on concrete surfaces shall be formed with fillets and chamfers of the sizes shown on the Drawing unless otherwise instructed by the Engineer.

Supports for formwork may be bolted to previous placed concrete provided the type of bolt used is acceptable to the Engineer. If metal ties through the concrete are used in conjunction with bolts, the metal left in shall not be close to the face of the concrete by less than 50 mm.

Formwork shall not be re-used after it has suffered damage as it will impair the finished surfaces of the concrete. Where circumstances prevent easy access within the form, temporary openings shall be provided through the formwork for cleaning and inspection.

Shear keys of the size and shape as indicated on the Drawing shall be provided in all construction joints.

Where precast concrete elements are specified for use as permanent formwork, or proposed by the Contractor and agreed by the Engineer, they shall comply with the requirements of formwork as specified in the Specification in respect of surface finish, strength and rigidity. Such elements shall be set true to line and level within the tolerances prescribed for the appropriate class of finish and fixed so that they cannot move when concrete is placed against them.

Preparation of Formwork

Before any reinforcement is placed into position within formwork, the formwork shall be thoroughly cleaned and then dressed with a release agent. The agent shall be either a suitable oil incorporating a wetting agent, an emulsion of water suspended in oil or a low viscosity oil containing chemical agents. The Contractor shall not use an emulsion of oil suspended in water nor any release agent which causes staining or discoloration of the concrete, air holes on the concrete surface, or retards the set of the concrete or affects the strength of concrete.

In order to avoid colour differences on adjacent concrete surfaces, only one type of release agent shall be used in any one section of the works.

In cases where it is necessary to fix reinforcement before placing formwork, all surface preparation of formwork shall be carried out before it is placed into position. The Contractor shall not allow reinforcement or pre-stressing tendons to be contaminated with formwork release agent.

Before placing concrete all dirt, construction debris and other foreign matter shall be removed completely from within the placing area.

Before concrete placing commences, all wedges and other adjusting devices shall be secured against movement during concrete placing and the Contractor shall maintain a watch on the formwork during placing to ensure that no movement occurs. If any movement noticed, the formwork shall be set right immediately.

Removal of Formwork

Formwork shall be carefully removed without shock or disturbance to the concrete. No formwork shall be removed until the concrete has gained sufficient strength to withstand any stresses safely to which it may thereby be subjected.

The minimum periods which shall elapse between completion of placing concrete and removal of forms are given in Table and apply to ambient temperatures higher than 10oC. At lower temperatures or if cement other than ordinary Portland are involved, the Engineer may instruct longer periods.

Alternatively, formwork may be removed when the concrete has attained the strength set out in Table, provided that the attained strength is determined by making test cubes and curing them under the same conditions as the concrete to which they refer.

Compliance with these requirements shall not relieve the Contractor of his obligation to delay removal of formwork until the removal can be completed without damage to the concrete.

If the Contractor wishes to strip formwork from the underside of arches, beams and slabs before the expiry of the period for supports set out above, it shall be designed so that it can be removed without disturbing the supports. The Contractor shall not remove supports temporarily for the purpose of stripping formwork and subsequently replace them.

As soon as the formwork has been removed, bolt holes in concrete faces other than construction joints which are not required for subsequent operations shall be completely filled with mortar sufficiently dry to prevent any slumping at the face. The mortar shall be mixed in the same proportions as the fine aggregate and cement in the surrounding concrete and with the same materials and shall be finished flush with the face of the concrete.

After laying of the formwork and casting of concrete thereby, the date of casting of concrete shall be marked on the surface of related concrete by water proof paint/marker for estimation of curing time and removal time of formwork.

Minimum Periods for Formwork Removal

Position of Formwork	Minimum period for Tempr over 10°C	Strength to be attained
Vertical or near vertical faces of mass Concrete	24 hours	0.2 fck
Vertical or near vertical faces of reinforced	48 hours	0.3 fck
Underside of arches beams and slabs (formwork only)	4 days	0.5 fck
Supports to underside of arches, beams and slabs	14 days	fck
Arched linings in tunnels and underground works	24 hours	4 N/mm ²

Note: f_{ck} is the Characteristic Strength for the class of concrete used.

7. Plastering Works

Plastering shall be started from top and worked down. All putlog holes shall be properly filled in advance of the plastering as the scaffolding is being taken down. Wooden screeds 75 mm wide and of the thickness of the plaster shall be fixed vertically 2.5 to 4 metres apart to act as gauges and guides in applying the plaster. The mortar shall be laid on the wall between the screeds using the plaster's float and pressing the mortar so that the raked joints are properly filled. The plaster shall then be finished off with a wooden straight edge reaching across the screeds. The straight edge shall be worked on the screeds with a small upward and sideways motion 50 mm or 75 mm at a time. Finally, the surface shall be finished off with a plaster's wooden float. Metal floats shall not be used.

When recommencing the plastering beyond the work suspended earlier the edges of the old plaster shall be scraped, cleaned and wetted before plaster is applied to the adjacent areas.

No portion of the surface shall be left out in a condition to be patched up later on.

The plaster shall be finished to a true and plumb surface and to the proper degree of smoothness as required by the Engineer.

The average thickness of plaster shall not be less than the specified thickness. The minimum thickness over any portion of the surface shall not be less than the specified thickness minus 3 mm.

Any cracks which appear in the surface and all portions, which sound hollow when tapped, or are found to be soft or otherwise defective, shall be cut out in rectangular shape and re-plastered as directed by the Engineer.

8. Gabion Works

This specification covers mechanically woven, mechanically selvedge gabions and Reno mattresses produced from double twist wire mesh used for manufacturing, assembling and installation of the product.

This specification covers gabions and Reno mattresses in which the mesh wire, lacing wire and the selvedge wire are (1) Zn coated.

Gabions and mattresses shall be manufactured with all components mechanically connected at the production facility. The front, base, back and lid of the gabions shall be woven into a single unit. The diaphragms shall be factory connected to the base. The lid of the Reno mattresses may be a separate piece made of same type of mesh as the basket.

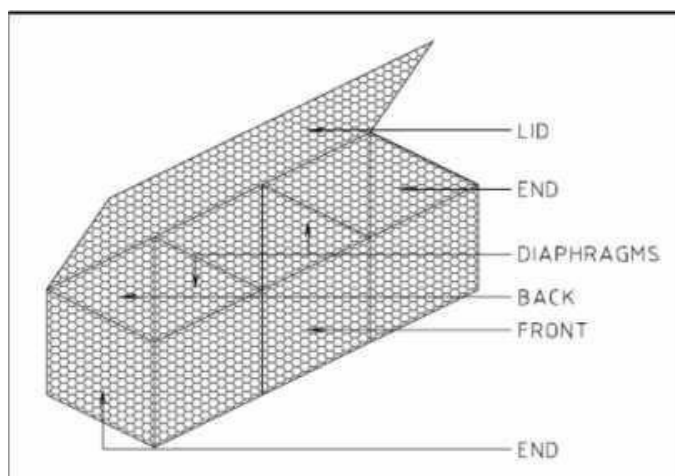
Materials

Stone

Stones used for filling the gabion boxes or mattresses shall be clean, hard, sound, unweathered and angular rock fragments or boulders. The specific gravity of the stone shall be not less than 2.50 and the stones shall not absorb water more than 5 percent when tested as per IS: 1124. The length of any stone shall not exceed three times its dimension of the mesh of the crate. However smaller size of stones as spalls shall be allowed for filling voids and its volume including voids shall not be more than 20 percent of the total volume of the stone. Before filling any gabion boxes and mattresses the Contractor shall submit representative samples of the rock he proposes to use in the gabion for approval by the Engineer. Further representative samples shall be submitted for approval each time when there is a change in the type and strength of the rock.

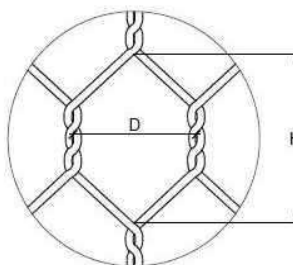
Gabion

Gabions are boxes made of hexagonal double twisted woven wire mesh, divided into cells by means of diaphragms which help to reinforce and strengthen the structures. They are interconnected with other similar units and filled with stones at the project site to form flexible, permeable and monolithic structures such as gravity retaining walls, channel linings, weirs etc.



Gabion Box

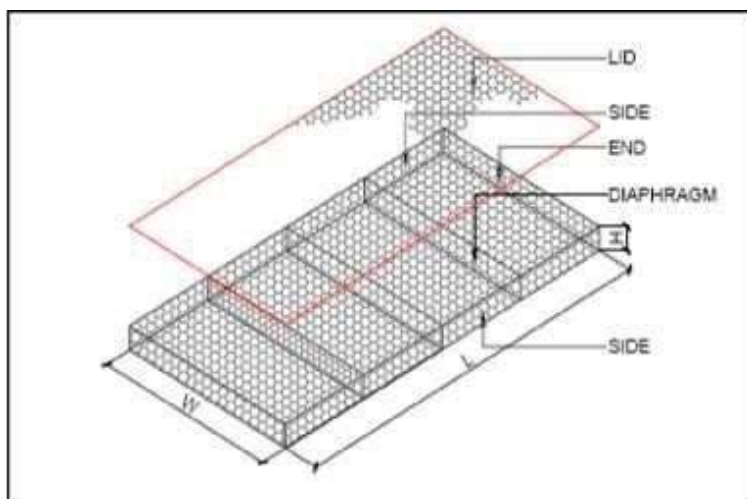
Double twisted wire mesh is a non-raveling mesh made by twisting continuous pairs of wires through three one-half turns (commonly called double-twisted) as shown in fig , to form hexagonal shaped openings which are then interconnected to adjacent wires to form hexagonal openings.



Double Twist Wire Mesh

Jumbo Gabion: Jumbo Gabion, if applicable is a special form of gabion with width 1.5 m or 2 m made of hexagonal double twisted woven wire mesh, divided into cells by means of diaphragms which help to reinforce and strengthen the structures. They are interconnected with other similar units and filled with stones at the project site to form flexible, permeable and monolithic structures such as gravity retaining walls, channel linings, weirs etc.

Reno Mattresses: Reno mattress is a special form of gabion with large plan area / thickness ratio, uniformly partitioned into internal cells by means of diaphragms and having smaller mesh openings than the mesh used for gabions. Reno mattresses are generally used in river training works such as river bank protection, channel lining, launching apron etc.

**Reno Mattress****Mesh and Box Characteristics**

Mesh types and shapes shall be as given in Table.

Mesh Type	'D' Nominal Size, mm	Tolerances
10 x 12	100	+16% to -4%
8 x 10	80	
6 x 8	60	

The mesh and Box characteristics of Gabions are given in Table below.

Mesh Type	10 x 12
'D' mm	100
Wire Type	Zn Coated
Mesh Wire dia., mm	3.00
Edge/ Selvedge Wire dia., mm	3.90
Lacing wire dia., mm	2.40
Typical Sizes: L x B x H / (No. of diaphragms)	Box Gabions: 4 x 1 x 1 / 3 Nos, 3 x 1 x 1 / 2 Nos, 2 x 1 x 1 / 1 No, 1.5 x 1 x 1 / 0 No, 1.5 x 1 x 0.5 / 0 No , 2 x 1 x 0.5 / 1 No , 3 x 1 x 0.5 / 2 Nos, 4 x 1 x 0.5 / 3 Nos,
Tolerances in Size of Gabion Boxes	Length & Width... $\pm 5\%$: Height $\pm 5\%$

General Requirements

Before filling any gabion boxes and mattresses, the Contractor shall submit samples of gabion boxes and/or gabion mattresses assembled, erected and filled with stones for approval which, when approved, shall be retained for reference and comparison with the gabions built as part of the permanent works. The size, type and location of the samples shall be as directed by the Engineer.

Gabion boxes and gabion mattresses shall be assembled, erected and filled with stones in the dry on prepared surfaces except as may be otherwise approved. Approval for assembling and erecting gabions in water shall be given only, if in the Engineer's opinion such a method will produce work which is otherwise in accordance with the Specification.

Preparation of Foundation and Surface for Bedding

The bed on which the gabion boxes or mattresses are to be laid shall be even and conform to the levels shown on the Drawing. If necessary, cavities between rock protrusions shall be filled with material similar to that specified for gabion filling.

Arrangements of Joints

(i) Walls

In walls gabion boxes shall be placed such that vertical joints are not continuous, but staggered. Aprons shall be formed of headers. If more than one unit is required to obtain the necessary width, unit of unequal length shall be used and the joints between should be staggered.

(ii) Channel linings/Slope Protection

In channel linings, gabion box and mattress units shall be laid so that the movement of stone inside the mesh due to gravity or flow of water is avoided. Hence, on side slopes, unit shall be placed with their internal diaphragms, if provided, at right angles to the direction of the slope and, on inverts, as far as possible, at right angles to the direction of flow.

Assembly

Gabion boxes and gabion mattresses shall be assembled on a hard flat surface. After fabrication, unpacking or unfolding, they shall be stretched out and any kinks shall be removed. Creases shall be in the correct position for forming the boxes or mattress compartments. The side and end panels shall be folded into an upright position to form rectangular boxes or compartments. The top corners shall be joined together with the thick selvedge wires sticking out of the corners of each panel. The tops of all sides and partitions shall be leveled except as may be appropriate to special units. The sides and end panels shall be tied together using binding wire of the thickness given in Table , starting at the top

of the panel by looping the wire through the corner and twisting the wire together. Binding shall continue by looping the wire through each mesh and around both selvages with three rounds which shall be joined tightly together by twisting and the end shall be pocked inside the unit. The diaphragms shall be secured in their correct positions by binding in the same way. The bindings wire shall be fixed using 250 mm long nose fencing pliers or equivalent approved tools.

The gabion boxes and gabion mattresses shall be laid in such a manner that the hinges of the lid will be on the lower side on slopes and on the outer side in walls.

Where mattresses are laid horizontally hinges shall not be placed on the downstream side.

Filling

Except in the case of sack gabions, the crates shall be placed in their final position before filling commences. They shall be stretched to their full dimension and securely pegged to the ground or wired to adjacent gabion before filling. The vertical corners shall be kept square and to full dimension by inserting a steel bay of at least 20 mm diameter at each vertical corner, maintaining it in the correct final position throughout the filling process, and removing it when the crate is full. Before filling commences, the selvages of the crate shall be bound to the selvages of adjacent crates with binding wire. Where crates are being assembled in position in a wall the binding of the edges of each crate, the assembly process and the binding together of adjacent crates shall be carried out in the same operation.

Before filling with stone, gabion shall be anchored at one end or side and stretched from the opposite end or side by inserting temporary bars and levering them forward. The top and bottom shall be kept stretched by tensioning with tie wires attached to an anchorage or equivalent approved method until the gabion has been filled. The gabions shall be inspected at this stage but before filling with stone to ensure that the tie/wiring has been properly carried out and the gabion boxes or gabion mattresses are not pulling apart. Gabion boxes or gabion mattresses may be tensioned either singly or in the case of a long straight structure by staining a number of units together using an approved tensioning system.

The filling shall be carried out by placing individual stones into the gabion by hand in courses in such a manner that the stones are bedded on each other and bonded as in dry random rubble masonry as per Clause 708. No loose stones shall be tipped into the crate and the practice of coursing and bonding the outer layer and filling the interior with unlaidd stones shall not be permitted.

All the gabions exposed to outer surface shall be provided with bracing. All 1m deep gabions shall be filled in three equal layers and 0.5 m deep gabions in two equal layers. Horizontal bracing wires made with the same bindings wire as used for tying shall be fixed

directly above each layer of the stone in the compartments, the wires being looped round two adjoining meshes in each side of the compartment and joined together to form a double tie which shall be tensioned by wind lacing together to keep the face of the gabions even and free from bulges. Bracing wires shall be spaced horizontally along and across the gabions at distances not greater than 0.5 m. Where the upper faces of gabion boxes are not covered with further gabions vertical bracing wires shall be fitted between the top and bottom mesh using two tie wires per square meter of surface.

The ties shall be fixed to the bottom of the units prior to filling and tied down to the lid on completion. Where a double layer of gabion boxes is used to form an apron both upper and lower layers shall have vertical tie wires.

Securing Lids

The gabion boxes and mattress compartment shall be over filled by 50 mm above their tops to allow for subsequent settlement. The lids shall then be tied down with binding wire to the tops of all partition panels. The lids shall be stretched to fit the sides exactly by means of suitable tool but due care shall be taken to ensure that the gabions are not so full that the lids are overstretched. The corners shall be temporarily secured first.

Mechanical Properties

Where mesh and connection strength is specified, the minimum strength requirements of the mesh when tested shall be as shown in Table below:

Mesh Type	10 x 12
Characteristics	Zn
Mesh Wire Dia.(mm)	3.00
Parallel to twist (kN/m)	46.00
Perpendicular to twist (kN/m)	22.00
Selvedge Strength (kN/m)	20.00
Panel to Panel Connection using lacing wire or fasteners (kN/m)	11.00
Punch Test (kN)	22.00

Physical Properties

The coating weights shall conform to the requirements of NS: 163/ IS: 4826. Heavily Coated and soft type as shown in Table. The zinc coating shall remain adherent to the steel wire and conform to such that zinc coating does not flake off, nor crack to such an extent that there is possibility of removing any zinc by rubbing with bare fingers.

Nominal Diameter of Galvanized wire, mm	Mass of Zinc coating, g/m²	Permitted tolerances (+/-) on wire diameters, mm
2.00	240	0.05
2.20	240	0.06
2.40	260	0.06
2.70	260	0.07
3.00	270	0.08
3.40	270	0.09
3.90	280	0.10

Tensile Strength

The tensile strength of wire used for double-twisted mesh, lacing wire, and stiffener, when tested shall be in accordance with the requirements of IS 280 for soft wire (350-550 MPa) at a minimum elongation of 10 percent, performed on a gauge length of test specimen as 200 mm.

9. Pipe Works**Materials****a) HDPE Pipe**

HDPE pipes, if required to be supplied shall comply with the requirements of NS: 40 or IS 4984-1995. The material used for the manufacture of pipes should not constitute toxic hazard, should not support microbial growth and should not give rise to unpleasant taste or odour, cloudiness or discoloration of water. Pipes shall be classified according to the grade of materials as given in Table and followed by pressure rating and nominal diameter.

Classification of Pipe Material

S.N.	Material Grade	MRS (Minimum Required Strength) of Material in MPa, at 20 °C, 50 Years	Maximum Allowable Hydrostatic Design Stress (σ), MPa	
			At 20 °C	At 50 °C
1	PE 80	8	6.3	5.0
2	PE 100	10	8.0	6.3

Classification of Pipe by Pressure Rating

Pressure Rating of Pipe	Maximum Permissible Working Pressure (MPa)
PN 2.5	0.25
PN4	0.40
PN6	0.60
PN10	1.00
PN12.5	1.25
PN16	1.60

The specified base density shall be between 940.5 kg/m³ and 946.4 kg/m³ (both inclusive) when determined at 27°C according to procedure prescribed in Annex A of IS 7328: 1992. The value of the density shall also not differ from the nominal value by more than 3 kg/m³ as per 5.2.1.1 of IS 7328: 1982.

The percentage of anti-oxidant used shall not be more than 0.3 percent by mass of finished resin. The anti-oxidant used shall be physiologically harmless and shall be selected from the list given in IS 10141: 1982.

The outside diameters of pipes, tolerance of the same and ovality of pipe shall be as given in Table 2 of IS 4984:1995. The minimum and maximum wall thickness of pipes for the different grades of materials, namely, PE 80 and PE 100 shall be as given in Tables 3, 4 and 5 respectively in IS 4984:1995.

The internal and external surfaces of the pipes shall be smooth, clean and free from

grooving and other defects. The ends shall be cleanly cut and shall be square with axis of the pipes. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible, provided that the wall thickness remains within the permissible limits.

b) Galvanized Iron Pipes

GI pipe if required to be supplied shall comply with this specification. GI pipes (tubes) shall be galvanized mild steel hot finished seamless (HFS) or welded (ERW) HRIW or HFW screwed and socketed conforming to the requirements of IS 1239 Part-1 for light, medium & heavy grade. They shall be of the diameter (nominal bore) specified in the description of the item, the sockets shall be designated by the respective nominal bores of the pipes for which they are intended.

Galvanizing shall conform to IS 4736:1986. Zinc containing at least 98.5 percent by mass should be used for the purpose of galvanizing, or the molten metal in galvanizing bath shall contain not less than 98.5 percent by mass of zinc. The zinc coating shall be uniform adherent, reasonably smooth and free from such imperfections as flux, ash and dross inclusions, bare patches, black spots, pimples, lumping runs, rust stains bulky white deposits and blisters. The pipes and sockets shall be cleanly finished, well galvanized in and out and free from cracks, surface flaws, laminations and other defects. All screw threads shall be clean and well cut. The ends shall be cut cleanly and square with the axis of the tube. The test for galvanization shall be carried out as per IS 4736:1986 or equivalent.

Steel tubes covered by this standard shall be classified as light, medium and heavy depending on the wall thickness. Specifications of light, medium and heavy pipes as per IS 1239 Part 1, shall be as below:

Dimensions and Nominal mass of Steel Tubes -Light

Nominal Bore (mm)	Outside Diameter (mm)		Thickness (mm)	Mass of Tube (kg/m)	
	Maximum	Minimum		Plain End	Screw and Socketed
20	26.9	26.4	2.3	1.38	1.39
25	33.8	33.2	2.6	1.98	2.00
32	42.5	41.9	2.6	2.54	2.57
40	48.4	47.8	2.9	3.23	3.27
50	60.2	59.6	2.9	4.08	4.15
65	76.0	75.2	3.2	5.71	5.83
80	88.7	87.9	3.2	6.72	6.89
100	113.9	113.0	3.6	9.75	10.0

Dimensions and Nominal mass of Steel Tubes -Medium

Nominal Bore (mm)	Outside Diameter (mm)		Thickness (mm)	Mass of Tube (kg/m)	
	Maximum	Minimum		Plain End	Screwed and Socketed
20	27.3	26.5	2.6	1.56	1.57
25	34.2	33.3	3.2	2.41	2.43
32	42.9	42.0	3.2	3.10	3.13
40	48.8	47.9	3.2	3.56	3.60
50	60.8	59.7	3.6	5.03	5.10
65	76.6	75.3	3.6	6.42	6.54
80	89.5	88.0	4.0	8.36	8.53
100	115.0	113.1	4.5	12.2	12.5
125	140.8	138.5	4.8	15.9	16.4
150	166.5	163.9	4.8	18.9	19.5

Dimensions and Nominal mass of Steel Tubes -Heavy

Nominal Bore (mm)	Outside Diameter (mm)		Thickness (mm)	Mass of Tube (kg/m)	
	Maximum	Minimum		Plain End	Screwed and Socketed
20	27.3	26.5	3.2	1.87	1.88
25	34.2	33.3	4.0	2.93	2.95
32	42.9	42.0	4.0	3.79	3.82
40	48.8	47.9	4.0	4.37	4.41
50	60.8	59.7	4.5	6.19	6.26
65	76.6	75.3	4.5	7.93	8.05
80	89.5	88.0	4.8	9.90	10.10
100	115.0	113.1	5.4	14.50	14.80
125	140.8	138.5	5.4	17.9	18.4
150	166.5	163.9	5.4	21.3	21.9

The pipe shall be supplied in standard lengths of 6 meters each. Each pipe shall be provided with a corresponding size of one socket at one end and a plastic ring (cover) at the other end for protection of the threads of the pipes. Nonstandard lengths shall be approximately 3 meters in length or as required by the purchaser. One socket to be provided with each pipe at one end and a plastic ring on the other end as mentioned above. All screwed tubes shall be supplied with pipe threads conforming to IS 554. Unless specified otherwise, tubes shall be supplied screwed with taper threads and fitted with one socket having parallel thread. The socket shall conform to all requirements (except 6.4) of IS 1239 (Part 2).

The tolerance on pipe wall thickness and outside diameter of the pipes shall comply with Section 2.4 of BS 1378 or Section 9 of IS1239 or equivalent.

The tensile strength shall be at least 320 MPa (320 N/mm²). The test shall be carried out on full section or strip cut from the selected tubes in accordance with IS 1608 and IS 12278.

When tested in accordance with IS 2329 the tubes shall be capable of withstanding the bend test without showing any signs of fracture or failure. Welded tubes shall be bent with the weld at 90° to the place of bending. The tubes shall not be filled for this test.

Each pipe and fittings shall be tested at the place of manufacture to a hydraulic test pressure or 50 bar (MPa) without showing defects of any kinds, the pressure being maintained sufficiently long (in any case not less than three minutes) for proof and inspection.

Excavation for Pipe

The foundation bed for the pipe shall be excavated true to the lines and levels shown on the Drawing or to such other lines and depths as the Engineer may direct. The pipes shall be placed in shallow excavation of the natural ground or in open trenches cut in existing embankments, taken down to the levels as shown on the Drawing. The additional width of the trench on either sides of the pipe shall be 150 mm or one-fourth of the diameter of the pipe whichever is more. Should the Contractor desire to use mechanical plant for excavating trenches or for laying pipes he shall submit his proposals for approval by the Engineer, but such approval shall not relieve the Contractor from his responsibilities in case of damage to pipes.

The pipe shall be placed where the ground for the foundation is reasonable firm. Where the bottom of the trench as excavated does not provide a suitably firm foundation for the culvert, due to soft, mucky or other unsuitable material being encountered, the unsuitable material shall be excavated to such depth, width and length as directed by the Engineer. The excavation shall then be backfilled with gravel or other approved granular material which shall be properly shaped and thoroughly compacted up to the specified level.

Laying and Jointing of Pipes

Arrangement for handling lifting, loading, transporting, unloading, storage and lowering the pipes in bed shall be such that the pipes do not suffer any damage.

The pipes shall be laid true to line and level, commencing from the outfall. No pipes shall be laid until it has been approved by the Engineer. Pipes shall be laid such that each one is in contact with the bed throughout the length of barrel. The pipes shall be laid closely together against each other so as to obtain tight joints.

Where two or more pipes are to be laid adjacent to each other, they shall be separated by a distance equal to half the diameter of the pipe subject to a minimum of 450 mm.

On completion, all pipe lines, drains etc., shall be flushed from end to end with water and left clean and free from obstructions.

10. Submersible Pump

The submersible pump with the motor assembly offered shall be suitable to operate continuously throughout the operating range required. They shall be as per IS: 8034:2018 or British Standard or equivalent international Standard. Materials used in the construction should be suitable to fulfill the required duty under the specified condition.

Typical materials to be used in pumps in construction given below are intended as a general guide. Bidders may propose other materials specification if they consider them better suited for the purpose, and guarantee their quality; durability and performance. Necessary catalogues/brochures and certificate of Origin and certificate standard of offered submersible pump shall be made available along with the bid. Label/Name plate indicating the information about the submersible pump and standard should be marked on the pump body.

Technical Specification for Submersible Pump

S.N.	Description	Specifications
1	General	
	Application	Irrigation / Water Supply
	Type	Borewell Type Submersible Pump
	Standards	Conforming to IS 8034:2018 (Submersible Pumpsets) and IS 9283:2013 (Motors for Submersible Pumpsets) or latest revision if any
2	Pump Details	
	Power Rating	17.5 HP (13 KW)
	Discharge Capacity	12m ³ /hr
	Total Dynamic Head	187 m
	Pump Type	Multistage, Radial/Mixed flow impellers depending on model
	Pump Bowl Material	Cast Iron
	Impellers & Diffusers	Chrome Steel & Cast Iron
	Shaft Material	Stainless Steel
	Bearings	Water lubricated bush bearings (LTB)
3	Motor Details	
	Type	Water Filled Submersible Motor
	Rating	17.5 HP, Three Phase squirrel cage induction motor
	Starting Method	Star Delta
	Power Supply	3 Phase AC Supply
	Voltage	415 V \pm 10% , 50 Hz \pm 5%

	Speed	2900 \pm 5% RPM (Synchronous speed)
	Cooling & Lubrication	Water Filled and Water Lubricated
4	Operating Conditions	
	Head Range	174 to 326 m
	Maximum Discharge	83 to 233 LPM
5	Efficiency & Performance	
	Pump Efficiency	\geq 65% at duty point
	Motor Efficiency	Compliant with IS 9283
6	Protections	
	Protection Required	<ul style="list-style-type: none"> • Dry Run Protection • Overload and overcurrent protection • Single Phasing Protection

Technical Specification for Control Panel

S.N.	Description	Specification
1	General	Suitable for operating a 17.5 HP, 415 V, 3 Phase, 50 Hz Submersible Pump Set
		Complete with all required protective and operational components
		Designed for indoor or outdoor installation
2	Panel Configuration	
	Type	Floor or Wall Mounted, Weatherproof
	Enclosure	IP 42, Powder coated CRCA Sheet
3	Electrical Ratings	
	Pump Motor Rating	17.5 HP (13 KW)
	Rated Voltage	415V \pm 10%, 3 Phase , 50 Hz
	Control Voltage	230V AC

	Starting Method	Star Delta
4	Main Components	
	MCCB	100 A, 3-Pole with thermal magnetic protection
	Contactors	3 Nos (1 Main, 1 Star, 1 Delta) AC3 Rated
	Overload Relay	Adjustable Thermal OL relay, Manually resettable
	Timer	Star Delta Timer
	Voltmeters & Ammeters	With selector switches
	Phase Sequence Relay	To Prevent motor reversal
	Single Phasing Preventer	Trips Panel on Phase loss
	MCB	For Control and auxiliary circuits
	Push Buttons	Start, Stop, Reset

11. Well Construction

Dug wells are holes in the ground dug by shovel or backhoe. Historically, a dug well was excavated below the groundwater table until incoming water exceeded the digger's bailing rate. The well was then lined (cased) with RCC rings, stones, brick, tile, or other material to prevent collapse. It was covered with a cap of wood, stone, or concrete. Since it is so difficult to dig beneath the groundwater table, dug wells are not very deep. Typically, they are only 3 to 30 meters deep. Being shallow, dug wells have the highest risk of becoming contaminated. The contractor shall excavate the required dimension of Well at the site defined by the Engineer. Location point will be jointly assessed by Contractor and Engineer. The contractor shall be familiar with the environment of the working place and make the necessary arrangements to complete the work in time.

The contractor shall make his own camping arrangement and find necessary access to the site. After completion of works, the area shall be cleared by the contractor of all unnecessary materials used during construction period.

The contractor shall necessarily mobilize suitable manpower and accessory machineries and equipment to ensure timely completion of the said work.

The well shall be constructed to the depth specified. The contractor shall care of water during construction.

After the well construction the well shall be developed by the contractor. Well development shall be carried out for a minimum of 24 hrs. or as directed by the Engineer using suitable equipment of sufficient capacity.

Following the satisfactory completion of well development, the contractor shall carry out the drawdown and recovery tests by using a suitable pump at least minimum of 36 hrs. or as directed by the Engineer.

The contractor shall perform (a) Constant drawdown test.

12. Deep Tubewell

Construction Site

The deep tubewell construction sites are located in different location of Sindhuli District.

Size and Depth of Tubewell

The size of the Tube well shall be 8-inch diameter MS pipe and 8-inch diameter Stainless Steel (S.S.) screens. The total depth of housing and positions of screens shall be fixed after the electrical well logging & well design.

Requirements, Specification, Standards and Brand Names

- The contractor shall fulfil all requirements and obligations under all Clauses of the specification applicable to the construction work involved in the contract. Neither the following clauses of this specification, the detailed description therein, nor quantities shall limit the obligation of the contractor under the accompanying conditions of contract.
- Where items are not included in the Bill of Quantities (BOQ) for any such requirements or obligations, the cost of such requirements or obligations shall be deemed to be spread over all the items of the Bill of Quantities.
- All the standards mentioned herein shall be deemed to form a part of this specification. All references to such standards shall be to the latest edition or revision thereof unless otherwise stated. Where a specific standard is referred to in this specification, another standard will be acceptable, provided that it ensures an equal or higher quality of materials and workmanship than the standards referred to. If the contractor intends to use such alternative standard, he shall notify the Office thereof, submitting with his notice two copies (in English) of the proposed standard, and shall not order any material or perform any work unless and until he has obtained the Office's approval of such standard.
- Brand names used in the specification are only intended to define a standard of quality and performance, and the contractor may use other equivalent products approved by the Office.

Tube Well Construction

General

Required Machine and accessories: Rig Machine, Drill Pipes, Welding generator, Water tank, generator, Welding Generator, compressor, Pumping test unit, etc.



Required Drill bits: 9 5/8", 13 3/4", 17 1/2" diameter bit of sound condition.

Manpower: Hydrogeologist, Driller, Assistant Driller, Helper, Sampler, Driver, etc.

Required Construction materials: Bentonite, Barite, Oxygen & acetylene gas, welding rod, etc.

- The contractor shall make his own camping arrangements and find necessary access to the construction site. After completion of work, the area shall be cleared by the contractor of all unnecessary materials used during the construction period.
- The contractor shall necessarily mobilize the required number of drilling rigs and accessories, and equipment to ensure the timely completion of the said work.
- The record of the strata encountered during drilling shall necessarily be maintained by the contractor. The lithological samples, each of 0.5 kg at an interval of 1m or the change of strata, shall be collected in plastic bags. These samples should be submitted to the office representative at the earliest possible time along with lithological log records.
 - ***Different strata are defined as follows:***
 - *Soft strata:* ➤ *Strata made of clay, silt sand*
 - *Medium strata:* ➤ *Strata made of fine to medium gravel and siltstone*
 - *Hard strata:* ➤ *Strata made of coarse gravel, pebble, boulder, and rocks*
- Centralized at a suitable distance should be kept; however, no centralizer would be used in screen position.
- The Office or any of its authorized representatives shall at all reasonable times have free access to inspect, examine, and test the materials, workmanship, performance of all goods/equipment to be supplied under the contract at any place, including the place of manufacture. The contractor shall at all times co-operate with the Employer for this.
- The contractor shall not alter any of the works except as directed in writing by the Employer. However, the Employer shall have full authority from time to time during the contract by notice in writing to direct the execution of the Contract to alter, amend, omit, add to, or otherwise vary any of the works.
- All documents, correspondence, decisions, and orders concerning the contract shall be considered confidential and restricted in nature by the Employer and shall not be divulged or allowed access to them by any unauthorized person.
- All the work of drilling as mentioned in the Bill of Quantities should be in a sequential manner and will follow the standard norms and practices of deep tube well drilling for water wells.

Tube Well Assembly

Immediately after drilling of the borehole to the specified diameter & depth, the contractor shall necessarily make arrangements for lowering the well assembly in accordance with the design approved by the office.

Construction materials required during the process of construction of the tube well shall be provided by the contractor, and the contractor should manage all transportation.

The casing pipes, strainers, and reducers shall be joined by means of air-tight welding.

Gravel Packing

Immediately after lowering of the well assembly into its final position, the contractor shall fill the annular space between the well assembly and the wall of the borehole with pea gravel in the presence of the technical representative of the office. Before gravel packing bore hole should be clear from heavy mud & lumps by backwashing. To prevent bridging and reduce the possibility of damage to the tube well assembly by sudden collapse of bridged gravel back backwashing should be carried out during the gravel packing. The size of the gravel must be 4mm to 6mm in diameter 4mm to 6mm in diameter in gravel aquifer and below or equal to 4 mm in diameter in fine sand aquifer, subrounded to rounded and free from mud & dust particles. The gravel packing process should be continuous until the entire annular space is filled with the gravel, and then clean water should be pumped in through the casing to remove drilling mud. Tube well sounding must be carried out to ensure well clearance.

Well Development and Pumping Test

Immediately after the lowering of the tube well assembly and gravel packing, the well must be developed by the contractor with the help of a rig machine by back washing, inner washing, and water jetting, and using a compressor for the recommended duration as instructed by and in the presence of an office representative. The tubewell should be developed by an air compressor immediately after gravel packing. The employer would not be bound to pay the bill of work if the tubewell is not well developed due to the delay in the development of the tubewell by the air compressor.

After completion of well development by air Compressor, the contractor must do Well Development by pump with the highest possible discharge as observed in well development work by air compressor with a submersible pump as instructed by and in the presence of an office representative.

After the development of a well by pump, a continuous drawdown pumping test for at least 12 hours should be conducted, and a record must be kept in the format provided by the employer. Immediately after the continuous drawdown test, a recovery test of the well for the required time, as instructed by the office representative, until the water level attains its previous static water level should be conducted.

Preparation of Work Report

After drilling of a pilot hole, resistivity logging should be carried out, similarly after lowering of well, development by compressor, pump, and pumping test should be carried out, each and every record of either design, design data or analysis of such data(s) should be kept by contractor and prepare a final report to be submitted at the employer before demanding payment of work. The employer will not be liable to forward the payment process of the contractor's final bill without completing all of the specified works from site preparation to pump test work, and providing necessary data in the form of reports with verification by the office responsible authority. The format of the Deep tubewell construction report is given below.

Table of Contents

1. Introduction

- 1.1. Background
- 1.2. Location and Accessibility
- 1.3. Objective and Scope of Work
- 1.4. Physiographical and Local Hydrogeological Conditions of Drilling Site
- 1.5. Site Mobilization
- 1.6. Drilling, Sampling and Logging
- 1.7. Well Design and Well Assembly
 - 1.7.1. Expected Discharge Calculation
- 1.8. Lowering of Casing, Screen and Well Plug
- 1.9. Gravel Packing

2. Well Development

- 2.1. Well Development by Rig Machine
- 2.2. Air Compressor
- 2.3. Well development by Pump

3. Pumping Test

- 3.1. Constant-Rate Test
- 3.2. Recovery Test

4 Conclusion

ANNEXES

I. Electrical Resistivity Data

II. Well Assembly Chart

III. Well Design

IV. Driller's Lithological Log

V. Pumping Test Data with Analysis

VI. Recovery Test Data with Analysis

PHOTOGRAPHS



Standard

The quality of casing pipes, slotted screen, and reducer shall meet the NS standard, IS standard, or equivalent.

Inspection

The contractor his own cost shall demonstrate the goods/materials to the satisfaction of the office. The office or any of its authorized representatives shall at all reasonable times have free access to inspect, examine, or test the materials, workmanship, and performance of all goods to be supplied under the contract at the place of manufacture, and the contractor shall bear all costs of it.

Technical Specification of Casing Pipe and Stainless Steel (SS) Screen Pipe

A. 10" MS Casing Pipe for Water Well.		
i)	Nominal bore Size:	250 mm (10 inch)
ii)	Wall Thickness:	7.1 mm
iii)	Length of Individual Pipes:	6 m, 3m
iv)	Pipe Ends:	Suitable for welding
v)	Type:	ERV (Electric Resistance Welded)
vi)	Materials:	Mild Steel (MS)
vii)	Grade:	Fe 410 or above
viii)	Standard:	IS 4270 or equivalent
B. 8" MS Casing Pipe for Water Well.		
i)	Nominal bore Size:	200 mm (8 inch)
ii)	Wall Thickness:	5.4 mm
iii)	Length of Individual Pipes:	6 m, 3m
iv)	Pipe Ends:	Suitable for welding
v)	Type:	ERV (Electric Resistance Welded)
vi)	Materials:	Mild Steel (MS)
vii)	Grade:	Fe 410 or above
viii)	Standard:	IS 4270 or equivalent
C. 6" MS casing Pipe for Water Well.		
i)	Nominal bore Size:	150 mm (6 inch)

ii)	Wall Thickness:	5.0 mm
iii)	Length of Individual Pipes:	6m or 3m
iv)	Pipe Ends:	Suitable for welding
v)	Type:	ERV (Electric Resistance Welded)
vi)	Materials:	Mild Steel (MS)
vii)	Grade:	Fe 410 or above
viii)	Standard:	IS 4270 or equivalent
D. 8" STAINLESS STEEL (S.S.) Screen Pipe for Water Well		
i)	Nominal bore Size:	200 mm (8 inch)
ii)	Wall Thickness:	6.3 mm
iii)	Pipe Ends:	Suitable for welding
iv)	Materials	Stainless steel (Chromium Nickel Grade, Non-Magnetic)
v)	Weight:	Suitable for 200 m well depth
vi)	Slot Opening:	1 mm to 1.5mm
vii)	Opening Area%:	>25%
viii)	Standard:	IS 8110 or equivalent
E. 6" STAINLESS STEEL (S.S.) Screen Pipe for Water Well		
i)	Nominal bore Size:	150mm (6 inch)
ii)	Wall Thickness:	5.0 mm
iii)	Pipe Ends:	Suitable for welding
iv)	Materials:	Stainless steel (Chromium Nickel Grade, Non-Magnetic)
v)	Weight:	Suitable for 200 m well depth
vi)	Slot Opening:	1 mm to 1.5mm
vii)	Opening Area%:	>25%
viii)	Standard:	IS 8110 or equivalent

Description of Stainless Steel (S.S.) Screen Pipe

- The wrapping wire has a wedge profile with a flat surface on the outside and producing expanding slots on the inside. The number and cross-section of the vertical support rods

and the profile of the wrapping wire shall be such as to give sufficient axial and collapse strength. Electric Resistance Welded (ERW) Cage type Vee Wire Wound Screens shall be of continuous trapezoidal wire spirally wound around a fabricated cage. The screen must consist of 'V'-shaped (wedge) profile wire of various dimensions, resistance welded to a cylindrical body made of several number of longitudinal special high tensile support rods to provide a smooth, unrestricted bore, which are in turn welded into cylindrical ring couplings at either end.

- The screen must have evenly distributed continuous slot openings so that it has maximum open area for minimum turbulence and loss of energy.
- Slot should be smooth, clean edges rounded off so that it gives better hydraulic performance and may reduce the rate of corrosion and encrustation.
- The inwardly widening slots should be non-clogging so that sediment has only point contact, which will give longer effective well life.
- The wrapping wire having a wedge profile with a flat surface on the outside and producing expanding slots on the inside. This shape must facilitate jetting and backwashing operations and also avoid the screens being clogged by fine particles.
- The number and cross-section of the vertical support rods and the size of the wrapping wire shall be such as to give tensile and collapse strength up to 200 m depth.
- The screen should have inwardly widened slots, and the available Slot Width to be 1.00 mm to 1.50 mm.
- The overall length of the screen shall be 1 m, 3 m, and 6 m without any circumferential joint in the screen section. Screen length is measured between the extreme ends of the End Rings at both ends.
- Each intersection of wrapping profile wire and support rods shall be fusion welded by the Electrical Resistance welding process to impart sufficient joint strength at each joint to sustain development pressures.
- The screens shall be made from wires of Stainless Steel (S.S.) (Chromium Nickel Grade, Non-Magnetic).

Testing of MS Pipe and SS Screen

The MS Pipe and SS Screen pipe shall have an embedded Stamp showing lot/batch number, Logo of Manufacturing Company, and Related Standard with grade. The contractor must submit the Lot/Batch Test certificate of MS Pipe and SS Screen pipe as per the relevant standard mentioned. Report of Mechanical and Dimensional Properties Test report of MS Pipe and SS Screen as per the relevant standard mentioned, from a recognized registered Material Testing Laboratory could be additional documents.



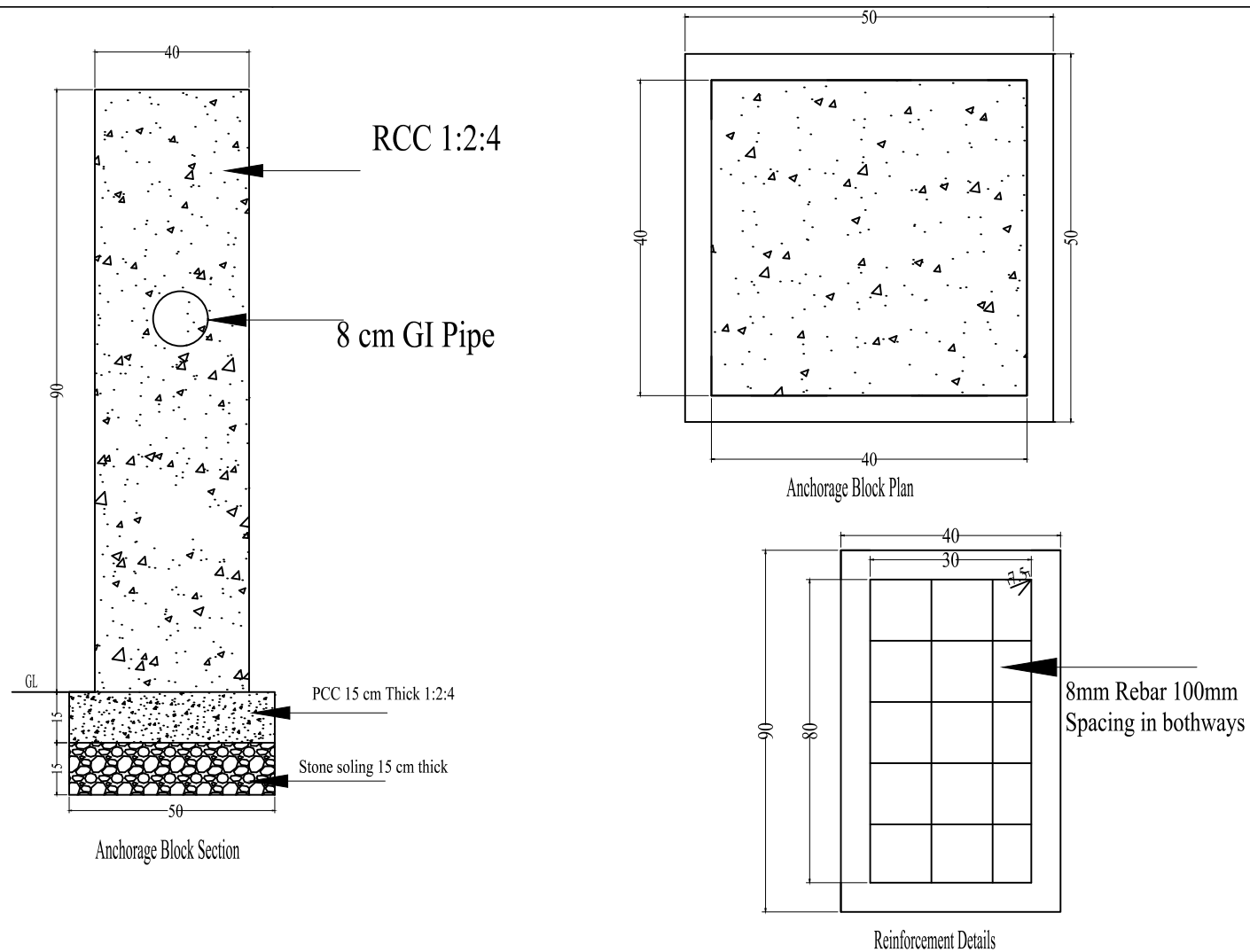
13. Measurement and Payment

If provided in the Contract, the measurement of the work under this Clause shall be measured and paid in units and contract rates as specified in the Bill of Quantities for completed works as directed and accepted by the Engineer. The cost and payment shall be deemed to have full and final compensation for all labour, equipment, tools and incidentals necessary to complete the work.

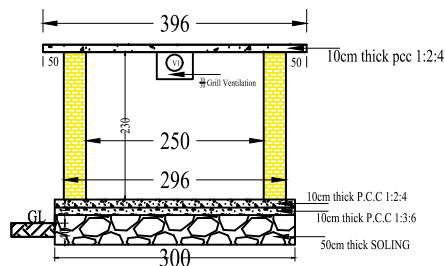
The Contractor shall produce the insurance policy from any insuring company operative and recognized within Nepal. The Contractor shall, immediately after securing the insurance policy(ies) shall produce to the Project Director the original bills paid against the premiums. The Contractor shall be paid for insurance under Item as specified in BoQ in the following manner:

If the premium amount as per the original bills is more than the amount stated in the BoQ, the amount of the BoQ less any taxes, if applicable, shall be paid. Any amount in excess of BoQ amount shall be borne by the Contractor.

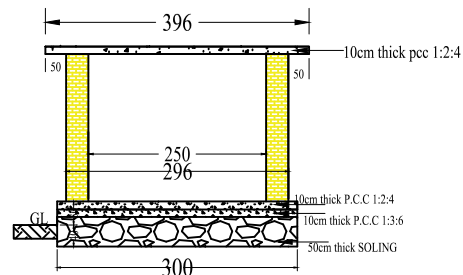




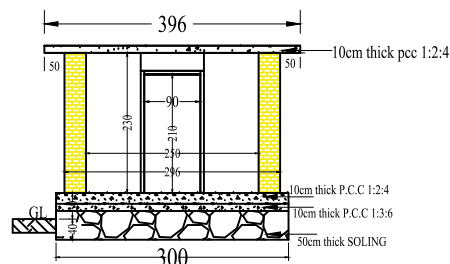
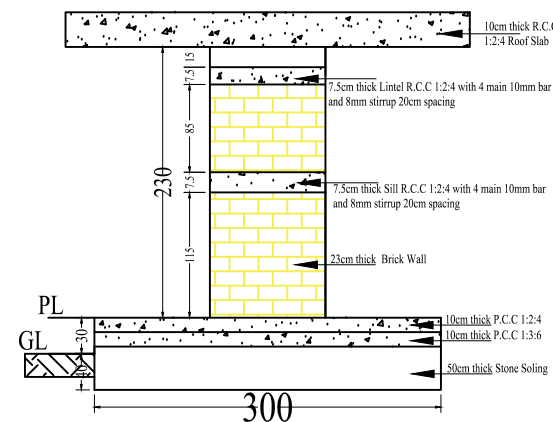
Government of Nepal Ministry Of Energy, Water Resources and Irrigation Department of Water Resources and Irrigation Sunkoshi Marin Diversion Multipurpose Project Sindhuli	Drawn By:	Name of Project:Khaltetar Lift ISP	Drawing Title:Anchor Block
	Checked By:	Location:Sunkoshi Ga.Pa.-06,Sindhuli	Note:All Dimensions are in Centimeter Unless Specified
	Approved By:		



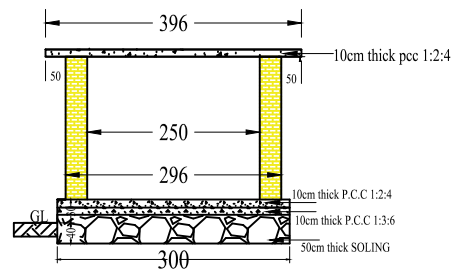
Electrical Control Room Back Elevation



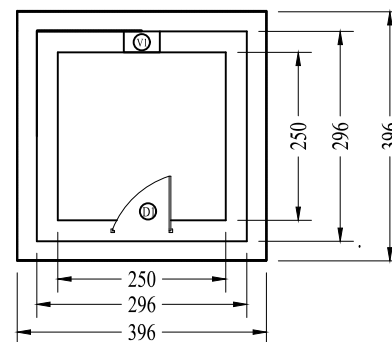
Electrical Control Room Left Elevation



Electrical Control Room Front Elevation



Electrical Control Room Right Elevation



Electrical Control Room:Plan

Sill and Lintel Band Details					
S.N	Items	Bar Size	Bar Num	Stirrup Size	Stirrup Spacing
1.	Sill Band at 1.15m Height	10 mm	Top 2 Bottom 2	8 mm	200 mm
2.	Lintel Band above Door	10 mm	Top 2 Bottom 2	8 mm	200 mm
Opening Schedule					
S.N	Symbol	Shutter Size			
1.	Door D1	210*90			
2.	Ventilation V1	30*30			

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Ministry Of Energy, Water Resources and Irrigation
Department of Water Resources and Irrigation
Sunkoshi Marin Diversion Multipurpose Project
Sindhuli

Drawn By:

Checked By:

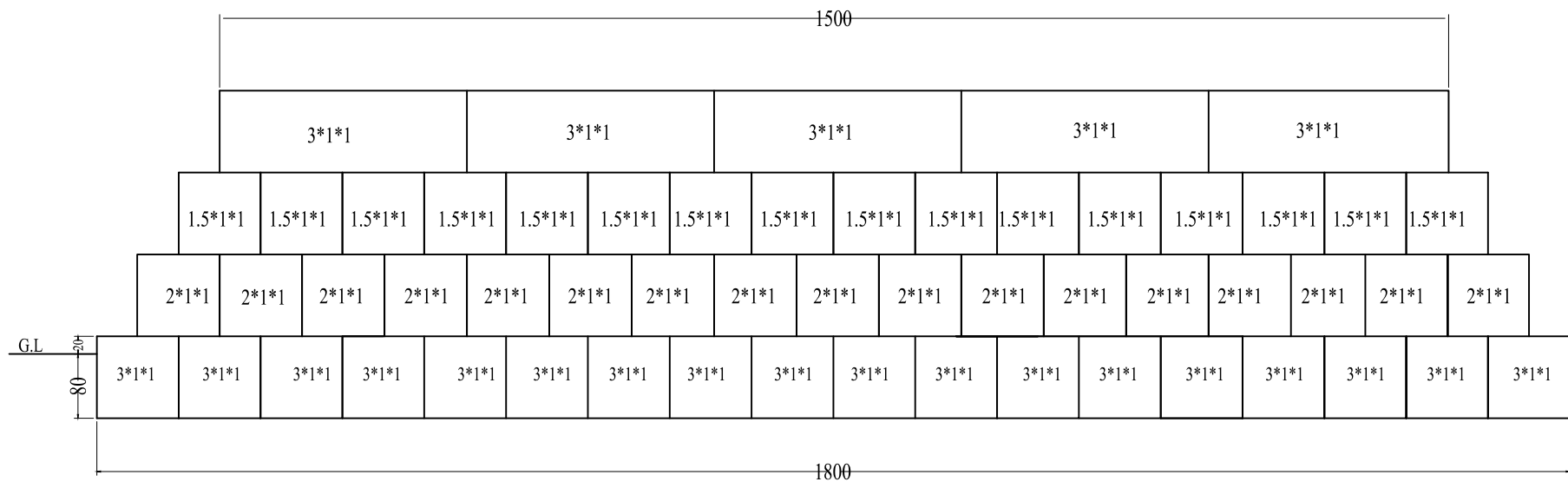
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Name of Project:Khaltetar Lift ISP

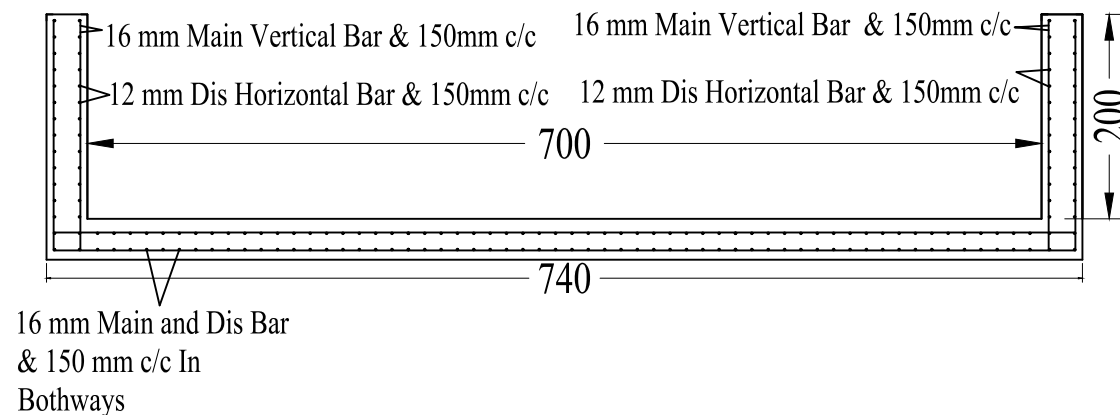
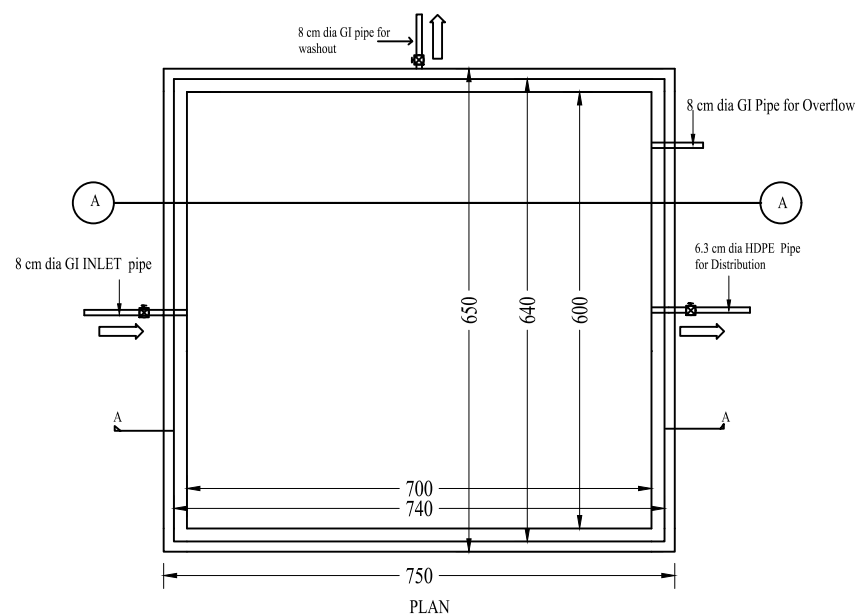
Location:Sunkoshi Ga.Pa.-06,Sindhuli

Drawing Title:Electrical Control Room

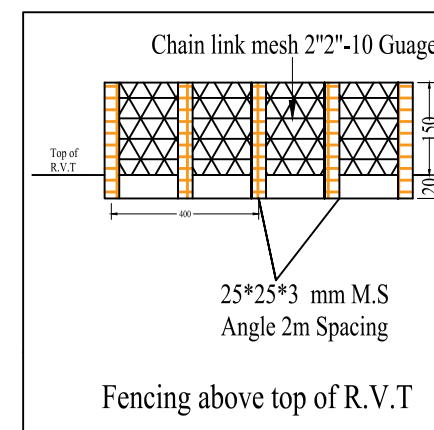
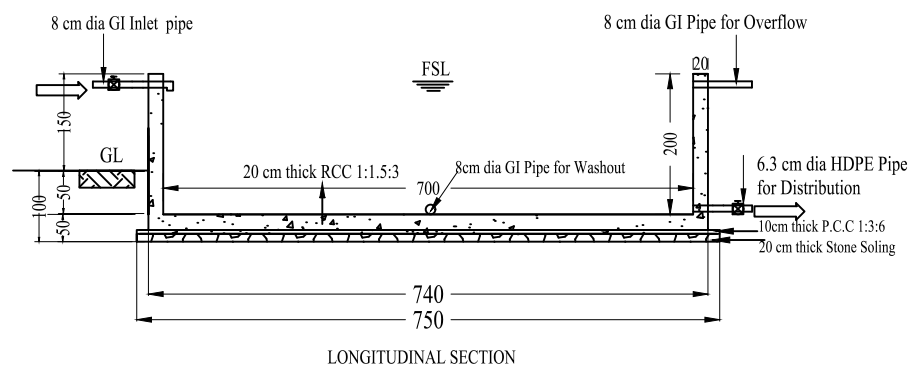
Note:All Dimensions are in Centimeter Unless Specified



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	Checked By:		
	Approved By:	Location:Sunkoshi Ga.Pa.-06,Sindhuli	Note:All Dimensions are in Centimeter Unless Specified



Reinforcement Detail of Reservoir Section at A-A



Fencing above top of R.V.T

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Sunkoshi Marin Diversion Multipurpose Project
Sindhuli

Drawn By:

Checked By:

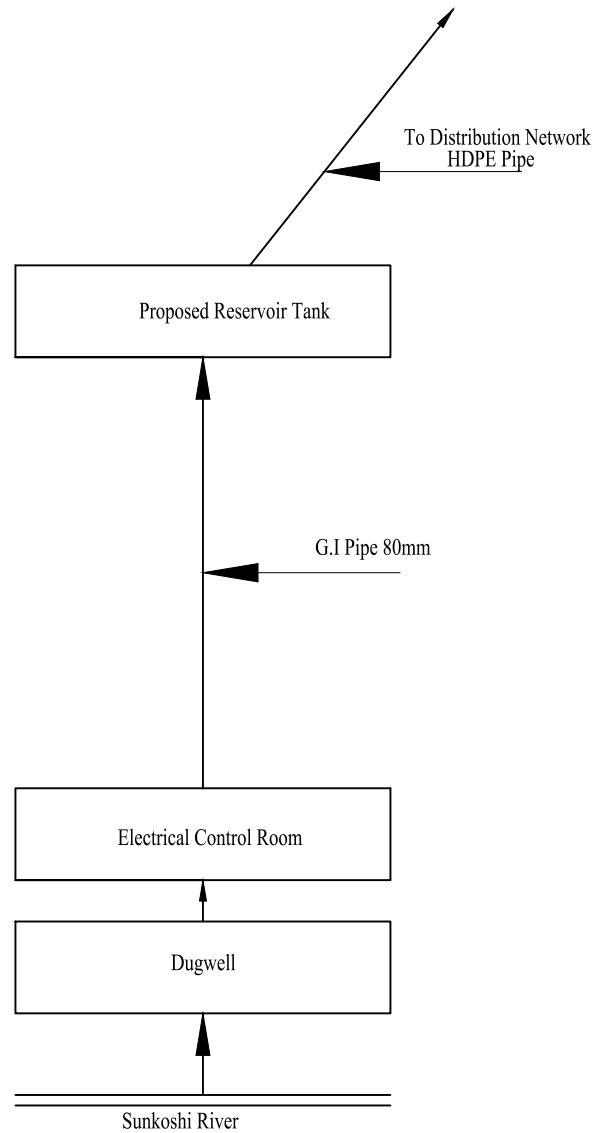
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Name of Project: Khaltetar Lift ISP

Location: Sunkoshi Ga. Pa.-06, Sindhuli

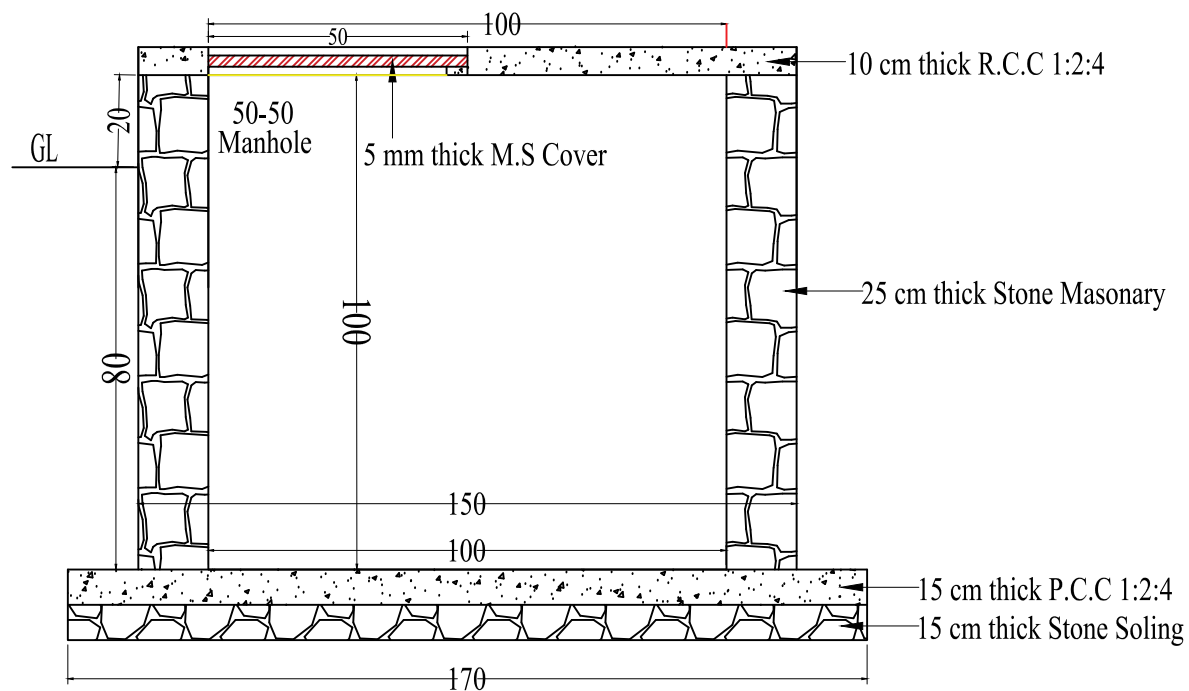
Drawing Title: Reservoir Tank

Note: All Dimensions are in Centimeter Unless Specified

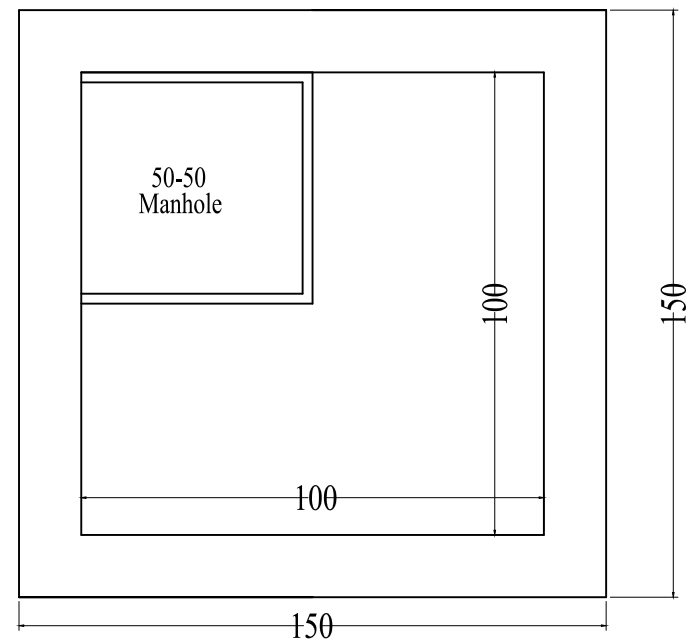


Schematic Diagram

Government of Nepal Ministry Of Energy,Water Resources and Irrigation Department of Water Resources and Irrigation Sunkoshi Marin Diversion Multipurpose Project Sindhuli	Drawn By:	Name of Project:Khaltetar Lift ISP	Drawing Title:Schematic Diagram
	Checked By:		
	Approved By:	Location:Sunkoshi Ga.Pa.-06,Sindhuli	Note:All Dimensions are in Centimeter Unless Specified

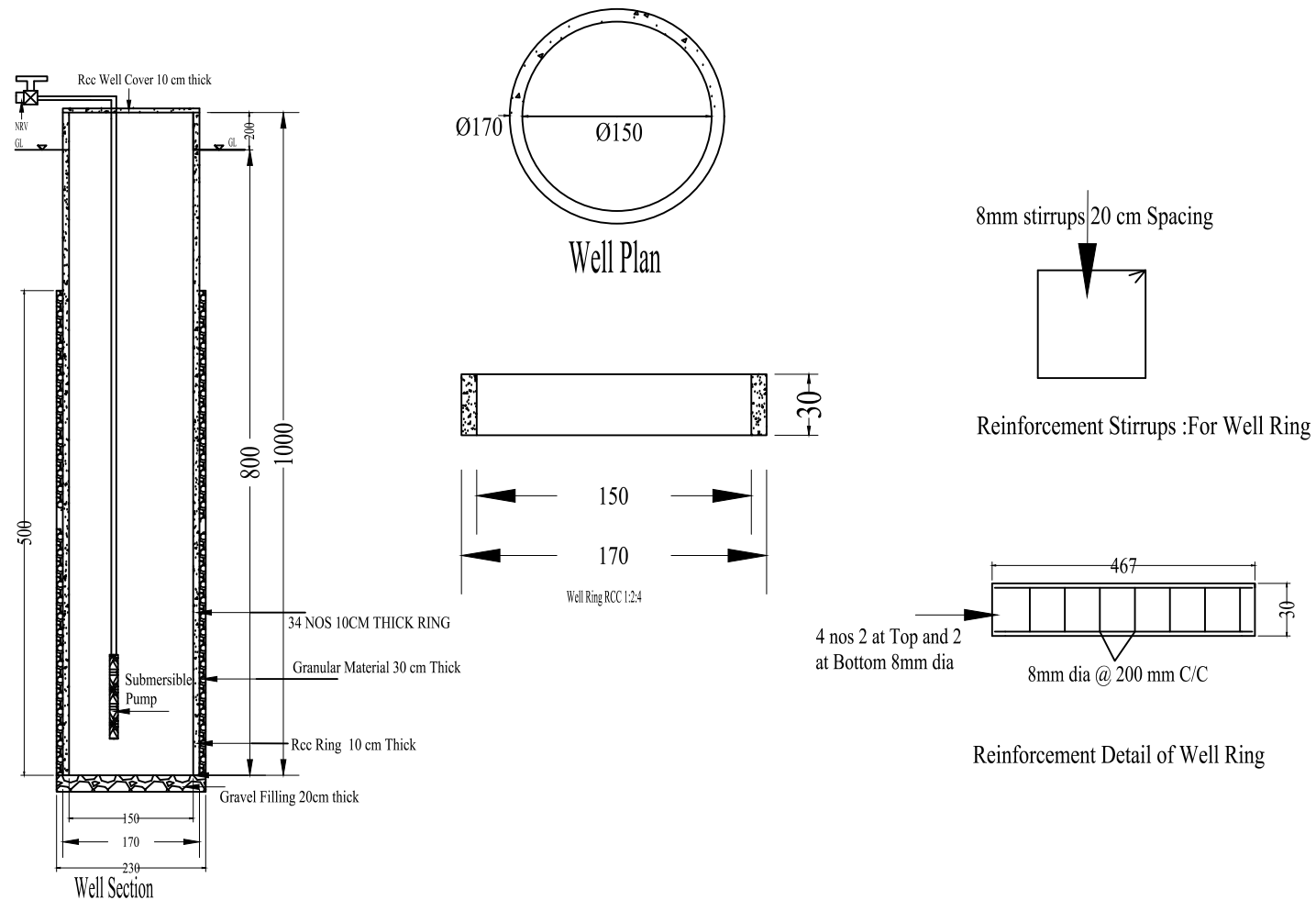


Elevation: Valve Chamber



Plan: Valve Chamber

Government of Nepal Ministry Of Energy, Water Resources and Irrigation Department of Water Resources and Irrigation Sunkoshi Marin Diversion Multipurpose Project Sindhuli	Drawn By:	Name of Project: Khaltetar Lift ISP	Drawing Title: Valve Chamber
	Checked By:		
	Approved By:	Location: Sunkoshi Ga. Pa.-06, Sindhuli	Note: All Dimensions are in Centimeter Unless Specified



Government of Nepal Ministry Of Energy, Water Resources and Irrigation Department of Water Resources and Irrigation Sunkoshi Marin Diversion Multipurpose Project Sindhuli	Drawn By:	Name of Project:Khaltetar Lift ISP	Drawing Title:Well
	Checked By:	Location:Sunkoshi Ga.Pa.-06,Sindhuli	Note:All Dimensions are in Centimeter Unless Specified
	Approved By:		

SECTION-VI

Bill of Quantities

Notes for Unit Rate Contracts :

Objectives

The objectives of the Bill of Quantities are

- (a) to provide sufficient information on the quantities of Works to be performed to enable Bids to be prepared efficiently and accurately; and
- (b) when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

Content

The Bill of Quantities should be divided generally into the following sections:

- (a) Preamble;
- (b) Work Items (grouped into parts);
- (c) Day works Schedule;
- d) Provisional Sums; and
- (d) Summary.

Preamble

The Preamble should indicate the inclusiveness of the unit prices, and should state the methods of measurement which have been adopted in the preparation of the Bill of Quantities and which are to be used for the measurement of any part of the works.

Work Items

The items in the Bill of Quantities should be grouped into sections to distinguish between those parts of the Works which by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, or phasing of the Works, or considerations of cost. General items common to all parts of the works may be grouped as a separate section in the Bill of Quantities.

Day work Schedule

A Day work Schedule should be included only if the probability of unforeseen work, outside the items included in the Bill of Quantities, is high. To facilitate checking by the Employer of the realism of rates quoted by the Bidders, the Day work Schedule should normally comprise the following:

- (a) A list of the various classes of labor, materials, and Constructional Plant for which basic day work rates or prices are to be inserted by the Bidder, together with a statement of the conditions under which the Contractor will be paid for work executed on a day work basis.
- (b) Nominal quantities for each item of Day work, to be priced by each Bidder at Day work rates as bid. The rate to be entered by the Bidder against each basic Day work item should include the Contractor's profit, overheads, supervision, and other charges.

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 Contract Data should state the manner in which they will be used, and under whose authority (usually the Project Manager's).

Summary

The Summary should contain a tabulation of the separate parts of the Bill of Quantities carried forward, with provisional sums for Day work, for physical (quantity) contingencies, and for price contingencies (upward price adjustment) where applicable.

These Notes for Preparing Specifications are intended only as information for the Employer or the person drafting the Bidding documents. They should not be included in the final documents.

Bill of Quantities

1 Provisional Sum

Procurement Item Details					
SL. No	Item Description	Unit	Quantity	Unit Rate(NPR)	Amount(NPR)
1	Insurance of the works, insurance against accident to workmanship and insurance against third party all complete.	Job	1.0	33997.26	33,997.26
2	Commission for Performance bond.	Job	1.0	7554.94	7,554.94
3	Preparation of as built drawing as complete.	Job	1.0	3777.47	3,777.47
4	Provisional Sum.	PS	1.0	500000.0	500,000.00

2 Construction work

Procurement Item Details						
SL. No	Item Description	Unit	Quantity	Bidder's Rate (NPR)	Bidder's Rate (in words)	Total Amount (NPR)
1	Cutting, uprooting and disposal of grasses with light compaction, levelling and clearing the site all complete as instructed by the Engineer.	m2	149.64			
2	E/W excavation by Manual Means in boulder mixed soils Incl. disposal up to 10m lead & 1.5 m lift as per specification, drawing and as instructed by the Engineer all complete.	m3	199.36			
3	Earthwork in Excavation of foundation by mechanical means for depth upto 3m including construction of shoring, bracing removal of stumps and other deleterious material during construction all complete as instructed by the Engineer.	m3	113.18			
4	Earthwork in Excavation by mechanical means for depth greater than 3m including construction of shoring, bracing removal of stumps and other deleterious material during construction all complete as instructed by the Engineer.	m3	29.05			
5	Backfilling of structures/Pipeline pits Using Manual Means (Hand Rammer) in 20cm layers with all types of excavated soil including compaction with water sprinkling all complete as per Drawing and Specifications.	m3	207.22			
6	Providing Suitable granular material i.e aggregate of size 5-40mm and backfilling around the Well all complete as instructed by the Engineer.	m3	8.0			
7	Dewatering Works during digging of well all complete.	Job	1.0			

Procurement Item Details						
SL. No	Item Description	Unit	Quantity	Bidder's Rate (NPR)	Bidder's Rate (in words)	Total Amount (NPR)
8	Lowering of RCC Rings all complete as instructed by the Engineer.	m	10.0			
9	Recuperation Test for well all complete.	Job	1.0			
10	Geotextile Works (200 GSM) all complete as instructed by the engineer.	m2	72.15			
11	Providing and laying of Stone (Stone Soling Works) in the foundation and levelling all complete as per Drawing and Specifications all complete.	m3	21.42			
12	Providing and laying M10 concrete (PCC) in foundation,vertical faces, walls,and abutments all complete as per Drawing and Specifications all complete.	m3	6.5			
13	Providing and laying M15 concrete (PCC) in foundation,vertical faces, walls,and abutments as per Drawing and Specifications all complete.	m3	30.2			
14	Providing and laying M20 concrete (PCC for RCC) in foundation,vertical faces,walls,and abutments as per Drawing and Specifications all complete.	m3	23.25			
15	Supplying ,Cutting , bending , placing in position and binding of reinforcement steel bars all complete as per the design/drawing and instructed by the engineer. for RCC works all complete.	kg	5329.97			
16	Providing,preparing and installing formwork including necessary supports and removing after completion all complete.	m2	404.68			
17	R.R.Masonry Works in 1:4 cement sand mortar including supply of materials all complete.	m3	1.25			
18	Brick Masonry Works in 1:4 cement sand mortar including supply of materials all complete.	m3	5.0			
19	12.5mm thick 1:4 cement sand plaster works all complete.	m2	170.28			
20	Providing and Making 3 mm thick cement punning works all complete as per Drawing and Specifications.	m2	94.0			
21	Making Wooden Frame of Size 38mm*100mm & fixing 38mm redymade door shutter (0.9m*2.1m) with One side teak water proof along with the Hold-fast, handle, L-drop and other accessories all complete.	No.	1.0			
22	Providing Two Coats of Exterior Weather Coat Paint on exterior surface and two coat of Emulsion paint on interior Surface as instructed by the Engineer.	m2	65.68			

Procurement Item Details						
SL. No	Item Description	Unit	Quantity	Bidder's Rate (NPR)	Bidder's Rate (in words)	Total Amount (NPR)
23	Supplying of Machine made GI wire gabion Boxes of Mesh size 100mm*120mm with heavy coated GI wires (Mesh wire: 3mm, selvedge wire 3.9mm and Lacing wire 2.4mm) all complete as per Specification and Drawings.	m2	683.0			
24	Gabion Construction works with diaphragm and providing, filling rubble boulder/stone in gabion box including placing in position, tying gabion box by lacing wire closing from the top all complete as per Specification and drawing.	m3	127.0			
25	Supplying of 80mm GI Pipe including transportation all complete.	m	1186.0			
26	Laying and Fitting of 80mm GI Pipe all complete.	m	1186.0			
27	Supply of 63 mm HDPE (PE 100) Pipe of PN 6 all complete.	m	623.0			
28	Laying and Fitting of 63 mm HDPE (PE 100) Pipe of PN 6 with butt welded joints including all accessories all complete.	m	623.0			
29	Supply and Delivery of 50 mm HDPE (PE 100) Pipe of PN 10 all complete.	m	1700.0			
30	Laying and Fitting of 50 mm HDPE (PE 100) Pipe of PN 10 with butt welded joints including all accessories all complete.	m	1700.0			
31	Supply of 40 mm HDPE(PE100) Pipe of PN 10 all complete.	m	500.0			
32	Laying and fitting of 40 mm HDPE (PE100) Pipe of PN 10 with butt welded joints including all accessories all complete.	m	500.0			
33	Supply and Connection of 50 mm GM Gate Valve all complete.	No.	28.0			
34	Supply and connection of 40 mm GM Gate Valve all complete.	No.	20.0			
35	Supply of 50 mm GI Union for gate valve connection all complete.	No.	56.0			
36	Supply of 40 mm GI Union for gate valve connection all complete.	No.	40.0			
37	Supply of 50 mm GI Nipple 3" long Medium Class for gate valve connection all complete.	No.	28.0			
38	Supply and Delivery of 40 mm GI Nipple 3" long Medium Class for gate valve connection all complete.	No.	20.0			
39	Supply and Delivery of 40 mm GI Socket for tap connection all complete.	No.	20.0			

Procurement Item Details						
SL. No	Item Description	Unit	Quantity	Bidder's Rate (NPR)	Bidder's Rate (in words)	Total Amount (NPR)
40	Supply and Delivery of Ordinary brass tap (1/2") all complete.	No.	20.0			
41	Supply, Delivery and Installation of Q= 18m3/hr at 187m Head Power 17.5 HP Submersible Pump(UQD 152/35 +UMAH 150) or Equivalent with Motor all complete.	set	1.0			
42	Supply,Delivery and Installation of Control Panel Suitable for 17.5 HP Submersible Pump all complete as per instructed by the Engineer.	set	1.0			
43	Supply,Delivery and Installation of 3 core flat submersible flexible copper cable of 10 mm2 along with the connection from control panel to the pump all complete.	m	100.0			
44	Supply & Delivery of 50mm dia MS Pole all complete.	Kg	50.0			
45	Supply,Fitting,Fixing of chain link mesh of size 2"*2" 10 gauge all complete.	m2	39.0			
46	Supply and Fitting of M.S Grill all complete for Ventilation all complete.	kg	30.0			
47	Supply and Fitting of M.S Angle of size 25*25*3 all complete for chain link mesh all complete.	kg	24.31			
48	Supply, Fitting, Fixing, Locking etc all complete of M.S Plate for Man Hole Cover of 5mm thickness all complete .	kg	9.82			
49	Supplying and fixing all required HDPE pipe fittings (GI Tee with GI Pipe more than Reservoir tank height, Wye and Tee pipe Fitting, GI Union, GI Socket, GI Nipple, Flange Set, Gate Valve, Saddle Clamp, Ferrule, Reducer,Seal Tape) and other accessories for Distribution Pipe and outlets as per requirements and instructed by the Engineer all complete.	job	1.0			
50	Lowering of Submersible Pump along with Connection of Pump to delivery pipe including NRV Valve, Union, Nipple, Elbow, Extender and all other required accessories all complete and instructed by the Engineer.	job	1.0			
51	Supply, joining of fittings and other accessories that are required to connect Distribution pipe to RVT including Washout Pipe,,Overflow Pipe, Gate valve, Flange set etc as per requirements all complete and instructed by the Engineer.	job	1.0			

Total of Procurement Items	
Total Item Price	
VAT	
Grand Total	