Bihar Urban Infrastructure Development Corporation Limited

A Government of Bihar Undertaking

Bihar Urban Development Investment Program -Tranche 2

(ADB Loan: Applied for / Project No. IND-41603-023)

BIDDING DOCUMENT

Improvement of Water Supply System in Gaya Municipal Corporation – Package GA/WS/01

October 2016

Issued on: .....
Invitation for Bids No.: BUIDCo/BUDIP-2/ICB/01
ICB No.: GA/WS/01
Employer: Bihar Urban Infrastructure Development Corporation Ltd, Government of Bihar
Country: India

Foreword

This Standard Bidding Document for the Procurement of Works (SBD Works) has been prepared by the Asian Development Bank (ADB) and is based on the Master Procurement Document entitled “Bidding Document for the Procurement of Works”, prepared by multilateral development banks and other public international financial institutions which reflects the majority view of these institutions. This document has the structure and the provisions of the Master Procurement Document, except where ADB-specific considerations have required a change.

This SBD is supported by a User’s Guide. The User’s Guide contains detailed explanations and recommendations to Employers on how to prepare a specific bidding document for the procurement of works and how to evaluate bids. The User’s Guide is not a part of the bidding document.

To obtain further information on procurement under ADB-financed projects, contact

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Preface

This Bidding Document for the Procurement of Works has been prepared by **Bihar Urban Infrastructure Development Corporation Ltd. (BUIDCo), A Government of Bihar Undertaking, INDIA** and is based on the Standard Bidding Document for the Procurement of Works (*SBD Works*) issued by the Asian Development Bank dated December 2015

ADB's *SBD Works* has the structure and the provisions of the Master Procurement Document entitled "Bidding Documents for the Procurement of Works", prepared by multilateral development banks and other public international financial institutions, except where ADB-specific considerations have required a change.

Table of Contents - Summary Description

This Section contains forms, which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

Section 1 - 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, evaluation of bids, and on the award of contract.

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Section 1 - Instructions to Bidders

A. General

1. Scope of Bid

1.1 In connection with the Invitation for Bids (IFB) 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 6 (Employer's Requirements). The name, identification, and number of contracts of the international competitive bidding (ICB) are provided in the BDS.

1.2 Throughout this Bidding Document,

(a) the term "in writing" means communicated in written form and delivered against receipt;

(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

2.1 The Borrower or Recipient (hereinafter called "Borrower") indicated in the BDS has applied for or received financing (hereinafter called "funds") from the Asian Development Bank (hereinafter called "ADB") toward the cost of the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.

2.2 Payments by the ADB will be made only at the request of the Borrower and upon approval by ADB in accordance with the terms and conditions of the Financing Agreement between the Borrower and ADB (hereinafter called "Financing Agreement"), and will be subject in all respects to the terms and conditions of that Financing Agreement. No party other than the Borrower shall derive any rights from the Financing Agreement or have any claim to the funds.

3. Fraud and Corruption

3.1 ADB's Anticorruption Policy requires Borrowers (including beneficiaries of ADB-financed activity), as well as Bidders, Suppliers, and Contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(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 ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents or records in connection with an Office of Anticorruption and Integrity (OAI) 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 ADB's contractual rights of audit or access to information; and

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

(b) 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) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation;

(d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate[1] in ADB-financed, administered, or supported activities or to benefit from an ADB-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,

[1] Whether as a Contractor, Nominated Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document). A Nominated Subcontractor is one that either has been: (i) included by the Bidder in its prequalification application or bid because it brings specific and critical experience and know-how that are accounted for in the evaluation of the bidder's prequalification application or the bid; or (ii) appointed by the Employer.

coercive, or obstructive practices or other integrity violations; and

(e) will have the right to require that a provision be included in bidding documents and in contracts financed by ADB, requiring Bidders, suppliers and contractors to permit ADB or its representative to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by ADB.

3.2 Furthermore, Bidders shall be aware of the provision stated in Subclause 1.15 and 15.6 of the Conditions of Contract.

4. Eligible Bidders

4.1 A Bidder may be a natural person, private entity, or government-owned enterprise subject to ITB 4.5—or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture. In the case of a Joint Venture,

(a) all partners shall be jointly and severally liable; and

(b) the Joint Venture 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 Joint Venture during the bidding process and, in the event the Joint Venture is awarded the Contract, during contract execution.

4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related services.

4.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in the bidding process if any of, including but not limited to, the following apply:

(a) they have controlling shareholders in common; or

(b) they receive or have received any direct or indirect subsidy from any of them; or

(c) they have the same legal representative for purposes of this bid; or

(d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to material information about or improperly influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or

(e) a Bidder participates in more than one bid in this bidding process, either individually or as a partner in a joint venture, except for alternative offers permitted under ITB 13 of the Bidding Document. 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 4.3(a)-(d) above, this does not limit the participation of a Bidder as a Subcontractor in another Bid or of a firm as a Subcontractor in more than one Bid; or

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

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

4.4 A firm shall not be eligible to participate in any procurement activities under an ADB-financed, administered, or supported project while under temporary suspension or debarment by ADB pursuant to its Anticorruption Policy (see ITB 3), whether such debarment was directly imposed by ADB, or enforced by ADB pursuant to the Agreement for Mutual Enforcement of Debarment Decisions. A bid from a temporary suspended or debarred firm will be rejected.

4.5 Government-owned enterprises in the Employer's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the Employer.

4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.

4.7 Firms shall be excluded if by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country or any payments to persons or entities in that country.

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

5. Eligible Materials, Equipment and Services

5.1 The materials, equipment, and services to be supplied under the Contract shall have their origin in eligible source countries as defined in ITB 4.2 above 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 Document

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 1 - Instructions to Bidders (ITB)
Section 2 - Bid Data Sheet (BDS)
Section 3 - Evaluation and Qualification Criteria (EQC)
Section 4 - Bidding Forms (BDF)
Section 5 - Eligible Countries (ELC)

PART II Requirements
Section 6 - Employer's Requirements (ERQ)

PART III Conditions of Contract and Contract Forms
Section 7 - General Conditions of Contract (GCC)
Section 8 - Particular Conditions of Contract (PCC)
Section 9 - 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 IFB.

6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.

7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting

7.1 A prospective Bidder requiring any clarification on the Bidding Document shall contact the Employer in writing at the Employer's address indicated in the BDS or raise his inquiries 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 no later than 21 days prior to the deadline for submission of bids. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.

7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter 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.

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 to submit any questions in writing, to reach the Employer not later than 1 week before the meeting.

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.

7.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

8. Amendment of Bidding Document

8.1 At any time prior to the deadline for submission of Bids, the Employer may amend the Bidding Document by issuing addenda.

8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3.

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

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

11.1 The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Bid containing the documents listed in ITB 11.2 and the other the Price Bid containing the documents listed in ITB 11.3, both envelopes enclosed together in an outer single envelope.

11.2 The Technical Bid shall comprise the following:

(a) Letter of Technical Bid;

(b) Bid Security or Bid-Securing Declaration, in accordance with ITB 19;

(c) alternative Bids, if permissible, in accordance with ITB 13;

(d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;

(e) documentary evidence in accordance with ITB 17, establishing the Bidder's qualifications to perform the contract;

(f) Technical Proposal in accordance with ITB 16;

(g) Any other document required in the BDS.

11.3 The Price Bid shall comprise the following:

(a) Letter of Price Bid;

(b) completed Price Schedules, in accordance with ITB 12 and ITB 14;

(c) alternative price Bids, at Bidder's option and if permissible, in accordance with ITB 13;

(d) Any other document required in the BDS.

11.4 In addition to the requirements under ITB 11.2, 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.

12. Letters of Bid and Schedules

12.1 The Letters of Technical Bid and Price Bid, and the Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section 4 (Bidding Forms). 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 and as required in the BDS.

13. Alternative Bids

13.1 Unless otherwise indicated in the BDS, alternative Bids shall not be considered.

13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the BDS, as will the method of evaluating different times for completion.

13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Document must first price the Employer's design as described in the Bidding Document and shall further provide all information necessary for a

complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer.

13.4 When specified in the BDS, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be identified in the BDS and described in Section 6 (Employer's Requirements). The method for their evaluation will be stipulated in Section 3 (Evaluation and Qualification Criteria).

14. Bid Prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Letter of Price Bid and in the Bill of Quantities shall conform to the requirements specified below.

14.2 The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.

14.3 The price to be quoted in the Letter of Price Bid, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered. . Absence of the total bid price in the Letter of Price Bid may result in the rejection of the Bid.

14.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Price Bid, in accordance with ITB 12.1.

14.5 Unless otherwise provided in the BDS and the Contract, the rates and 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. In such a case, the Bidder shall furnish the indexes and weightings for the price adjustment formulas in the Tables of Adjustment Data included in Section 4 (Bidding Forms) and the Employer may require the Bidder to justify its proposed indexes and weightings.

14.6 If so indicated in ITB 1.1, bids are being 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 14.4, provided the Bids for all contracts are submitted and opened at the same time.

14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 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.

15. Currencies of Bid

15.1 The unit rates and the prices shall be quoted by the Bidder entirely in

and Payment

the currency specified in the BDS.

15.2 Bidders shall indicate the portion of the bid price that corresponds to expenditures incurred in the currency of the Employer's country in the Schedule of Payment Currencies included in Section 4 (Bidding Forms).

15.3 Bidders expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country and wishing to be paid accordingly may indicate up to three foreign currencies in the Schedule of Payment Currencies included in Section 4 (Bidding Forms).

15.4 The rates of exchange to be used by the Bidder for currency conversion during bid preparation shall be the selling rates for similar transactions prevailing on the date 28 days prior to the deadline for submission of bids published by the source specified in the BDS. If exchange rates are not so published for certain currencies, the Bidder shall state the rates used and the source. Bidders should note that for the purpose of payments, the exchange rates confirmed by the source specified in the BDS as the selling rates prevailing 28 days prior to the deadline for submission of Bids shall apply for the duration of the Contract so that no currency exchange risk is borne by the Bidder.

15.5 Foreign currency requirements indicated by the Bidders in the Schedule of Payment Currencies shall include but not limited to the specific requirements for

(a) expatriate staff and labor employed directly on the Works;

(b) social, insurance, medical and other charges relating to such expatriate staff and labor, and foreign travel expenses;

(c) imported materials, both temporary and permanent, including fuels, oil and lubricants required for the Works;

(d) depreciation and usage of imported Plant and Contractor's Equipment, including spare parts, required for the Works;

(e) foreign insurance and freight charges for imported materials, Plant and Contractor's Equipment, including spare parts; and

(f) overhead expenses, fees, profit, and financial charges arising outside the Employer's country in connection with the Works.

15.6 Bidders may be required by the Employer to clarify their foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Payment Currencies are reasonable and responsive to ITB 15.3 above, in which case a detailed breakdown of its foreign currency requirements shall be provided by the Bidder.

15.7 Bidders should note that during the progress of the Works, the foreign currency requirements of the outstanding balance of the Contract Price may be adjusted by agreement between the Employer and the Contractor in order to reflect any changes in foreign currency requirements for the Contract, in accordance with Subclause 14.15 of the Conditions of Contract. Any such adjustment shall be effected by

comparing the percentages quoted in the bid with the amounts already used in the Works and the Contractor's future needs for imported items.

16. Documents Comprising the Technical Proposal

16.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule, and any other information as stipulated in Section 4 (Bidding Forms), in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the work requirements and the completion time.

17. Documents Establishing the Qualifications of the Bidder

17.1 To establish its qualifications to perform the Contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding information sheets included in Section 4 (Bidding Forms).

17.2 Domestic Bidders, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 35.

18. Period of Validity of Bids

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

18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 19, it shall also be extended 28 days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its Bid.

19. Bid Security/Bid-Securing Declaration

19.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its Bid, in original form, either a Bid-Securing Declaration or a bid security as specified in the BDS. In the case of a bid security, the amount and currency shall be as specified in the BDS.

19.2 If a Bid-Securing Declaration is required pursuant to ITB 19.1, it shall use the form included in Section 4 (Bidding Forms). The Employer will declare a Bidder ineligible to be awarded a Contract for a specified period of time, as indicated in the BDS, if the Bid-Securing Declaration is executed.

19.3 If a bid security is specified pursuant to ITB 19.1, the bid security shall be, at the Bidder's option, in any of the following forms:

(a) an unconditional bank guarantee,

(b) an irrevocable letter of credit, or

(c) a cashier's or certified check,

all from a reputable source from an eligible country as described in Section 5 (Eligible Countries). In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section 4 (Bidding Forms) or another form acceptable to the

Employer. The form must include the complete name of the Bidder. The bid security shall be valid for 28 days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

19.4 Unless otherwise specified in the BDS, any Bid not accompanied by a substantially compliant bid security or Bid-Securing Declaration, if one is required in accordance with ITB 19.1, shall be rejected by the Employer as nonresponsive.

19.5 If a bid security is specified pursuant to ITB 19.1, the bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security pursuant to ITB 42.

19.6 If a bid security is specified pursuant to ITB 19.1, the bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.

19.7 The bid security may be forfeited or the Bid Securing Declaration executed,

(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid, except as provided in ITB 18.2; or

(b) if the successful Bidder fails to

(i) sign the Contract in accordance with ITB 41;

(ii) furnish a performance security in accordance with ITB 42;

(iii) accept the arithmetical correction of its Bid in accordance with ITB 33; or

(iv) furnish a domestic preference security, if so required.

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

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original set of the Technical Bid and one original set of the Price Bid comprising the Bid as described in ITB 11 and clearly mark it "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID." Alternative Bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE." In addition, the Bidder shall submit copies of the Technical and Price Bids, 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.

20.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the bid.

The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid, except for unamended printed literature, shall be signed or initialed by the person signing the Bid. If a Bidder submits a deficient authorization, the Bid shall not be rejected in the first instance. The Employer shall request the Bidder to submit an acceptable authorization within the number of days as specified in the BDS. Failure to provide an acceptable authorization within the prescribed period of receiving such a request shall cause the rejection of the Bid.

20.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

21.1 Bidders may always submit their Bids by mail or by hand. When so specified in the BDS, Bidders shall have the option of submitting their Bids electronically. Procedures for submission, sealing, and marking are as follows:

(a) Bidders submitting Bids by mail or by hand shall enclose the original of the Technical Bid, the original of the Price Bid, and each copy of the Technical Bid and each copy of the Price Bid, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL - TECHNICAL BID," "ORIGINAL - PRICE BID," and "COPY NO… - TECHNICAL BID" and "COPY NO…. - PRICE BID." These envelopes, the first containing the originals and the others containing copies, shall then be enclosed in one single envelope per set. If permitted in accordance with ITB 13, alternative Bids shall be similarly sealed, marked and included in the sets. The rest of the procedure shall be in accordance with ITB 21.2 and ITB 21.5.

(b) Bidders submitting Bids electronically shall follow the electronic bid submission procedures specified in the BDS.

21.2 The inner and outer envelopes shall

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

(b) be addressed to the Employer in accordance with BDS 22.1; and

(c) bear the specific identification of this bidding process indicated in the BDS 1.1.

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

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

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

22. Deadline for Submission of Bids

22.1 Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS.

22.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

23.1 The Employer shall not consider any Bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

24.1 A Bidder may withdraw, substitute, or modify its Bid – Technical or Price – after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be

(a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION”; and

(b) received by the Employer no later than the deadline prescribed for submission of Bids, in accordance with ITB 22.

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid or any extension thereof.

25. Bid Opening

25.1 The Employer shall open the Technical Bids in public at the address, on the date and time specified in the BDS in the presence of Bidders` designated representatives and anyone who chooses to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 21.1, shall be as specified in the BDS. The Price Bids will remain unopened and will be held in custody of the Employer until the specified time of their opening. If the Technical Bid and the Price Bid are submitted together in one envelope, the Employer may reject the entire Bid. Alternatively, the Price Bid may be immediately resealed for later evaluation.

25.2 First, 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.

25.3 Second, outer envelopes marked “SUBSTITUTION” shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bid will remain unopened in accordance with ITB 25.1. No envelope shall be substituted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.

25.4 Next, outer envelopes marked “MODIFICATION” shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with ITB 25.1.

25.5 All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded:

(a) the name of the Bidder;

(b) whether there is a modification or substitution;

(c) the presence of a bid security or Bid-Securing Declaration, if required; and

(d) any other details as the Employer may consider appropriate.

Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Technical Bid are to be initialed by at least three representatives of the Employer attending bid opening. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB 23.1.

25.6 The Employer shall prepare a record of the opening of Technical Bids that shall include, as a minimum, the name of the Bidder and whether there is a withdrawal, substitution, or modification; alternative proposals; and the presence or absence of a bid security or Bid-Securing Declaration, if one was required. 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. A copy of the record shall be distributed to all Bidders who submitted Bids on time, and posted online when electronic bidding is permitted.

25.7 At the end of the evaluation of the Technical Bids, the Employer will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer. Bidders shall be given reasonable notice of the opening of Price Bids.

25.8 The Employer will notify Bidders in writing who have been rejected on the grounds of their Technical Bids being substantially nonresponsive to the requirements of the Bidding Document and return their Price Bids unopened.

25.9 The Employer shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids, in the presence of Bidders` representatives who choose to attend at the address, on the date, and time specified by the Employer. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.

25.10 All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded:

(a) the name of the Bidder;

(b) whether there is a modification or substitution;

(c) the Bid Prices, including any discounts and alternative offers; and

(d) any other details as the Employer may consider appropriate.

Only Price Bids discounts, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Price Bid and Bill of Quantities are to be initialed by at least three representatives of the Employer attending bid opening. No Bid shall be rejected at the opening of Price Bids.

25.11 The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum, the name of the Bidder, the Bid Price (per lot if applicable), any discounts, and alternative offers. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted Bids on time, and posted online when electronic bidding is permitted.

E. Evaluation and Comparison of Bids

26. Confidentiality

26.1 Information relating to the examination, evaluation, comparison, and postqualification of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on the Contract award is communicated to all Bidders.

26.2 Any attempt by a Bidder to influence the Employer in the evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.

26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it may do so in writing.

27. Clarification of

27.1 To assist in the examination, evaluation, and comparison of the Technical and Price Bids, the Employer may, at its discretion, ask any

Bids

Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Price Bids, in accordance with ITB 33.

27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.

28. Deviations, Reservations, and Omissions

28.1 During the evaluation of Bids, the following definitions apply:

(a) "Deviation" is a departure from the requirements specified in the Bidding Document;

(b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and

(c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.

29. Examination of Technical Bids

29.1 The Employer shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB 11.2 have been provided, and to determine the completeness of each document submitted.

29.2 The Employer shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected.

(a) Letter of Technical Bid;

(b) written confirmation of authorization to commit the Bidder;

(c) Bid Security or Bid-Securing Declaration, if applicable; and

(d) Technical Proposal in accordance with ITB 16.

30. Responsiveness of Technical Bid

30.1 The Employer's determination of a Bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB11.

30.2 A substantially responsive Technical Bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

(a) if accepted, would:

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

(ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer's rights or the Bidder's obligations under the proposed Contract; or

(b) if rectified, would unfairly affect the competitive position of other

Bidders presenting substantially responsive Bids.

30.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 16, Technical Proposal, in particular, to confirm that all requirements of Section 6 (Employer's Requirements) have been met without any material deviation, reservation, or reservation.

30.4 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.

31. Nonmaterial Nonconformities

31.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid that do not constitute a material deviation, reservation, or omission.

31.2 Provided that a Technical Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the Price Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

31.3 Provided that a Technical Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section 3 (Evaluation and Qualification Criteria).

32. Qualification of the Bidder

32.1 The Employer shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders meet the qualifying criteria specified in Section 3 (Evaluation and Qualification Criteria).

32.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.1.

32.3 An affirmative determination shall be a prerequisite for the opening and evaluation of a Bidder's Price Bid. A negative determination shall result into the disqualification of the Bid, in which event the Employer shall return the unopened Price Bid to the Bidder.

33. Correction of Arithmetical Errors

33.1 During the evaluation of Price Bids, the Employer shall correct arithmetical errors on the following basis:

(a) 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.

(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.

(c) If there is a discrepancy between the bid price in the Summary of Bill of Quantities and the bid amount in item (c) of the Letter of Price Bid, the bid price in the Summary of Bill of Quantities will prevail and the bid amount in item (c) of the Letter of Price Bid will be corrected.

(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 amount in figures shall prevail subject to (a), (b) and (c) above.

33.2 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 may be forfeited or its Bid-Securing Declaration executed.

34. Conversion to Single Currency

34.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency as specified in the BDS.

35. Margin of Preference

35.1 Unless otherwise specified in the BDS, a margin of preference shall not apply.

36. Evaluation of Price Bids

36.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

36.2 To evaluate the Price Bid, the Employer shall consider the following:

(a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including Daywork items, where priced competitively;

(b) price adjustment for correction of arithmetic errors in accordance with ITB 33.1;

(c) price adjustment due to discounts offered in accordance with ITB 14.4;

(d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 34;

(e) adjustment for nonconformities in accordance with ITB 31.3; and

(f) application of all the evaluation factors indicated in Section 3 (Evaluation and Qualification Criteria).

36.3 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.

36.4 If this Bidding Document allows Bidders to quote separate prices for different contracts, and the award to a single Bidder of multiple contracts, the methodology to determine the lowest evaluated price of the contract combinations, including any discounts offered in the Letter of Price Bid, is specified in Section 3 (Evaluation and Qualification Criteria).

36.5 If the Bid, which results in the lowest Evaluated Bid Price, is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses 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 analyses, 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 to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

37. Comparison of Bids

37.1 The Employer shall compare all substantially responsive Bids to determine the lowest evaluated Bid, in accordance with ITB 36.2.

38. Employer's Right to Accept Any Bid, and to Reject Any or All Bids

38.1 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.

F. Award of Contract

39. Award Criteria

39.1 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.

40. Notification of Award

40.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, that its Bid has been accepted.

40.2 At the same time, the Employer shall also notify all other Bidders of the results of the bidding. The Employer will publish in an English language newspaper or well-known freely accessible website the results identifying the bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. After publication of the award, 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, after publication of contract award, requests a debriefing.

40.3 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

41. Signing of Contract

41.1 Promptly after notification, the Employer shall send the successful Bidder the Contract Agreement.

41.2 Within 28 days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

42. Performance Security

42.1 Within 28 days of the receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in accordance with the conditions of contract, subject to ITB 36.5, using for that purpose the Performance Security Form included in Section 9 (Contract Forms), or another form acceptable to the Employer.

42.2 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 or execution of the Bid-Securing Declaration. 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.

42.3 The above provision shall also apply to the furnishing of a domestic preference security if so required.

Section 2 - Bid Data Sheet

This Section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section 1 - Instructions to Bidders.

A. General

ITB 1.1	The number of the Invitation for Bids is: : **BUIDCo/BUDIP-2/ICB/01**
ITB 1.1	The Employer is: State of Bihar, acting through its Urban Development and Housing Department (UDHD), in turn acting through the Bihar Urban Infrastructure Development Corporation Ltd. (BUIDCo). The authorized representative of the Employer is Design and Supervision Consultants (DSC).
ITB 1.1	The name of the **ICB** is: **Improvement of Water Supply System in Gaya Municipal Corporation** The identification number of the **ICB** is: **GA/WS/01** The number and identification of lots comprising this ICB is: **None**
ITB 2.1	The Borrower is: India
ITB 2.1	The name of the Project is: **Bihar Urban Development Investment Program - Tranche 2**

B. Contents of Bidding Documents

ITB 7.1	For **clarification purposes** only, the Employer's address is: Attention: Amrendra kumar Singh Program Director Program Management Unit, Bihar Urban Development Investment Program Bihar Urban Infrastructure Development Corporation Ltd (BUIDCo) Street Address: 3rd floor, Maurya Tower, Mauryalok Complex, Budh Marg City: Patna, Bihar ZIP Code: 800 001 Country: India Telephone: +91 612-2200011 Facsimile number: +91 612- 2210103

	Electronic mail address: apdinpmu.buidco@gmail.com
ITB 7.4	A Pre-Bid meeting will take place as follows : Date: ……..,2016 Time: 11:00 Hrs Place: Conference Hall, BUIDCo A site visit conducted by the Employer will be organized at 11:00 hrs on …….2016.

C. Preparation of Bids

ITB 10.1	The language of the Bid is: English
ITB 11.2 (g)	The Bidder shall submit with its Technical Bid the following additional documents: 1. In case the Bidder is a Joint Venture: a valid JV Agreement legally notarized or attested by an appropriate authority in the bidders' home country, or a formal Letter of Intent to enter into a JV, specifying the financial stakes of each of the joint venture partners. 2. in case the Bidder includes a Specialist Subcontractor: a valid subcontracting agreement or a formal Letter of Intent to enter into a subcontracting agreement.
ITB 11.3 (d)	The Bidder shall submit with its Price Bid the following additional documents: **Nil**
ITB 12.1	The units and rates in figures entered into the Bill of Quantities and Daywork Schedule should be typewritten or if written by hand, must be in print form. Bill of Quantities and Daywork Schedule not presented accordingly may be considered nonresponsive.
ITB 13.1	Alternative bids shall not be permitted.
ITB 13.2	Alternatives times for completion shall not be permitted
ITB 13.4	Alternative technical solutions shall not be permitted

ITB 14.5	The prices quoted by the Bidder shall be : **Adjustable**
ITB 14.7	Add the following at end of Sub ITB 14.7 The bidders are informed that certain tax and duty exemptions are available as per the following GOI notifications: a) *In accordance with Notification No. 108/95–CE dated 28.8.1995 (Goods Supplied to UN or an International Organization) and subsequent amendments, the Central Government has granted exemptions for all goods falling under the Schedule to the Central Excise Tariff Act 1985 when supplied to projects financed by an international organization (ADB included) and approved by the Government of India from the whole of (1) the duty of excise levible thereon under Section 3 of the Central Excise Act, 1944 (1 of 1944), and (2) the additional duty of excise levible thereon under Sub-Section (1) of Section 3 of the Additional Duties of Excise (Goods of Special Importance) Act, 1957 (58 of 1957), provided that the need for such goods are properly certified by the appropriate authorities.* b) *In addition, as per Notification No. 84/97-Cus. dated 11.11.1997 and subsequent amendments, and under General Exemption No. 1A, Exemptions to Imports by United Nations or International Organization for Execution of Projects in India, the Central Government has granted exemptions for all goods imported into India for execution of projects financed by an International Organization (ADB included) and approved by the Government of India, from (1) the whole of the duty of customs levible thereon under First Schedule to the Customs Tariff Act, 1975 (51 of 1975), (2) the whole of the additional duty of customs levible thereon under Section 3 of the said Act, and (3) the whole of the special duty of customs levible under Section 68 of the Finance (No. 2) Act 1996 (33 of 1996), provided that the need for such goods is properly certified by the appropriate authorities.* The Employer will assist the Contractor to obtain any lawful exemptions from payment of Excise Duty or Import Duty or any other admissible exemption from any kind of Tax or Duty on Plant, Equipment and Materials that are to be incorporated as a part of the Permanent Works by issue of a “Certificate Under GOI Notification No. 108/95 & 84/97”, duly signed by the Project Authorities and countersigned by the Secretary Finance, Government of Bihar, in the format indicated in Section 9, which indicates the estimated quantities of the Plant, Equipment and Materials that are to be incorporated into the Permanent Works. The Employer will not issue any certificates for plants, materials or equipment that may be required to carry out the Works, but which are not to be incorporated into and form a part of the Permanent Works. The responsibility for obtaining any such exemptions from the Competent Authority will remain with the Contractor and the Employer shall not in any way be responsible for admissibility of the claims or eligibility of the Contractor.
ITB 15.1	The unit rates and the prices shall be quoted by the Bidder entirely in –Indian Rupees(INR)

ITB 15.4	The rates of exchange shall be the selling rates 28 days prior to the deadline for submission of bids published by: **Reserve Bank of India**
ITB 18.1	The bid validity period shall be 120 days.
ITB 19.1	The Bidder shall furnish a bid security in the amount of **INR 63.00 million** or **USD 1.05 million.** Bid Securing Declaration shall not be accepted.
ITB19.2	Not applicable
ITB 19.3	Replace ITB 19.3 with the following:- a. an unconditional bank guarantee; b. an irrevocable letter of credit; or c. demand draft, all from a reputable source *from an eligible country as described in Section 5 (Eligible Countries)* in the name of Managing Director, Bihar Urban Infrastructure Development Corporation Ltd, Patna. In the case of a bank guarantee, the bid security shall be submitted using the Bid Security Form included in Section 4 (Bidding Forms). The form must include the complete name of the Bidder. The bid security shall be valid for *28 days* beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2. *The bank guarantee shall be issued by a reputable bank located in the Employer's country, which may include scheduled banks or nationalized banks, or by a foreign reputable bank outside the Employer's country, through a correspondent bank located in the Employer's country, which may include banks in Patna, to make it enforceable.*
ITB 19.4	Any bid not accompanied by an irrevocable and callable bid security shall be rejected by the Employer as nonresponsive. However, if a bidder submits a bid security that deviates in form, amount, and/or period of validity, the Employer shall request the Bidder to submit a compliant bid security within 14 days of receiving such a request. Failure to provide a compliant bid security within the prescribed period of receiving such a request shall cause the rejection of the Bid.
ITB 20.1	In addition to the original Bid, the number of copies is: one
ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder shall consist of:

	(a) for a single entity, it shall consist of Power of Attorney containing name, position held and signature of authorized person; or (b) in case of a JV or proposed JV, the Power of Attorney for authorization shall be issued in the name of a nominated representative who shall have the authority to sign and conduct all business for and on behalf of the JV during contract execution.
ITB 20.2	The Bidder shall submit an acceptable authorization within 14 days.

D. Submission and Opening of Bids

ITB 21.1	Bidders shall not have the option of submitting their bids electronically.
ITB 21.1 (b)	Not applicable
ITB 22.1	For **bid submission purposes** only, the Employer's address is Attention: Managing Director, Bihar Urban Infrastructure Development Corporation Ltd, Street Address: 3rd floor, Maurya Tower, Mauryalok Complex, Budh Marg City: Patna, Bihar ZIP Code: 800 001 Country: India **The deadline for bid submission is** Date: ……..,2016 Time: 15:00 Hrs
ITB 25.1	The bid opening of Technical Bids shall take place at Street Address: 3rd floor, Maurya Tower, Mauryalok Complex, Budh Marg City: Patna, Bihar ZIP Code: 800 001 Country: India Date: ……..,2016 Time: 16:00 Hrs
ITB 25.1	Electronic bid opening procedure shall not be applicable.
ITB 25.5	The Letter of Technical Bid shall be initialed by at-least three representatives of

	the Employer attending Bid opening.
ITB 25.10	The Letter of Price Bid and Bill of Quantities shall be initialed by at-least three representatives of the Employer attending Bid opening.

E. Evaluation and Comparison of Bids

ITB 32.1	The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: Indian Rupees (INR) The source of the selling exchange rate shall be: **Reserve Bank of India** The date for the selling exchange rate shall be: **28 days prior to the deadline for submission of bids.**
ITB 33.1	**A margin of preference shall not apply.**

Section 3 - Evaluation and Qualification Criteria

- Without Prequalification -

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders. In accordance with ITB 32 and ITB 36, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section 4 (Bidding Forms).

Table of Criteria

1. Evaluation

In addition to the criteria listed in ITB 36.2 (a) – (e), other relevant factors are as follows:

1.1 Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section 6 (Employer's Requirements).

Non-compliance with equipment and personnel requirements described in Section 6 (Employer's Requirements) shall not normally be a ground for bid rejection and such non-compliance will be subject to clarification during bid evaluation and rectification prior to contract award.

1.2 Completion Time

An alternative Completion Time, if permitted under ITB 13.2, will be evaluated as follows: Not applicable

1.3 Technical Alternatives

Technical alternatives , if permitted under ITB 13.4, will be evaluated as follows: Not applicable

1.4 Quantifiable Nonconformities and Omissions

Subject to ITB 14.2 and ITB 36.2, the evaluated cost of quantifiable nonconformities including omissions, is determined as follows:

Pursuant to ITB 31.3, the cost of all quantifiable nonmaterial nonconformities shall be evaluated, including omissions in Daywork where competitively priced 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

1.5 Domestic Preference

If a margin of preference is provided for under ITB 35.1, the following procedure shall apply: Not applicable

1.6 Multiple Contracts

Not applicable

2. Qualification

It is the legal entity or entities comprising the Bidder, and not the Bidder's parent companies, subsidiaries, or affiliates, that must satisfy the qualification criteria described below.

2.1 Eligibility

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
2.1.1 Nationality					
Nationality in accordance with ITB Subclause 4.2.	must meet requirement	must meet requirement	must meet requirement	not applicable	Forms ELI - 1; ELI - 2 with attachments
2.1.2 Conflict of Interest					
No conflicts of interest in accordance with ITB Subclause 4.3.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid
2.1.3 ADB Eligibility					
Not having been declared ineligible by ADB, as described in ITB Subclause 4.4.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid
2.1.4 Government-Owned Entity					
Bidder required to meet conditions of ITB Subclause 4.5.	must meet requirement	must meet requirement	must meet requirement	not applicable	Forms ELI - 1; ELI - 2 with attachments
2.1.5 United Nations Eligibility					
Not having been excluded by an act of compliance with a UN Security Council resolution in accordance with ITB Subclause 4.7.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid

2.2 Pending Litigation

Pending litigation and arbitration criterion shall apply.

2.2.1 Pending Litigation and Arbitration

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
All pending litigation and arbitration, if any, shall be treated as resolved against the Bidder and so shall in total not represent more Fifty(50%) percent of the Bidder's net worth calculated as the difference between total assets and total liabilities.	must meet requirement by itself or as partner to past or existing Joint Venture	not applicable	must meet requirement by itself or as partner to past or existing Joint Venture	not applicable	Form LIT - 1

2.3 Financial Situation

2.3.1 Historical Financial Performance

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Submission of audited financial statements or, if not required by the law of the Bidder's country, other financial statements acceptable to the Employer, for the last Three(3) years to demonstrate the current soundness of the Bidder's financial position. As a minimum, the Bidder's net worth for the last year calculated as the difference between total assets and total liabilities should be positive.	must meet requirement	not applicable	must meet requirement	not applicable	Form FIN - 1 with attachments

2.3.2 Average Annual Construction Turnover

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Minimum average annual construction turnover of US$ 18.62million or INR 1117 million calculated as total certified payments received for contracts in progress or completed, within the last Three (3) years.	must meet requirement	must meet requirement	must meet 25% of the requirement	must meet 40% of the requirement	Form FIN - 2

2.3.3 Financial Resources[1]

If the bid evaluation process and the decision for the award of the Contract takes more than one (1) year from the date of bid submission, Bidders shall be asked to resubmit their current contract commitments and latest information on financial resources supported by latest audited accounts / audited financial statements, or if not required by the law of the Bidder's country, other financial statements acceptable to the Employer, and the Bidders' financial capacity shall be reassessed on this basis.

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
The Bidder must demonstrate that it has the financial resources to meet:					
(a) its current contract commitments, as defined in FIN-4 (Total Financial Requirements for Current Contract Commitments), plus	must meet requirement	not applicable	must meet requirement for its own contractual commitments	not applicable	Form FIN - 4
(b) the requirements for the Subject Contract of **INR 186 million or USD 3.10million**	must meet requirement	must meet requirement	must meet 25% (A)	must meet 40%.(B)	Form FIN – 3 and Form FIN - 4

[1] The employer has the option to move this criterion from Section 3 (Evaluation and Qualification Criteria) to Section 6 (Employer's Requirements), in which case
(a) the Employer shall confirm compliance with the financial resources prior to award of contract in accordance with ITB 39.1 Award Criteria; and
(b) in place of the Financial Resources criterion, the employer shall require the bidder to submit together with its bid, and for confirmation during bid evaluation, a Letter of Undertaking to comply with the financial resources given in Section 6 prior to award of contract.

2.4 Construction Experience

2.4.1 Contracts of Similar Size and Nature

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Participation in at least one contract that has been successfully or substantially completed within the last seven(7) years and that is similar to the proposed works, where the value of the Bidder's participation exceeds **INR 1557 million or USD 26.00 million** The similarity of the Bidder's participation shall be based on the physical size, nature of works, complexity, methods, technology or other characteristics as described in Section 6, Employer's Requirements. Single Entity must meet requirement	must meet requirement	not applicable	not applicable	must meet requirement	Form EXP - 1

2.4.2 Construction Experience in Key Activities

(May be complied with by Specialist Subcontractors. Employer shall require evidence of subcontracting agreement from the Bidder. Specialist Subcontractor is a specialist enterprise engaged for highly specialized processes which cannot be provided by the main Contractor.)

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
For the above or other contracts executed during the period stipulated in 2.4.1 above, a minimum construction experience in the following key activities:	must meet requirement	must meet requirement	not applicable	not applicable	Form EXP - 2
1. Development/Redevelopment /Installation of at least 10 tube wells within the last seven years.					
2. Construction and commissioning of at least 3 Overhead Service Reservoirs of 1 ML capacity within the last three years					
3. Overall management, including technical operations, financial administration and customer relations, of an urban water supply system with a minimum of 10,000 customer connections, for a period of at least one years, within the last seven years. The experience shall include activities in service level improvements as subject of Section 6, Employer's Requirements, such as: a. Urban water supply b. Providing new consumer connections; c. Customer complaint management					
4. Supply of 10,000 Consumer Meters of the type/rating specified within the last seven years, out of which 3,000 should have been supplied in any one of the years and which are in successful operation for at least one year as on the date of bid submission deadline. *(This criteria can be met by intended supplier)*					

Section 4A - Bidding Forms

- Without Prequalification -

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

Table of Forms

Letter of Technical Bid

-Note-

The bidder must accomplish the Letter of Technical Bid on its letterhead clearly showing the bidder's complete name and address.

Date: .....

ICB No.: .....

Invitation for Bid No.: .....

To:.....

We, the undersigned, declare that:

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

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

_____

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

(d) Our firm, including any Subcontractors or Suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.2.

(e) 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.

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

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

(h) [We are not a government-owned enterprise] / [We are a government-owned enterprise but meet the requirements of ITB 4.5].[1]

(i) We agree to permit ADB 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 ADB.

(j) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section 6 (Employer's Requirements) and our technical proposal, or as otherwise agreed with the Employer.

Name .....

In the capacity of .....

Signed .....

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

Date ……..

[1] Use one of the two options as appropriate.

Bid Security
Bank Guarantee

Bank's name, and address of issuing branch or office[1]

Beneficiary: *Name and address of employer*

Date:

Bid Security No.:

We have been informed that . . . . . *name of the bidder.* . . . . (hereinafter called "the Bidder") has submitted to you its bid dated . . . . . (hereinafter called "the Bid") for the execution of . . . . . *name of contract* . . . . . under Invitation for Bids No. . . . . (“the IFB”).

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

At the request of the Bidder, we . . . . . *name of bank.* . . . . hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of . . . . . *amount in figures* . . . . . (. . . . . *amount in words* . . . . .) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

(a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Letter of Bid; 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 (iii) fails or refuses to furnish a domestic preference security, if required.

This guarantee will expire (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the Performance Security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder, or (ii) 28 days after the expiration of the Bidder’s bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.[2]

. . . . . *Bank's seal and authorized signature(s)* . . . . . .

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[1] All italicized text is for use in preparing this form and shall be deleted from the final document.

[2] Or 758 as applicable.

– Note –

In case of a joint venture, the bid security must be in the name of all partners to the joint venture that submits the bid.

Technical Proposal

Personnel

Equipment

Site Organization

Method Statement

Mobilization Schedule

Construction Schedule

Personnel

Form PER – 1: Proposed Personnel

Bidder should provide the details of the proposed personnel and their experience record in the relevant Information Forms below for each candidate:

1.	**Title of position***
	Name
2.	**Title of position***
	Name
3.	**Title of position***
	Name
4.	**Title of position***
	Name
5.	**Title of position***
	Name
6.	**Title of position***
	Name
etc.	**Title of position***
	Name

-- Note --

** As listed in Section 6 (Employer's Requirements).*

Form PER – 2: Resumé of Proposed Personnel

The Bidder shall provide all the information requested below. Use one form for each position.

Position		
Personnel information	**Name**	**Date of birth**
	Professional qualifications	
Present employment	**Name of employer**	
	Address of employer	
	Telephone	**Contact (manager / personnel officer)**
	Fax	**E-mail**
	Job title	**Years with present employer**

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

From	To	Company/Project/Position/Relevant Technical and Management Experience

Equipment

Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		
Equipment Information	**Name of manufacturer**	**Model and power rating**
	Capacity	**Year of manufacture**
Current Status	**Current location**	
	Details of current commitments	
Source	**Indicate source of the equipment** ☐ **Owned** ☐ **Rented** ☐ **Leased** ☐ **Specially manufactured**	

Omit the following information for equipment owned by the Bidder.

Owner	**Name of owner**	
	Address of owner	
	Telephone	**Contact name and title**
	Fax	**Telex**
Agreements	**Details of rental / lease / manufacture agreements specific to the project**	

Site Organization

Method Statement

Mobilization Schedule

Construction Schedule

Bidders Qualification

To establish its qualifications to perform the contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI - 1: Bidder's Information Sheet

Bidder's Information	
Bidder's legal name	
In case of Joint Venture, 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 documents.

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

Form ELI - 2: Joint Venture Information Sheet

Each member of the Joint Venture and Specialist Subcontractor must fill out this form separately.

Joint Venture / Specialist Subcontractor Information	
Bidder's legal name	
Joint Venture Partner's or Specialist Subcontractor's legal name	
Joint Venture Partner's or Specialist Subcontractor's country of constitution	
Joint Venture Partner's or Specialist Subcontractor's year of constitution	
Joint Venture Partner's or Specialist Subcontractor's legal address in country of constitution	
Joint Venture Partner's or Specialist Subcontractor's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)	
Attached are copies of the following documents. ❑ 1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2. ❑ 2. Authorization to represent the firm named above, in accordance with ITB 20.2. ❑ 3. In the case of government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5.	

Specialist Subcontractor is a specialist enterprise engaged for highly specialized processes that cannot be provided by the main Contractor.

Form LIT - 1: Pending Litigation and Arbitration

Each Bidder must fill out this form if so required under Criterion 2.2(b) of Section 3 (Evaluation and Qualification Criteria) to describe any pending litigation or arbitration formally commenced against it.

In case of joint ventures, each Joint Venture Partner must fill out this form separately, and provide the Joint Venture Partner name below:

Joint Venture Partner: _____

Pending Litigation and Arbitration

Choose one of the following:

- ❑ No pending litigation and Arbitration.
- ❑ Below is a description of all pending litigation and Arbitration involving the Bidder (or each Joint Venture member if Bidder is a Joint Venture).

Year	Matter in Dispute	Value of Pending Claim in INR or US$ Equivalent	Value of Pending Claim as a Percentage of Net Worth

- Note -

This form shall only be included if Criterion 2.2(b) of Section 3 (Evaluation and Qualification Criteria) is applicable.

Form FIN - 1: Historical Financial Performance

Each Bidder must fill out this form.

In case of joint ventures, each Joint Venture Partner must fill out this form separately, and provide the Joint Venture Partner name below:

Joint Venture Partner: _____

Financial Data for Previous 3 Years [INR or US$ Equivalent]		
Year 1:	**Year 2:**	**Year __:**

Information from Balance Sheet

Total Assets (TA)			
Total Liabilities (TL)			
Net Worth = TA – TL			
Current Assets (CA)			
Current Liabilities (CL)			
Working Capital = CA - CL			

Most Recent Working Capital		To be obtained for most recent year and carried forward to FIN-3 Line 1; in case of Joint Ventures, to the corresponding Joint Venture Partner's FIN-3

Information from Income Statement

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

❑ Attached are copies of financial statements (balance sheets including all related notes and income statements) for the last _____ years, as indicated above, complying with the following conditions:

- Unless otherwise required by Section 3 of the Bidding Document, all such documents reflect the financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries, or affiliates.
- Historical financial statements must be audited by a certified accountant.
- Historical financial statements must be complete, including all notes to the financial statements.
- Historical financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Form FIN - 2: Average Annual Construction Turnover

Each Bidder must fill out this form.

The information supplied should be the Annual Turnover of the Bidder or each member of a Joint Venture in terms of the amounts billed to clients for each year for work in progress or completed, converted to US Dollars at the specified exchange rate.

In case of joint ventures, each Joint Venture Partner must fill out this form separately, and provide the Joint Venture Partner name below:

Joint Venture Partner: _____

Annual Turnover Data for the Last 3 Years (Construction only)			
Year	**Amount Currency**	**Exchange Rate**	**INR or US$ Equivalent**
	Average Annual Construction Turnover		

Form FIN – 3: Availability of Financial Resources

Bidders must demonstrate sufficient financial resources, usually comprising of Working Capital supplemented by credit line statements or overdraft facilities and others to meet the Bidder's financial requirements for

(a) its current contract commitments, and

(b) the subject contract.

In case of joint ventures, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner name below:

Joint Venture Partner: _____

Financial Resources		
No.	**Source of financing**	**Amount (INR or US$ equivalent)**
1	Working Capital (to be taken from FIN-1)	
2	Credit Line[a]	
3	Other Financial Resources	
	Total Available Financial Resources	

[a] *To be substantiated by a letter from the bank issuing the line of credit.*

Form FIN- 4: Financial Requirements for Current Contract Commitments

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

In case of joint ventures, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner name below:

Joint Venture Partner: _____

Current Contract Commitments						
No.	**Name of Contract**	**Employer's Contact (Address, Tel, Fax)**	**Contract Completion Date**	**Outstanding Contract Value (X)**	**Remaining Contract Period in months (Y)**	**Monthly Financial Resources Requirement (X / Y)**
1						
2						
3						
4						
Total Monthly Financial Requirement for Current Contract Commitments						**US$** . . . . .

Form FIN - 5: Compliance Check of Financial Resources (Criterion 2.3.3 of Section 3)

Form FIN-5A: For Single Entities

For Single Entities:	Total Available Financial Resources from FIN-3 (C)	Total Monthly Financial Requirement for Current Contract Commitments (CCC) from FIN-4 (D)	Available Financial Resources net of CCC (C-D)	≥	Requirement[a]
_____ (Name of Bidder)	_____	_____	_____	≥	100% of Requirement from Section 3 - 2.3.3(b) _____

Form FIN-5B: For Joint Ventures

For Joint Ventures:	Total Available Financial Resources from FIN-3 (C)	Total Monthly Financial Requirement for Current Contract Commitments (CCC) from FIN-4 (D)	Available Financial Resources net of CCC (C-D)	≥	Requirement[a]
One Partner:					
_____ (Name of Partner)	_____	_____	_____	≥	B(%) of Requirement _____
Each (Other) Partner:					
_____ (Name of Partner 1)	_____	_____	_____	≥	A(%) of Requirement _____
_____ (Name of Partner 2)	_____	_____	_____	≥	A(%) of Requirement _____
_____ (Name of Partner 3)	_____	_____	_____	≥	A(%) of Requirement _____
All partners combined			$\sum$ **(C-D)[b] =** _____	≥	100% of Requirement from Section 3 - 2.3.3(b _____

- Note -

Form FIN – 5 is made available for use by the bidder as a self-assessment tool, and by the employer as evaluation work sheet, to determine compliance with financial resources.

[a] *Requirement for the subject contract is defined in Criterion 2.3.3(b) of Section 3. Value A is the required percentage of the subject contract, which each partner must meet; and value B is the required percentage of the subject contract, which one partner must meet. A and B values are defined in Criterion 2.3.3 of Section 3 (Evaluation and Qualification Criteria).*

[b] *Σ (C – D) = sum of available financial resources net of current contract commitments (CCC) for all partners.*

Form EXP – 1: Contracts of Similar Size and Nature

Fill out one (1) form per contract.

Contract of Similar Size and Nature			
Contract No . . . . . of	**Contract Identification**		
Award Date		**Completion Date**	
Role in Contract	❑ **Contractor**	❑ **Management Contractor**	❑ **Subcontractor**
Total Contract Amount			**US$**
If partner in a Joint Venture or subcontractor, specify participation of total contract amount	**Percent of Total**	**Amount**	
Employer's name **Address** **Telephone number** **Fax number** **E-mail**			
Description of the similarity in accordance with Criterion 2.4.1 of Section 3			
Participation in at least one contract that has been successfully or substantially completed within the last seven(7) years and that is similar to the proposed works, where the value of the Bidder's participation exceeds **INR 1557 million or USD 26.00 million** The similarity of the Bidder's participation shall be based on the physical size, nature of works, complexity, methods, technology or other characteristics as described in Section 6, Employer's Requirements. Single Entity must meet requirement			

Form EXP - 2: Construction Experience in Key Activities

Fill out one (1) form per contract.

Contract with Similar Key Activities			
Contract No . . . . . **of**	**Contract Identification**		
Award Date		**Completion Date**	
Role in Contract	❑ **Contractor**	❑ **Management Contractor**	❑ **Subcontractor**
Total Contract Amount			**US$**
If partner in a Joint Venture or subcontractor, specify participation of total contract amount	**Percent of Total**	**Amount**	
Employer's name **Address** **Telephone number** **Fax number** **E-mail**			
Description of the key activities in accordance with Criterion 2.4.2 of Section 3			
For the above or other contracts executed during the period stipulated in 2.4.1 above, a minimum construction experience in the following key activities:			
1. Development/Redevelopment /Installation of at least 10 tube wells within the last seven years.			
2. Construction and commissioning of at least 3 Overhead Service Reservoirs of 1 ML capacity within the last three years			

3. Overall management, including technical operations, financial administration and customer relations, of an urban water supply system with a minimum of 10,000 customer connections, for a period of at least one years, within the last seven years. The experience shall include activities in service level improvements as subject of Section 6, Employer's Requirements, such as: a. Urban water supply b. Providing new consumer connections; c. Customer complaint management	
4. Supply of 10,000 Consumer Meters of the type/rating specified within the last seven years, out of which 3,000 should have been supplied in any one of the years and which are in successful operation for at least one year as on the date of bid submission deadline. *(This criteria can be met by intended supplier)*	

Schedule No 1
Technical Schedule
(To be completed by the Bidder)

1.0 Introduction

Technical Schedules cover only the few technical details of equipment offered by the bidder.

1.1 Submersible pumps

Description	Unit	Particulars
Type		
Manufacturer		
Country of origin		
Model No.		
Pumpset total weight	kg	
Duty: capacity	l/s	
Duty head	m	
Rated power	kW	
Efficiency	%	
Design max. size of solids which can be pumped	mm	
Details of guide rail system:		
Materials:		
casing		
impeller		
guide rails		
Degree of motor protection	IP	

1.2 Vertical Pumps

S. No.	Particulars	Units	Particulars
1.	Rated Discharge (Q)	LPS	

S. No.	Particulars	Units	Particulars
2.	Design head (h)	M	
3.	Rated speed a) Pump b) Motor	 Rpm Rpm	
4.	Pump Output (1) x (2) / 102	kW	
5.	Head loss in column assembly and discharge head	M	
6.	Head loss at suction strainer	M	
7.	Head loss at suction bell mouth	M	
8.	Bowl assembly head (H) = (2) + (5) + (6) + (7)	M	
9.	Bowl assembly output (1) x (8)/ 102	kW	
10.	Bowl efficiency	%	
11.	Input to bowl assembly (9)/ (10) x 100	kW	
12.	Power loss in thrust bearing	kW	
13.	Power loss in the line shaft bearing, stuffing box, flexible coupling and shaft losses.	kW	
14.	Input to pump (11) + (12) + (13)	kW	
15.	Pump efficiency (4) / (14)		
16.	Motor efficiency at load corresponding to rated conditions.	%	

S. No.	Particulars	Units	Particulars
17.	Input to motor (14)/ (16) x 100		
18.	Guaranteed overall efficiency of pump-motor set (4)/ (17) x 100	%	
19.	NPSH required at operating head corresponding to highest water level with single pump operation	M	
20.	Minimum Submergence required at operating head corresponding lowest water level with single pump operation	M	
21.	Life of thrust bearing (calculations giving maximum hydraulic thrust encountered, capacity of thrust bearing etc. shall be enclosed to substantiate life of thrust bearing)	Hrs.	

1.3 433V Motor Schedule

S. No.	Particulars	Units	
1.	Pump head at which maximum power is required within specified working range of pump head (As specified in Section – 6)	M	
2.	Corresponding discharge	LPS	
3.	Corresponding pump efficiency	%	
4.	Maximum power required by pump $\frac{\{(1) \times (2)\}}{102} \times \frac{100}{(3)}$	kW	
5.	Margin at 5 % over maximum power required by pump. (4) x 0.05	kW	

S. No.	Particulars	Units	
6.	Margin at 10 % over power required by pump at duty point	kW	
7.	Minimum motor rating required	kW	
8.	Rating of motor offered	kW	

1.4 11/0.433 KV Transformer

Sr. No.	Description		Unit	Particulars
1	Make			
2	Applicable standards			
3	Type/Designation			
4	Full load rating		MVA	
	Rated no-load voltages	HV	kV	
5		LV	kV	
6	Guaranteed impedance voltage at rated current for all taps		%	
7	Guaranteed efficiency at 75 Deg C at unity P.F at full load			
8	External short circuit withstand capacity		MVA	
Tappings on winding				
	On-load/off circuit taps			
9	Full power tapping range		%	
10	On load tap changer			
(a)	Make			
(b)	Type designation			
11	Minimum clearance height for lifting core and windings from tank		mm	
12	Bushings:			
(a)	Rated voltage class		kV	
(b)	Rated current		A	
(c)	Free space required at top for removal		mm	
13	Guaranteed no load losses (core loss and dielectric loss) at 100% rated voltage and frequency		kW	
14	Guaranteed no-load current:			
(a)	When excited from LV side at 100% rated voltage		A	
(b)	When excited from LV side at 110% rated voltage		A	
15	Wheels:			
(a)	Plain/flanged			
(b)	Unidirectional/bidirectional			
(c)	Quantity			
(d)	Gauge (s)			
16	Vacuum withstand capability:		mm of Hg.	
17	Weights			
(a)	Core winding assembly		Kg	

Sr. No.	Description	Unit	Particulars
(b)	Oil	Kg	
(c)	Tank, Coolers and fittings		
(d)	Total	Kg	
(e)	Untanking weight	Kg	
18	Shipping section		
19	Size of largest package (L x B x H)	mm	
20	Weight of the largest package	Ton	
21	Hydraulic jack		
(a)	Make		
(b)	Type		
(c)	Number		
(d)	Capacity		
22	Bushing CTs		
(a)	Make		
(b)	Quantity		
(c)	Ratio		
23	General outline drawing enclosed with the tender showing the transformer with all its fittings and accessories in plan, front and side elevations and other details	Yes/No	
24	Whether GA Drawings/ Documents/ Literature / Catalogues etc. as per Volume-2, Part-2 enclosed with the bid	Yes/No	
25	Whether copies of type test certificates/ report as per the latest standards enclosed with the bid	Yes/No	
26	Whether copies of user's certificates enclosed with bid	Yes/No	
27	Whether all routine/type/acceptance tests will be carried out as specified (If not, furnish list)	Yes/No	

Section 4 - Bidding Forms

4B-Price

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

Table of Forms

Letter of Price Bid

Date: .....

ICB No.: GA/WS/01

Invitation for Bid No.: BUIDCo/BUDIP-2/ICB/01

To:

Managing Director,
Bihar Urban Infrastructure Development Corporation Ltd. (BUIDCo),
3rd floor, Maurya Tower, Mauryalok Complex, Budh Marg
Patna, Bihar
PIN Code: 800 001
India

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) 8;

(b) We offer to execute in conformity with the Bidding Documents and the Technical Bid submitted for the following Works:

Improvement of Water Supply System in Gaya Municipal Corporation (GA/WS/01)

(c) The total price of our Bid, excluding any discounts offered in item (d) below is:

……..

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

……..

……..

(e) Our Bid shall be valid for a period of 120 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 Documents;

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

Name of Recipient	Address	Reason	Amount

....

....

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

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

(j) We agree to permit ADB 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 ADB.

Name .....

In the capacity of .....

Signed .....

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

Date.....

* *If none has been paid or is to be paid, indicate "none".*

Schedules

Schedule of Payment Currencies

For .....***insert name of Section of the Works***.....

Separate tables may be required if the various sections of the Works (or of the Bill of Quantities) will have substantially different foreign and local currency requirements. In such a case, the Employer should prepare separate tables for each Section of the Works.

	A	B	C	D
Name of Payment Currency	**Amount of Currency**	**Rate of Exchange to Local Currency**	**Local Currency Equivalent C = A x B**	**Percentage of Net Bid Price (NBP) 100xC / NBP**
Local currency		**1.00**		
Foreign Currency #1				
Foreign Currency #2				
Foreign Currency #				
Net Bid Price				**100.00**
Provisional Sums Expressed in Local Currency	***90,000,000***	**1.00**		
BID PRICE				

- Note -

The rates of exchange shall be the selling rates 28 days prior to the deadline for submission of bids published by the source specified in BDS 15.

Tables of Adjustment Data

Tables of Adjustment Data for Payment of Works

Table A.1 - Local Currency:

Index Code	Index Description	Source of Index	Base Value and Date	Amount	Weighting
a	Nonadjustable	—	—	—	0.15
b	Labour Component (L):	Consumer Price Index for labour issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.25
c	Cement (C)	Wholesale Price Index for grey cement (OPC) issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.05
d	Bitumen (B)	Wholesale Price Index for Bitumen issued by Mathura Refinery	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.05
e	Ferrous Metal (S)	Wholesale Price Index for ferrous metal issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.10
f	HDPE/ PVC Pipes and specials (H)	Wholesale Price Index for resin (HDPE / PVC pipes) issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.20
g	Pumps and Machinery and Spares (PM)	Wholesale Price Index for Construction machinery issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.05
h	Other Materials (O)	Wholesale Price Index for all commodities issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.15
				Total	**1.00**

Table B.1 - Foreign Currency

Name of Currency:
If the Bidder wishes to quote in more than one foreign currency, this table should be repeated for each foreign currency.

Index Code	Index Description	Source of Index	Base Value and Date	Bidder's Currency in Type/Amount	Equivalent in FC1	Bidder's Proposed Weighting
	Nonadjustable	—	—	—		A: 0.15 B: ____ C: ____ D: ____ E: ____
				Total		**1.00**

Tables of Adjustment Data for Payment for Operation Service:

Table A.2 – Local Currency

Index Code	Index Description	Source of Index	Base Value and Date	Amount	Weighting
a	Nonadjustable	—	—	—	0.15
b	**Material Component:**	Wholesale Price Index for all commodities issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.35
c	**Labour Component:**	Consumer Price Index for Industrial workers issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.50
				Total	1.00

Table B.2 - Foreign Currency

Name of Currency:
If the Bidder wishes to quote in more than one foreign currency, this table should be repeated for each foreign currency.

Index Code	Index Description	Source of Index	Base Value and Date	Bidder's Currency in Type/Amount	Equivalent in FC1	Bidder's Proposed Weighting
	Nonadjustable	—	—	—		A: 0.15 B: ____ C: ____ D: ____ E: ____
				Total		**1.00**

Bill of Quantities

Content

The Bill of Quantities is divided into following sections:-

Preamble to Bill of Quantities; and

Bill of Quantities (Price Proposals)

Bill of Quantities

Preamble to Bill of Quantities

1.0 General

1.1 The Price Schedules are divided into separate Schedules as follows:

SUMMARY OF BID PRICES

PART A: CONSTRUCTION WORKS

Bill No. 01	Refurbishment of Tube-wells
Bill No. 02	Refurbishment of Existing Service Reservoirs
Bill No. 03	Refurbishment of Existing Pump Houses & Site Stores
Bill No. 04	Demolishing of Dilapidated Pump-house & Construction of New Pump-house
Bill No. 05	Transmission/Rising Mains, Valves, Specials and Appurtenances etc.
Bill No. 06	Distribution Network, Valves, Specials and Appurtenances etc.
Bill No. 07	Construction of New Reservoirs
Bill No. 08	House Service Connection
Bill No. 09	Public Stand Post
Bill No. 10	Monitoring Station
Bill No. 11	Customer Service Centers
Bill No. 12	Miscellaneous Works
Bill No. 13	Mechanical Work
Bill No. 14	Electrical Work
Bill No. 15	SCADA and Automation Work
Bill No. 16	Carriage of Materials for Sand, Coarse Aggregate, Bricks and Stones in Civil Works

PART B: OPERATION SERVICE

Bill No. 17	Operation and Maintenance of Water Supply System

PART C: PROVISIONAL SUM

Bill No. 18	Provisional Sum

1.2 The Bill of Quantities (BOQ) shall be read in conjunction with the Instructions to Bidders, General and Particular Conditions of Contract, Technical Specifications, and Drawings.

1.3 This preamble to the BOQ shall form part of the Contract. If there is inconsistency between the BOQ, Technical Specifications and Drawings and in case of conflict among different sections/heads, precedence shall be given in the following order of descending priority:

a) Bills of Quantities and Preamble to the Bills of Quantities;

b) Technical Specifications;

c) Drawings;

d) Relevant Indian or International Standards.

1.4 The Contractor shall be deemed to have visited the site and read and examined the Bidding Documents before completing the Bill of Quantities and the Schedule of Rates. The Drawings, Specifications, Schedules etc. are to be considered as explanatory of each other and no advantage shall be taken of any omission in tender documents.

1.5 The Contractor shall be deemed to be fully conversant with and to have made full allowance in his bid for the site conditions, the nature and complexity of the work to be undertaken, the other extensive development and construction work currently being or which may be executed on and around the Site and all changes in the nature and condition of the Site from that existing at the time of Tender.

1.6 General directions and descriptions of work and materials given in the Specification or shown on the Drawings are not necessarily repeated in the Bill of Quantities and reference is to be made to the Specification and the Drawings for this information.

The Bill of Quantities is an estimate of the quantities of work involved and is to be used as a basis for pricing of the bid and for valuation of the work executed, in conjunction with instructions to bidders, terms and conditions of contract, general and specific technical specifications and drawings.The contractor shall quote the rates for all items including the cost of compliance of EMP and IEE. No separate cost shall be paid for compliance of EMP and IEE.

1.7 The quantities given in the BOQ 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 Employer's Representative, and valued at the rates and prices bid in the priced BOQ, where applicable, and otherwise at such rates and prices as the Employer's Representative may fix within the terms of the Contract.

1.8 The rates quoted in the schedule shall be the all-inclusive value for the work described and be deemed to include for all the Contractor's liabilities and obligations and all risks set forth or implied in the document and all matters and things necessary for the proper construction of the Works **including surveying, setting out, plant, labour, supervising, materials, erection, maintenance, insurance, profit, taxes and duties together with all general risks liabilities and obligations set out or implied in the Contract.** The Charge for any obligation of the Contractor for proper/satisfactory completion of work for which apparently no corresponding item is given in the Bills of Quantities shall be deemed to be included in the Contract Rates and Prices entered against the billed items.

1.9 The contractor will have to ensure all his equipment/machinery, staff including skilled and unskilled labour and protection against damages to third party for which he will have to provide insurance policies to cover up all of above. Moreover he will renew the policies before their expiry. It is mandatory to comply with the condition, otherwise he will not be allowed to proceed with the work. A rate or price shall be entered against each item, 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 items, rates and prices entered in the BOQ.

1.10 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 required Items are specified in the BOQ for the particular item , the cost shall be deemed to be distributed among the Rates and Prices entered for the related Items of Work, 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.

1.11 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 Engineer in accordance with the Conditions of Contract.

1.12 The method of execution and measurement of completed work for payment shall be in accordance to the respective procedures provided in the Technical Specifications or Particular Specifications under this Contract and in the absence of which shall be in accordance to the relevant BIS Standard and Standard Specification of the State of Bihar or Standard Specification published by the Central Public Works Department, Government of India as the case may be.

1.13 Arithmetic errors will be corrected by the Employer as follows:

a) 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;

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;

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; and

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 amount in figures shall prevail subject to (a), (b) and (c) above.

1.14 Rock is defined as all material that, in the opinion of the Employer's Representative, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for their removal, and that cannot be extracted by ripping with a tractor of at least 150 brake horse power (BHP) with a single, rear-mounted, heavy-duty ripper.

1.15 All defective works are liable to be demolished, rebuilt and defective materials replaced by the contractor at his own cost and time.

1.16 In view of the site location and their prevailing condition, it is mandatory to the Contractor to visit the site and make himself thoroughly familiar with the site conditions, access and account for all possible difficulties and other requirements mentioned elsewhere in his bid prior to submission. When a contractor submits his bid for this work, it will be considered that he has quoted for this work with full and complete knowledge of the site and prevailing conditions, and no claim for additional compensation shall be entertained on this account

1.17 Description of items in this BOQ is by itself not complete, and for a full description the BOQ should be read together with the Technical Specifications and Drawings. Rates quoted in the BOQ are deemed to have included all aspects covered in the Preamble and Technical Specifications, and all features and details shown in the Drawings.

1.18 The Bidder shall, in the course of studying the Contract Agreement, point out all his/her remarks on the documents and make all his/her queries to the Employer who will study these remarks and clarify any discrepancy between the Bidding Documents.

1.19 Submissions shall be strictly in accordance with the documents and shall not be qualified in any way. The Bidder shall not alter the text of the BOQ.

1.20 Extra and excess items of work shall not vitiate the Contract. The Contractor shall be bound to execute extra items of work as directed by the Engineer. The rates for extra items will be as per rates decided under Contract Conditions.

1.21 For the evaluation process, if requested by the Evaluation Committee, the Contractor shall provide an analysis sheet for all priced items showing how the rate entered was derived.

1.22 The rates shall be deemed to include all the cost of Works described in the Bidding Documents to operate, maintain and manage the water supply assets and services in Gaya water Supply distribution service area within Gaya Municipal Corporation.

1.23 Price adjustment as stipulated in Schedule 5 – Contractor Payments, Particular Conditions of Contract shall apply on all items of works, Materials, and services executed under this BOQ and as approved in the work plan, from the date of submission of bid.

1.24 The Bidder shall satisfy himself/herself as to the meaning of every item in the BOQ. The rates and prices inserted in the BOQ by the bidder shall be deemed to cover all costs, taxes, customs and import duties, levies, profits, risks, liabilities, transit insurance and obligations set forth or implied in the bid, as well as proper operation, maintenance and management of the Works including, but not limited to the following:

(i) All labour and Materials including consumables;

(ii) All temporary work of every description required including over ground pumping and other requirements to avoid disruption to the service whilst maintenance or repair work is carried out;

(iii) The provision and use of all equipment, tools and Plant of every kind, whether mechanical or non-mechanical, required for the expeditious carrying out of the Works in their proper sequence;

(iv) Provision for scaffolding, staging, guard rails, temporary stairs, temporary access during execution, approach roads up to the Site for the movement of vehicles, and heavy excavation machinery with supporting transport facility;

(v) Provision for excavation, back-filling, bringing to the Site extra fill for back-fill, making good and reinstating surfaces, disposing of surplus material, dealing with all ground water and wastewater flows, and for work in close proximity to other utility apparatus including protecting that apparatus;

(vi) Provision for work on pipe line corridors such as traffic control measures, safety barriers, obtaining any approvals and permits from authorities, and signage and reinstatement of surfaces;

(vii) Cooperation and coordination of the work with related authorities, other contractors and utilities, including obtaining their permission before starting the related Works if required; and

(viii) Providing security arrangements to guard the Site and premises at all times and to maintain strict control on the movement of Materials and labour until the completion of the work.

1.25 All electricity costs associated with operations and maintenance of facilities during operation service period shall be paid by GMC directly to the electricity service provider. The power connections shall be obtained in the name of GMC, the charges of which will be paid by GMC directly to electricity service provider or reimbursed under provisional sum if paid by the Contractor.

1.26 The serviceable materials, recovered while shifting of utilities as ascertained by the Engineer, shall be deposited at designated store yards or as directed by the Engineer. No payment shall be made to the Contractor in this regard.

1.27 Works itemized in the BOQ will be subject to measurement. Such measurement will be in the unit of measurement shown the BOQ and payment shall be made on the measured quantities.

1.28 Any item of work which is specified and required for the proper operation, maintenance and management of Works, and not included or itemized in the BOQ, shall not be measured nor paid for separately but shall be deemed to have been allowed for by the Contractor as part of their Price Bid.

1.29 All rules and regulations of the labour department, contract labor Laws, provident fund and employee state insurance and connected Laws, and all other Laws of the land are to be complied with by the Bidder within the quoted rates.

1.30 The bidder is expected to inspect the Site to investigate the following items before quoting their rates in the tender:

a) Nature and type of soil proposed for excavation and safety of excavation;

b) Availability of power for execution;

c) Availability of water for execution;

d) Means of disposal of storm water/bailing out water from the Site;

e) Means of disposal of water due to de-watering at the Site;

f) Nature and type of protection required for neighboring property to ensure full safety during construction activities in progress; and

g) Place for disposal of serviceable / unserviceable material obtained during construction activities in progress.

1.31 GMC will provide required space for construction of service centers, office and stores in campuses or at suitable locations. No land will be provided by the Employer to the Contractor for constructing any structure for his labor, workman and supervisory camps, un-authorized hutments, canteen or teashops at the Site or within the premises. The Contractor shall make his/her own arrangements for the same outside the premises/boundary. These, if any, shall be with the knowledge of and prior approval of the Employer's Representative.

1.32 The word "Ditto" mean the repetition of all or part of the preceding items as applicable to complete the sense of the items.

2.0 Provisional Sums

2.1 TheProvisional Sum included and so designated in the BOQ shall be expended in whole or in part at the direction and discretion of the Employer's Representative in accordance with the Conditions of Contract. It will be used by the Employer's Representative for nominated sub-contractors, line agencies, third party inspecting agencies, charges levied by statutory electrical, telephone, or other authorities, or for other miscellaneous works. The use of the Provisional Sum will also be for relocation of utilities above or under the ground that conflict with the existing or permanent line or level of the Works, independent sampling and laboratory testing, as directed by the Employer's Representative, replacement or compensation for plants and trees removed due to the Works, and permanent reinstatement of asphalt roads, etc., as directed by the Employer's Representative.

3.0 Measurements:

3.1 It is to be expressly understood that the measured work is to be taken net (not withstanding any system or practice to the contrary) according to the actual quantities wherein finished according to the Drawings or as may be ordered from time to time by the Engineer and the cost calculated at the respective prices, without any additional charges for any necessary or contingent works connected therewith. The rates quoted are for works in situ and complete in every respect. Unless the Bill of Quantities specially indicates to the Contrary, the constructional plant and temporary works will not be measured.

3.2 Unless otherwise stated, all items are measured net and no allowance will be made for wastage, working space, bulking or shrinkage, overlaps and the like.

3.3 The method of measurement of completed works for payment shall generally be in accordance with the relevant Indian Standard Specifications. IS: 1200 (Part XVI) - 1979 Method of Measurement of Building and Civil Engineering Works. Laying of Water and Sewer Lines Including Appurtenant Items (Third Revision) and Part XIX - 1981 Water Supply, Plumbing and Drains (Third Revision) unless described otherwise in the following clauses.

3.4 The unit rate should be entered against each item in the Bill of Quantities and shall be written in ink in figures and words. Any item left unpriced will be deemed to be included for elsewhere in the Bill of Quantities or the Schedule and hence the rate for that item will be taken as NIL.

3.5 In case any discrepancy is found between the quoted rates and the amounts, the rates will be taken as correct. In case any discrepancy is found between figures and words quoted for rates, then the rates quoted in words will be taken as correct. The rate column should be filled in figures and words legibly while the amount column should be filled in figures legibly.

4.0 **Earthworks**

4.1 The unit of measurement for earthworks where measured separately shall be Cubic Meters. The rates for excavation shall include for all plant, materials and labour required for excavation, irrespective of depth in any material and in any location and shall also include for all temporary diversions, support and protection of any existing services and utilities, temporary support and maintenance of the excavation, dewatering, any additional excavation necessary to provide working space, refilling to any over excavation with materials as required by the Specification or shown on the Drawings, multiple handling and stack piling materials required for filling anywhere on the Site, backfilling with materials as required by the Specification or shown on the Drawings (including the cost of outside material) compaction. Disposal of surplus earth has been included in excavation item.

5.0 Pipe Lines

5.1 All pipe lengths shall be measured in linear meters and the Engineer will certify the total Effective Length laid, this length being measured along the centre-line of the pipeline excluding valves. Valve chambers shall be measured separately by number for sluice Valves & Air valves.

5.2 The rates for supply of pipes, Rubber Rings, mechanical joints, fittings and valves shall include for all costs of manufacture, inspection, testing, packing, consigning, transport, insurance, port charges, import dues, taxes, delivery to the stockpile or Temporary Storage Building and assistance to the Engineer for purposes of inspection.

5.3 The contractor shall have to provide SS bolts and nuts at his own cost. Payment for specials shall be made on the basis of weight which shall not include weights of rubber rings and nuts and bolts.

5.4 The rates for laying of buried pipes shall include for all costs of setting out, transporting pipes from stockpile, cutting to length if required, supervision, laying, jointing, protecting internally and externally, testing, flushing and disinfecting pipelines, traffic control and diversion and restoration of ground levels. The rates shall include for local widening of trenches for bends, deflections and jointing.

5.5 The rates for laying pipes shall be applied over the full length of laid pipe.

5.6 The rate for supply and installation of pipes, specials, valves and fittings shall include for all costs of collection from stockpile or store, repair of coating if necessary, installation in chamber or trench, as the case may be, jointing, support, testing, protection, disinfection and flushing.

5.7 The Engineer will certify the rates inserted in the Bill of Quantities for items relating to pipe laying where the pipes are laid and not tested. Payment shall be made as per Schedule of Payment and Full Payment shall be made only when the pipes laid are tested and found satisfactory; and record drawings submitted.

6.0 Concrete

6.1 The rate for mass concrete for thrust blocks and pipe surrounds shall be measured net as the volume shown on the Drawings or ordered by the Engineer, but account shall not be taken of volume occupied by openings and recesses less than 0.15 cum. in net volume.

7.0 Valve Chambers

7.1 The item includes all the work such as excavation in soil or rock, backfilling etc., disposal of surplus earth, Brick Masonry, Plastering, R.C.C. works, drain arrangements, etc. complete. No payment will be made for any of the items, all items of work are considered to be included in the item of work and shall be measured in number.

8.0 Road Restorations

9.0 The road which are to be dismantled for laying the pipes shall be made good and rates will be given as per the quantity of road which are to restored.

10.0 Barricading

10.1 Proper barricading has to be done during earth work , laying of pipes and up to the backfilling the trench completely for production arrangement wherever required and as per the direction of Engineer and Payment will made for the quantity of work done by the contractor.

11.0 Extra Items

11.1 If the contractor feels that certain items are not covered in the bills of quantities to complete the job he may give them as additional items in the Bill of Quantities complete with rates and quantities. The cost of this will be included during evaluation.

12.0 Approach to Work Site

12.1 Provision for access and approach to all construction sites is the responsibility of contractor and no payment will be made on this account.

13.0 Safety

13.1 The contract rates shall be deemed to include all costs of compliance with safety requirements in the Specification.

14.0 Layout

14.1 The contractor has to ascertain the existing services like water lines, sewers, telephone and electric lines/ cables by putting trial pits at his own cost. In the event of some services coming in the alignment of lines to be laid, the contractor shall inform well in advance to the Employer to get these shifted through line departments and the payment will be made from Provisional Sum. The contractor shall take all due care to avoid damage to any such services and, in case of any damage occurring to them in progressing the work, the Contractor shall make good the same at his own cost/he will have to pay the demurrages demanded by the concerned line Departments. No additional time shall, however, be allowed on this account.

15.0 Coordination and Interfaces with other Contracts

15.1 The contractor shall carryout his work in close coordination with the other contractor's works of concurrent Packages of the Project. Work under this package will have interface with other works of concurrent Packages for the works like construction of Service Reservoirs, rising mains and distribution lines and rehabilitation of existing infrastructures like tube-wells and reservoirs, and other infrastructures either existing or laid through other packages and the contractor shall ensure that lines laid under this package are properly and timely connected to works under other packages.

16.0 Operations Services

16.1 The Contractor shall be eligible for payment for Operation Service from the Operation Service Commencement Date. The payment for Operation Service shall comprise the following but are not limited to:

- Wages for Contractor personnel;
- Cost of chemicals utilized in the disinfection of water;
- Consumables for preventive and corrective maintenance of all existing and new infrastructure assets being operated and maintained by the Contractor;
- All cost of repairs undertaken as part of preventive and corrective maintenance, both on the distribution network and the service connections;
- All cost of furnishing, equipping and operation of offices for GMC staff and of Customer Service Centres;
- All cost related to administration, management, customer relations, monitoring, reporting, accounts, regulatory compliance and incidental charges if any; and
- All cost related to training of Deputation Personnel and GMC staff.

It is expressly clarified that all charges related to electricity payments, raw water extraction cost if any, shall be paid directly by the Employer, in accordance with provisions of the Contract.

16.2 The BOQ for Operation Services have been divided in three parts:

- Operation of water production, storage and transmission;
- Operation of existing distribution network;
- Operation of renovated and new distribution network, executed as DMAs.

16.3 The Contractor is free to distribute and allocate its non-technical operation cost such as for administration, management, customer services, training etc. over the three parts.

16.4 The unit for part 1, operation of water production, storage and transmission, is **months**.

16.5 The unit for part 2, operation of existing distribution network, is **zone-months**. One zone is 1/30 of the entire existing distribution system. At the commencement of the Operation Service Period, the number of zones is 30. This number will gradually reduce with the completion and commissioning of DMAs. Upon completion of works in all 30 DMAs the number of zones is zero (0).

16.6 The unit for part 3, operation of renovated and new distribution network, is **DMA-months**. At the commencement of the Operation Service Period, the number of DMAs is zero (0). This number will gradually increase with the completion and commissioning of works in DMAs. Upon completion of works in all DMAs, the number of DMAs is 30.

16.7 The sum of the total number of zones and the total number of DMAs at any given moment during the Operation Service Period is always 30.

17.0 Metric System and Abbreviations

Millilitre	ml
Million Litres per Day	mld

Million Litre	ML
Litre	ltr
Linear meter	m
Gram	gm
Square metre	m^2
Cubic metre	m^3
Number	No.
Kilogram	kg
Lump Sum	LS
Indian Rupees	Rs
Millimetre	mm
Square Centimetre	cm^2
Square Millimetre	mm^2

18.0 The abbreviations used in the Specification and BOQ shall be read as follows:

IS	Indian Standard
BHP	Brake Horsepower
BS	British Standard
Cm or CM or cm	Centimeter
Cum or CUM	Cubic Meter
MM or mm	Millimeter /s
Rm or RM or RMT	Running Meters
Sqm	Square Meters
SqKm	Square Kilometers
Qtl.	Quintal
Qty.	Quantity
Drg.	Drawing
No. or Nos.	Number or Numbers
PCC	Plain Cement Concrete
RCC	Reinforced Cement Concrete
Rs.	Indian Rupees

Bill of Quantities

Bill of Quantities (Price Proposals)

PRICE PROPOSALS - SUMMARY OF BID PRICES

Name of Project		**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**	
Name of Employer:		**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**	
Contract Title:		**Improvement of Water Supply System in Gaya Municipal Corporation**	
Contract Package No:		**GA/WS/01**	
Bidder's Name :			
S. No.	**Bill No**	**Item Description**	**AMOUNT to be Quoted by Bidder (INR)**
PART A: CONSTRUCTION WORKS			
1.	**Bill No. 01**	**Refurbishment of Tube-wells**	
2.	**Bill No. 02**	**Refurbishment of Existing Service Reservoirs**	
3.	**Bill No. 03**	**Refurbishment of Existing Pump Houses & Site Stores**	
4.	**Bill No. 04**	**Demolishing of Dilapidated Pump-house & Construction of New Pump-house**	
5.	**Bill No. 05**	**Transmission/Rising Mains, Valves, Specials and Appurtenances etc.**	
6.	**Bill No. 06**	**Distribution Network, Valves, Specials and Appurtenances etc.**	
7.	**Bill No. 07**	**Construction of New Reservoirs**	
8.	**Bill No. 08**	**House Service Connection**	
9.	**Bill No. 09**	**Public Stand Post**	
10.	**Bill No. 10**	**Monitoring Station**	
11.	**Bill No. 11**	**Customer Service Center and Control Room at Dandibagh**	
12.	**Bill No. 12**	**Miscellaneous Works**	
13.	**Bill No. 13**	**Mechanical Work**	

14.	**Bill No. 14**	**Electrical Work**	
15.	**Bill No.15**	**SCADA, Furniture and Equipment**	
16.	Bill No. 16	**Carriage of materials for sand, coarse aggregate, bricks and stones in civil works**	
Total of Part A (Sum of Bill No 01 to Bill No 14)			
PART B: OPERATIONS SERVICES			
1.	**Bill No. 17**	**Operation and Maintenance of Water Supply System**	
PART C: PROVISIONAL SUM			
1.	**Bill No. 18**	**Provisional sum**	**90,000,000**

Grand Total (PART A+ PART B+ PART C)	**In Figures**	
	In Words	

PRICE PROPOSALS - PART A: CONSTRUCTION WORKS

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 01: REFURBISHMENT OF TUBE WELLS	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
1	**REFURBISHMENT OF TUBE WELLS**					
1.1	**Cleaning with chemical treatment and redevelopment of tube well** in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed (10 hours per tube well), and measuring the yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tube well, all complete, including hire &labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	No	**29.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
1.2	**Removal and reinstallation of existing pump** in the TW for measurement of discharge by a higher capacity Submersible pump for determining actual yield of TW after redevelopment.	Nos.	**29.00**			
1.3	**Installation of higher duty pump** sets for determining the yield and removal after yield test including conducting yield test for 24 hours.	Nos.	**29.00**			
Subtotal for Bill No.01		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 02: REFURBISHMENT OF EXISTING SERVICE RESERVIORS	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2	**REFURBISHMENT OF EXISTING SERVICE RESERVIORS**					
2.1	**Refurbishment of existing GLSR t**hrough repair of plaster, flooring, roof, masonry; replacement of ladders, painting etc. complete job as directed by Engineer in charge.					
	GLSR - Ramshila Hills (0.20ML) - 1 Nos.					
	GLSR - Murli Hills (1.63ML) - 1 Nos.					
	GLSR - Brahmyoni Hills 1 (a) (1.86 ML) - 1 Nos.					
	GLSR - Brahmyoni Hills 1 (b) (1.86 ML) - 1 Nos.					
	GLSR - Brahmyoni Hills 2 (3.60 ML) - 1 Nos.					
	GLSR - Brahmyoni Hills 3 (3.60 ML) - 1 Nos.					
	GLSR – Sringsthan (4.54 ML) - 1 No.					
2.1.1	Demolishing **stone rubble masonry** manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 meters lead	cum	**66.25**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.2	Dismantling **old plaster** or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50metres lead.	sqm	**7997.68**			
2.1.3	Demolishing **cement concrete** manually/ by mechanical means including disposal of material within 50 meters lead	cum	**60.79**			
2.1.4	Demolishing **R.C.C. work** manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 meters lead	cum	**163.66**			
2.1.5	Demolishing **brick work** including stacking of serviceable material and disposal of unserviceable material within 50 meters lead.	cum	**34.52**			
2.1.6	Removing mortar from bricks and cleaning bricks including stacking within a lead of 50m (stacks of cleaned bricks shall be measured). From brick work in cement mortar	cum	**34.32**			
2.1.7	Dismantling **G.I. pipes** including excavation and refilling trenches after taking out the pipes , breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes , lead at site within 50 meters lead. **Up to 150 mm diameter**	m	**22.60**			
2.1.8	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material within 50 meters lead.					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.8.1	Up to 150 mm diameter	m	**157.50**			
2.18.2	Above 150 mm dia up to 300 mm dia	m	**114.80**			
2.1.8.3	Above 300 mm diameter	m	**143.60**			
2.1.9	Dismantling of **C.I. sluice valve** including stacking of useful materials within a lead of 50 meters.					
2.1.9.1	Up to 150 mm dia.	Nos.	**7**			
2.1.9.2	Above 150 mm diameter	Nos	**20**			
2.1.10	Dismantling of damaged valve chamber including R.C.C. top slab, C.I. cover with frame, including stacking of useful materials near the site and disposal of unserviceable materials into municipal dumps within 50 m lead	each	**9**			
2.1.11	Dismantling **steel work** in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 meters lead.	kg	**868.65**			
2.1.12	**Clearing and grubbing road land** including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 meters including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Hectare	**0.60**			
2.1.13	**Earth work in excavation** over areas (exceeding 30 cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth , lead up to 50 m and lift up to 1.5 m; disposed earth to be levelled and neatly dressed.					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.13.1	All Kinds of soil	cum	**150.80**			
2.1.13.2	Hard rock (blasting prohibited)	cum	**33.57**			
2.1.14	**Back filling** behind abutment, wing wall and return wall complete as per drawing and Technical Specification	cum	**100.80**			
2.1.15	Providing and fixing double **scaffolding system** (cup lock type) on the exterior side of building/structure, upto25 meter height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 meter center to center, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining item a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc., wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge.	sqm	**11037.49**			
2.1.16	Raising manhole cover and frame slab to required level including dismantling existing slab and making good the damage as required including Raising depth of valve chamber :	each	**7**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.17	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, and reinforcement : 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). All work up to plinth level:	cum	**170.81**			
2.1.18	Centering and shuttering including strutting, propping etc. and removal or form work for foundations, footings, bases, columns etc. for mass concrete.	sqm	**1211.82**			
2.1.19	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level; 1:2:4 (1 Cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size)	cum	**111.08**			
2.1.20	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.	KG	**13964.46**			
2.1.21	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level. 1:1:2 (1 cement: 1 coarse sand:2 graded stone aggregate 20 mm nominal size)	cum	**443.49**			
2.1.22	Random rubble masonry with hard stone in foundation and plinth including leveling up with cement concrete 1:6:12 (1 cement: 6 coarse sand: 12 graded stone aggregate 20 mm nominal size) at plinth level with Cement mortar 1:6 (1 cement: 6 coarse sand)	cum	**172.21**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.23	62 mm thick cement concrete flooring with concrete hardener topping, under layer 50 mm thick cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) and top layer 12mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix: 2 graded stone aggregate, 6mm nominal size) by volume, hardening compound mixed @ 2 liter per 50 kg of cement or as per manufacture's specifications. This includes cost of cement slurry, etc. complete.	sqm	**1440.75**			
2.1.24	Sealing of cracks/ porous concrete with following by injection process through nipples including cost of material and labour complete as per drawing and technical specification complete. Cement grout as per clause 2800 & 2806 of MoRT&H specification;	Kg	**3400**			
2.1.25	Constructing masonry Chamber in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including necessary excavation, RCC foundation over cement concrete 1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size) as per drawing and 12mm inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design With common burnt clay F.P.S.(non-modular) bricks of class designation 100A all complete as per drawing, technical specification and direction of Engineer-In- Charge.					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.25.1	900x1000x1400 mm size valve chamber suitable for 100 - 200 mm dia Valves	Each	**6**			
2.1.25.2	1550x1500x1750 mm size valve chamber suitable for 350-450 mm dia Valves	Each	**18**			
2.1.25.3	1650x1700x1900 mm size valve chamber suitable for 500-600 mm dia Valves:	Each	**6**			
2.1.26	Providing and fixing C.I. **sluice valves** (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) :					
	150 mm	Nos.	**6**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.27	Providing, fixing in position, hydraulic testing and commissioning of DI D/F Resilient seated vacuum tight butterfly valve suitable for bi directional flow with body and disc made of DI GGG40. Disk shall conform to double eccentric with specially designed (Dove tail Shape) pressure supported sealing system made of EPDM approved by DVGW Clause W270. The body seat shall be fusion bonded nickel chromium weld overlay and micro finished. Closed disk eye with dry shaft design made of Stainless steel with 13% chromium of grade 1.4021 connected with maintenance free bearing of bronze with double O-ring sealing of EPDM. The shaft shall be connected to the disc by riveted pin or taper pin with lock. The Valve shall be compatible for buried application without chamber. The coating and the rubber parts shall comply with DVGW and KTW standards. The gearbox shall be with self-locking, fully enclosed, maintenance-free lubricated for life, worm gear including mechanical position indicator. The Valve shall be according to EN593/IS 5163, the face-to-face length shall be EN 588-1, basic series 14/BS 5155(Long Body)/ IS13095 (Long Body) and drilling according to EN 1092-2/IS 6418. Epoxy powder or liquid epoxy coating with minimum thickness of 250 micron applied inside and outside of both body and disc. (EP-P) it is a resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200 degree C). Including cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
2.1.27.1	450 mm	Nos.	**6**			
2.1.27.2	600 mm	Nos.	**6**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.28	Providing and laying double flanged (screwed / welded) centrifugally (Spun) Cast Iron, Class B (IS : 1536) :					
	150 mm dia DI. Double Flanged Pipe	m	**121.70**			
2.1.29	Providing, lowering, laying in position, aligning, fixing in position and jointing **CI dismantling joint** (suitable for sluice valves etc.) as per IS specifications complete of the following sizes including all jointing material, cost of all labour, hydraulic testing and commissioning as per Technical Specifications including the cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
2.1.29.1	150 mm	Nos	**6**			
2.1.29.2	450 mm	Nos	**6**			
2.1.29.3	600 mm	nos	**6**			
2.1.30	**12 mm cement plaster 1:3** (1 cement: 3 coarse sand) finished with a floating coat of neat cement and providing and mixing water proofing material in proportion recommended by the manufacturers:	sqm	**9474.96**			
2.1.31	**Satna lime wash** onwards one coat complete and as per direction of Engineer in charge.	sqm	**1889.97**			
2.1.32	Colour washing such as green, blue or buff to give an even shade new work (two or more coats). New work (two or more coats) with a base coat of white washing	sqm	**5541.32**			
2.1.33	Finishing walls with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade, New work (three or more coats)	sqm	**267.25**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.34	Finishing with epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface, etc. complete					
2.1.34.1	On concrete work	sqm	**5211.97**			
2.1.34.2	On steel work	sqm	**39.59**			
2.1.35	Providing and fixing G.I. pipes hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. G.I pipes 40 mm nominal bore (class B)	kg	**7214.68**			
2.1.36	Providing and fixing hand rail by welding etc. to steel ladder railings & staircases railing including applying a priming coat of approved steel primer In gratings, frames, guard bar, ladders, railings, brackets gates & similar works.	Kg	**99.66**			
2.1.37	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	**1097.42**			
2.1.38	Providing, fabricating and erecting MS ladder of 450mm wide made of 65 x 65 x 6mm angle iron and 20mm MS bars for walkway to top of the OHSR including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer complete in all respect as per specifications and the direction of the Engineer.	m	**18.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.1.39	Providing and fixing in position lightening arrester set complete with 600mm x 600mm x 6mm thick G.I. Earthing plate embedded below ground in earthling pit at 3.5 meter depth, G.I. strip of size 25mmx5mm thick from earthing plate to top of overhead tank, G.I. finial made of GI bar 25mm dia and 2m long fixed on top of OH tank and connected to GI strip. The earthling set shall comply of IS: 3043 complete in all respect as per specification and the direction of the Engineer.	set	**6**			
2.1.40	Providing, installing, testing and commission of **Ultrasonic Level sensor** with level window in the electrical panel for showing water level.	Each	**6**			
2.1.41	Supply, installation, testing and commissioning of Electromagnetic Flow Meter etc. including all materials and making connection with existing pipeline required for Electromagnetic Flow Meter including cutting the existing pipe line etc. complete in all respect as per technical specification and as per direction of Engineer. **Size : 450mm**	Each	**12**			
2.1.42	Making arrangement for water tightness test of R.C.C. reservoir conforming to the provisions laid down in IS-3370 (part I) 1965 until satisfactory completion of water tightness test, by filling with water up to top water level (TWL) as shown in the drawing and as per direction of Engineer.In.Charge. including the arrangement of water, its carriage & lifting by necessary pipes, fittings and pumping machinery etc. all required for the purpose and testing after rectification leaks found in the reservoir.	ml	**12.75**			
2.1.43	Disinfection & washing the tank and pipe connections including cleaning the inside of the tank etc. complete.	Job	**6**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.2	**Refurbishment of Existing ELSR t**hrough repair of plaster, flooring, roof, masonry; replacement of ladders, painting etc. complete job as directed by Engineer in charge.					
	ELSR - Azad Park (0.45ML)					
2.2.1	Scaffolding System					
	Providing and fixing scaffolding system (cup lock type) on the exterior side of building/structure, up to 25 meter height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 meter center to center, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc., wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge. Note: - (1) The elevation area of the scaffolding shall be measured for payment purpose. (2) The payment will be made once only for execution of all items for such works.	sqm	**1418.43**			
2.2.2	Dismantling old plaster/concrete or skirting, raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 meters lead.	sqm	**1957.21**			
2.2.3	62 mm thick cement concrete flooring with concrete hardener topping, under layer 50 mm thick cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded	sqm	**113.10**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	stone aggregate 20mm nominal size) and top layer 12mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix: 2 graded stone aggregate, 6mm nominal size) by volume, hardening compound mixed @ 2 liter per 50 kg of cement or as per manufacture's specifications. This includes cost of cement slurry, cement hardener etc. complete.					
2.2.4	20 mm thick cement plaster in coarse sand in 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement Including providing and mixing water proofing material in proportion recommended by the manufacturers.	sqm	**1759.29**			
2.2.5	Finishing with epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface, etc. complete	sqm	**414.69**			
2.2.6	Sealing of cracks/ porous concrete followed by injection process through nipples including cost of material and labour complete as per drawing and technical specification complete. Cement grout as per clause 2800 & 2806 of MoRT&H specification.	Kg	**400.00**			
2.2.7	Finishing walls with textured exterior paint of required shade: New work (two or more coats applied @ 3.28 liter/ 10 sqm) over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm.	sqm	**1344.60**			
2.2.8	Providing and fixing C.I. **sluice valves** (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) :					
2.2.8.1	150 mm	Nos.	**1**			
2.2.8.2	250 mm	Nos.	**1**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.2.9	Providing, fixing in position, hydraulic testing and commissioning of DI D/F Resilient Seated Vacuum tight butterfly valve suitable for bi directional flow with body and disc made of DI GGG40. Disk shall conform to double eccentric with specially designed (Dove tail shape) pressure supported sealing system made of EPDM approved by DVGW Clause W270. The body seat shall be fusion bonded nickel chromium weld overlay and micro finished. Closed disk eye with dry shaft design made of stainless steel with 13% chromium of grade 1.4021 connected with maintenance free bearing of Bronze with double O-ring sealing of EPDM. The shaft shall be connected to the disc by riveted pin or taper pin with lock. The valve shall be compatible for buried application without chamber. The coating and the rubber parts shall comply with DVGW and KTW standards. The gearbox shall be with self-locking, fully enclosed, maintenance-free lubricated for life worm gear including mechanical position indicator. The valve shall be according to EN593/IS 5163, the face-to-face length shall be EN 588-1, basic series 14/BS 5155(Long Body)/ IS13095 (Long Body) and drilling according to EN 1092-2/IS 6418. epoxy powder or liquid epoxy coating with minimum thickness of 250 micron applied inside and outside of both body and disc. (EP-P it is a resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200 deg C). including cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
	450 mm	Nos.	**1**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.2.10	Providing, lowering, laying in position, aligning, fixing in position and jointing **CI dismantling joint** (suitable for sluice valves etc.) as per IS specifications complete of the following sizes including all jointing material, cost of all labour, hydraulic testing and commissioning as per Technical Specifications including the cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
2.2.10.1	150 mm	Nos.	**1**			
2.2.10.2	250 mm	Nos.	**1**			
2.2.10.3	450 mm	Nos.	**1**			
2.2.11	Constructing masonry chamber in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including necessary excavation, RCC foundation over cement concrete 1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size) as per drawing and 12 mm inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design with common burnt clay F.P.S.(non-modular) bricks of class designation 100A all complete as per drawing, technical specification and direction of Engineer-In- Charge.					
2.2.11.1	900x1000x1400 mm size valve chamber suitable for 100 - 200 mm dia Valves	Nos.	**1**			
2.2.11.2	1000x1200x1500 mm size valve chamber suitable for 250-300 mm dia Valves	Nos.	**1**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.2.11.3	1550x1500x1750 mm size valve chamber suitable for 350-450 mm dia Valves	Nos.	**3**			
2.2.12	Providing, fabricating and erecting **MS ladder 450mm** wide made of 65 x 65 x 6mm angle iron and 20mm MS bars from walkway to top of the OHSR including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer complete in all respect as per specifications and the direction of the Engineer.	m	**5.00**			
2.2.13	Providing and fixing in position **lightening arrester** set complete with 600mm x 600mm x 6mm thick G.I. earthing plate embedded below ground in earthling pit at 3.5 meter depth, G.I. strip of size 25mmx5mm thick from earthing plate to top of overhead tank, G.I. Finial made of GI bar 25mm dia and 2m long fixed on top of OH tank and connected to GI strip. The earthling set shall comply of IS: 3043 complete in all respect as per specification and the direction of the Engineer.	set	**1**			
2.2.14	Providing, installing, testing and commission of **Ultrasonic Level sensor** with level window in the electrical panel for showing water level.	Each	**1**			
2.2.15	Supply, installation, testing and commissioning of Electromagnetic Flow Meter etc. including all materials and making connection with existing pipeline required for Electromagnetic Flow Meter including cutting the existing pipe line etc. complete in all respect as per technical specification and as per direction of Engineer. Size : 450mm	Each	**2**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
2.2.16	Making arrangement for water tightness test of R.C.C. reservoir conforming to the provisions laid down in IS-3370 (part I) 1965 until satisfactory completion of water tightness test, by filling with water up to top water level (TWL) as shown in the drawing and as per direction of Engineer In Charge including the arrangement of water, its carriage & lifting by necessary pipes, fittings and pumping machinery etc. all required for the purpose and testing after rectification leaks found in the reservoir.	ml	**0.50**			
2.2.17	Disinfection & washing the tank and pipe connections including cleaning the inside of the tank etc. complete.	Job	**1**			
Subtotal for Bill No. 02		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	

Bill No. 03: REFURBISHMENT OF EXISTING PUMP HOUSES & SITE STORES

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
3	**REFURBISHMENT OF EXISTING PUMP HOUSES & SITE STORES**					
3.1	**Refurbishment of Pump House** on TWs through repair of plaster, flooring, roof, masonry; replacement of doors and windows, painting etc. complete job as directed by Engineer in charge.					
	Khadi Gramodyog-Lakhibagh - 1 No.					
	Dandibag-type ll - 1 No.					
	Dandibag-type lll (5 nos.)					
	Bypass - 1 No.					
	Dhobia Ghat - 1 No.					
	Panchayati Akhara - 1 No.					
	New Godam - 1 No.					
	Pilgrim Hospital - 1 No.					
	Bairagi Powerganj - 1 No.					
	Bageshwari Pachim - 1 No.					
	kauvasthan - 1 No.					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Cotton mill - 1 No.					
3.1.1	Dismantling **old plaster** or skirting, raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	sqm	**1974.94**			
3.1.2	Disposal of garbage with disposal by tractor up to 8 Km etc. complete and as per direction of Engineer in charge.	Cum	**23.70**			
3.1.3	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sqm and under including cutting the patch in proper shape and preparing and plastering the surface of the walls complete including disposal of rubbish to the dumping ground within 50 meters lead. with cement mortar 1:4(1 cement:4 coarse sand)	sqm	**1974.94**			
3.1.4	Painting with oil bound washable distemper of approved brand and manufacture to give an even shade .New work (two or more coats) over and including priming coat with cement primer.	sqm	**1974.94**			
3.1.5	Providing and fixing steel glazed doors, windows and ventilators of standard rolled steel sections, joints mitered and welded with 15x3 mm lugs 10 cm long with steel lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal-sash putty of approved make complete including applying a priming coat of approved steel primer; including the cost of metal beading and other fitting and necessary hinges or pivots as required.	sqm	**13.32**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
3.1.6	Painting					
	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface, etc. complete	sqm	**26.64**			
3.1.7	Providing designation 100 B one brick on edge soling joints filled with local sand including cost of watering, taxes, royalty all complete as per building specification and direction of E/l,	sqm	**192.28**			
3.1.8	Cement concrete flooring 1:2:4 (1 cement:2 coarse:sand:4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, etc. but including the cost of nosing of steps etc. complete : 40 mm thick with 20 mm nominal size stone aggregate	sqm	**192.28**			
3.1.9	Providing RS joist ISMB 200 on top of the pump house etc., complete and as per direction of Engineer in charge.	qtl	**4.09**			
3.1.10	Reinforced cement concrete work in walls (any thickness), including attached plasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, and reinforcement : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	**1.84**			
3.1.11	Centering and shuttering including strutting, propping etc. and removal of form for: Suspended floors, roofs, landings, balconies and access platform:	sqm	**14.36**			
3.1.12	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.	kg	**144.18**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
3.2	**Refurbishment of Site Store** through repair of plaster, flooring, roof, masonry; replacement of doors and windows, painting etc. complete job as directed by Engineer in charge. **Site Stores at Dandibagh campus.**					
	Size: 18.9x9.8 m					
	Size: 18.4x12.2 m					
	Size: 12.5x8.9 m					
3.2.1	Dismantling **old plaster/concrete** or skirting, raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50metres lead.	sqm	**828.21**			
3.2.2	Disposal of garbage with disposal by tractor up to 8 Km etc. complete and as per direction of Engineer in charge.	cum	**9.94**			
3.2.3	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sqm and under including cutting the patch in proper shape and preparing and plastering the surface of the walls complete including disposal of rubbish to the dumping ground within 50 meters lead: with cement mortar 1:4(1 cement:4 coarse sand)	sqm	**828.21**			
3.2.4	Painting with oil bound washable distemper of approved brand and manufacture to give an even shade new work (two or more coats) over and including priming coat with cement primer.	sqm	**828.21**			
3.2.5	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer using flats 30x6 mm for diagonal braces and central cross piece.	sqm	**32.04**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
3.2.6	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. on steel work.	sqm	**42.72**			
3.2.7	Providing designation 100B one brick on edge soling joints filled with local sand including cost of watering, taxes, royalty all complete as per building specification and direction of Engineer in charge.	sqm	**562.20**			
3.2.8	Cement concrete flooring 1:2:4 (1 cement:2 coarse:sand:4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, etc. complete : 40 mm thick with 20 mm nominal size stone aggregate	sqm	**562.20**			
3.2.9	Providing corrugated G.S. sheet roofing fixed with G.I. J. hooks, bolts and nuts 8 mm diameter with bitumen and G. I. limpet washers or with G.I. limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on over lapping of sheets complete (up to a pitch of 60°) including the cost or purlins, rafters and trusses.: 1.00 mm thick with zinc coating not less than 275 gm /sqm.	sqm	**590.82**			
Subtotal for Bill No. 03		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	

Bill No. 04: DEMOLISHING OF DELAPITATED PUMP HOUSE & CONSTRUCTION OF NEW PUMP HOUSE

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
4	**DEMOLISHING OF DILAPILATATED PUMP HOUSE & CONSTRUCTION OF NEW PUMP HOUSE**					
4.1	**DEMOLISHING OF EXISTING PUMP HOUSE**					
	Demolishing of existing pump house buildings with in the lead of 8 Kms. etc. complete as directed by Engineer in charge.					
	Central School ID 10 - 1No.					
	Gurdwara ID 12- 1No.					
	Delha ID 16- 1No.					
	Janta Colony-1 ID 18- 1No.					
	HataGodam ID 27- 1No.					
4.1.1	Demolishing R.C.C. work including stacking of steel bars and disposal of unserviceable material within 50 meters lead:	cum	**52.74**			
4.1.2	Demolishing brick work including stacking of serviceable material and disposal of unserviceable material within 50 meters lead	cum	**12.80**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
4.1.3	Dismantling doors & windows and clerestory windows (steel or wood) shutters including chowkhats, architrave, holdfasts etc. complete and stacking within 50 meters lead:					
4.1.3.1	Of area 3 sqm and below	Each	**11.40**			
4.1.3.2	Of area beyond 3 sqm	Each	**5.16**			
4.1.4	Disposal of garbage with disposal by tractor up to 8 Km etc. complete and as per direction of Engineer in charge.	cum	**65.54**			
4.2	**CONSTRUCTION OF NEW PUMP HOUSE CUM CHLORONOME**					
	Construction of N**ew Pump House** over the TWs suitable for installation of pump set, installation of flow meter, electro-chlorinator, electrical switch gear etc. complete. (sizes 3.65 m x 3.0 m x 4.0 m) **[Construction of New Pump House cum chlorine room in place of demolished: 5 Nos. & Construction of New Pump House cum chlorine room where no existing building at present: 4 Nos.]**					
	Central School ID 10 - 1No.					
	Gurdwara ID 12- 1No.					
	Delha ID 16- 1No.					
	Janta Colony 1 ID 18- 1No.					
	Hata Godam ID 27- 1No.					
	Dandibagh (4 Nos.)					
4.2.1	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil	cum	**365.83**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	as directed, within a lead of 50 m.					
4.2.2	Supplying and filling in plinth with local sand					
	Supplying and filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	cum	**98.97**			
4.2.3	Backfilling of soil with approved excavated soil					
	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering.	cum	**207.53**			
4.2.4	Removal of unserviceable soil					
	Removal of unserviceable soil with disposal up to 8 Km etc. complete and as per direction of Engineer in charge.	cum	**158.30**			
4.2.5	Damp Proof Course					
	Providing and laying damp-proof course 50 mm thick with cement concrete 1:2:4 (1cement :2 coarse sand :4 graded stone aggregate 20mm nominal size)	sqm	**47.07**			
4.2.6	Brick work with bricks of class designation 100A in foundations and plinth in cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth.	cum	**155.95**			
	Brick work with bricks of class designation 100A in foundations and plinth in cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth. Extra for brick work in superstructure above plinth level up to floor 5th level.	cum	**176.38**			
4.2.7	**Centering and shuttering** including strutting, propping etc. and removal of form for:					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
4.2.7.1	Foundations, footings, bases of columns etc. for mass concrete.	sqm	**48.76**			
4.2.7.2	Suspended floors, roofs, landings, balconies and access platform.	sqm	**401.31**			
4.2.7.3	Lintels, beams, plinth beams, girders, resumes and cantilevers.	sqm	**74.77**			
4.2.7.4	Side walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	sqm	**1068.55**			
4.2.8	PCC in M 15					
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level; 1:2:4 (1 Cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size)	cum	**30.02**			
4.2.9	Concrete Work					
	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached plasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor, etc., up to floor five level, excluding the cost of centering, shuttering: 1:1.5:3 (1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	cum	**31.94**			
4.2.10	Thermo-Mechanically Treated bars					
	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.	kg	**3174.22**			
4.2.11	RCC Work					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, and reinforcement : 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size)	cum	**47.02**			
4.2.12	Cement Plaster					
	12 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of near cement and providing and mixing water proofing material in proportion recommended by the manufacturers:	sqm	**1354.15**			
4.2.13	Finishing with oil bound washable distemper of approved brand and manufacture to give an even shade new work (two or more coats) over and including priming coat with cement primer.	sqm	**625.67**			
4.2.14	Finishing walls with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade new work (three or more coats)	sqm	**728.48**			
4.2.15	Shutters, Doors, Windows and Ventilators					
4.2.15.1	Rolling shutters and its parts. Rolling shutter made of 80X1.25mm machine rolled laths	sqm	**22.68**			
4.2.15.2	Rolling shutters and its parts Top cover for rolling shutters	m	**10.80**			
4.2.15.3	Rolling shutters and its parts - 27.5cm long wire spring grade No 2 for rolling shutters.	each	**18.00**			
4.2.15.4	Rolling shutters and its parts ball bearing for rolling shutters	each	**9.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
4.2.16	Providing and fixing steel **glazed doors/gate**, windows and ventilators of standard rolled steel sections, joints mitered and welded with 15x3 mm lugs 10 cm long with steel lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal-sash putty of approved make complete including applying a priming coat of approved steel primer ;including the cost of metal beading and other fitting and necessary hinges or pivots as required.	sqm	**60.03**			
4.2.17	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface, etc. complete	sqm	**413.55**			
4.2.18	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : 20 to 25 mm thick	sqm	**185.91**			
4.2.19	Providing and laying brick tiles of class designation 100 over roof grouted with cement mortar 1:3 (1 cement:3 coarse sand) mixed with 2% if integral water proofing compound by weight of cement, over a 12 mm layer of cement mortar 1:3 (1 cement:3 fine sand) and finished neat. With F.P. brick tiles	sqm	**269.76**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
4.2.20	Providing and fixing on wall face un-plasticized-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS :4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion. 110 mm diameter.	m	**108.00**			
4.2.21	Internal lighting for pump rooms - switch 3 Nos, 6 Amps, 3 pin board 1 No, metallic switch box 1 No, 4 sqm cable 30 m, 32 Amps fuse unit, CFL 36 W bulb 2 Nos, Tube light with Luminaries 2 No, Bulkhead fitting with tube light for outside the pump room complete for one pump room with conduit wiring, required fittings as per specification and Engineers requirement.	Nos.	**9**			
4.2.22	Providing RS joist ISMB 200 on top of the pump house etc., complete and as per direction of Engineer in charge.	Qtl.	**9.40**			
Subtotal for Bill No. 04		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 05: TRANSMISSION/RISING MAINS, VALVES, SPECIALS AND APPURTENANCES ETC.	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
5	**TRANSMISSION/RISING MAINS, VALVES, SPECIALS AND APPURTENANCES ETC.**					
5.1	**Dismantling**					
5.1.1	**Dismantling of flexible pavements** and disposal of dismantled materials up to a lead of 1000 meters). Bituminous course (by mechanical means)	cum	**800.00**			
5.1.2	**Dismantling of cement concrete pavement** by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 meters.	cum	**1088.00**			
5.2	**Excavation in Ordinary Soil**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					
5.2.1	0m - 1.5m	cum	**15915.00**			
5.2.2	1.5m - 3.0m	cum	**0.00**			
5.3	**Excavation in Rock (blasting prohibited)**					
	Excavation work in foundation trenches including extra excavation for socket portion but not exceeding 1.5 m in width including dressing of sides and ramming of bottoms lift up to 1,5m, including getting cut the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50 m. Hard rock (Blasting Prohibited)					
5.3.1	**Ordinary Rock (Blasting Prohibited)**					
	0m - 1.5m	cum	**858.85**			
5.3.2	**Hard Rock (Blasting Prohibited)**					
	0m - 1.5m	cum	**2576.55**			
5.4	Open timbering in trenches including **strutting and shoring** complete (Measurements to be taken of the face area timbered). Depth not exceeding 1.5 m.	sqm	**220.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
5.5	Providing sal ballah barricading with departmental sal ballah average 150 dia. And 2M long sal ballah post at interval of 2.5 M C/C fixed 0.5 M average below ground, packed with earth and brick bats, well-watered and rammed with three rows of average 100mm dia. Sal ballah horizontal runners fixed with iron spikes and wires, white washing one coat to exposed surface, dismantling the barricade after function, filling the holes, including carriage of sal ballah from and to godowns up to 5K.M. lead, stacking them in countable stacks in godowns including cost of all labour and materials and taxes all complete job as per specification and direction of E/I.	m	**4138.06**			
5.6	**Backfilling of soil with approved excavated soil**					
	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	**10653.00**			
5.7	**Removal of unserviceable soil**					
	Removal of unserviceable soil with disposal up to 8 Km etc. complete and as per direction of Engineer in charge.	cum	**6367.00**			
5.8	**Ductile Iron (DI) K-9 Pipes - for Rising Main System**					
	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS: 8329: including disinfecting DI. water mains by flushing with water containing bleaching powder @ 0.5 gms per liter of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory. Ductile Iron Class K-9 pipes					
5.8.1	100 mm	m	**1755.54**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
5.8.2	150 mm	m	**3592.89**			
5.8.3	200 mm	m	**4606.92**			
5.8.4	250 mm	m	**1379.00**			
5.8.5	300 mm	m	**468.96**			
5.8.6	350 mm	m	**4622.94**			
5.8.7	400 mm	m	**126.00**			
5.9	Pedestal for pipe support as per drawing & specification.					
5.9.1	**Centering and shuttering** including strutting, propping etc. and removal of form for: Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	**768.00**			
5.9.2	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.	kg	**6782.40**			
5.9.3	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, and reinforcement : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	**86.40**			
	Specials required for proposed pipes					
5.10	Ductile Iron K - 12 specials suitable for push on jointing including Laying in position S&S or flanged DI. special such as tees, bends, collars, tapers and caps etc including cost of specials up to 600 mm dia	Qtl	**301.62**			
5.11	**VALVES, SPECIALS AND APPURTENANCES:**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Providing, lowering, laying in position, aligning, of single chamber, **double orifice DI air valve** with Triple function (venting, admitting and venting during operation), Tamper proof in one piece construction (both large and small orifice housed in the housing itself), with capacity to handle air up to sonic velocity (300 m/s), with flange dimension according to EN 1092-2/ IS 1538. Body and cover in ductile cast iron of grade GGG 40. All internal parts such as float, shell etc. & all cover bolts of austenitic alloy steel and DN 50 float of HOSTAFLON and gaskets and seals of EPDM approved for anti-bacterial which is mandatory for drinking water, with electrostatic epoxy powder coating (EP-P) inside and outside color blue RAL 5005 with minimum coating thickness of 250 microns. The EPDM rubber & Epoxy Powder should be approved by W 270. (EP-P it is a resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200 deg C)., etc. complete.					
5.11.1	80 mm	Nos.	**20**			
5.11.2	100 mm	Nos.	**22**			
5.12	Providing and fixing C.I. **sluice valves** (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) :					
5.12.1	100 mm	each	**5**			
5.12.2	150 mm	each	**10**			
5.12.3	200 mm	each	**11**			
5.12.4	250 mm	each	**4**			
5.12.5	300 mm	each				

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
5.13	Providing, fixing in position, hydraulic testing and commissioning of DI D/F resilient seated vacuum tight **Butterfly Valve** suitable for bi-directional flow with body and disc made of DI GGG40. Disk shall conform to double eccentric with specially designed (Dove tail Shape) pressure supported sealing system made of EPDM approved by DVGW Clause W270. The body seat shall be fusion bonded nickel chromium weld overlay and micro finished. Closed disk eye with dry shaft design made of stainless steel with 13% chromium of grade 1.4021 connected with maintenance free bearing of bronze with double O-ring sealing of EPDM. The shaft shall be connected to the disc by riveted pin or taper pin with lock. The valve shall be compatible for buried application without chamber. The coating and the rubber parts shall comply with DVGW and KTW standards. The gearbox shall be with self-locking, fully enclosed, maintenance-free lubricated for life, worm gear including mechanical position indicator. The valve shall be according to EN593/IS 5163, the face-to-face length shall be EN 588-1, basic series 14/BS 5155(Long Body)/ IS13095 (Long Body) and drilling according to EN 1092-2/IS 6418. Epoxy powder or liquid epoxy coating with minimum thickness of 250 micron applied inside and outside of both body and disc. (EP-P it is a resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200 deg C). Including cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
5.13.1	350 mm	Nos.	**4**			
5.13.2	400 mm	Nos.	**2**			
5.13.3	500 mm	Nos.	**2**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
5.14	Providing, lowering, laying in position, aligning, fixing in position and jointing **CI dismantling joint** (suitable for sluice valves etc.) as per IS specifications complete of the following sizes including all jointing material, cost of all labour, hydraulic testing and commissioning as per Technical Specifications including the cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
5.14.1	80 mm	Nos.	**20**			
5.14.2	100 mm	Nos.	**27**			
5.14.3	150 mm	Nos.	**10**			
5.14.4	200 mm	Nos.	**11**			
5.14.5	250 mm	Nos.	**4**			
5.14.6	300 mm	Nos.	**2**			
5.14.7	350 mm	Nos.	**4**			
5.14.8	400 mm	Nos.	**2**			
5.14.9	450 mm	Nos.	**2.**			
5.14.10	500 mm	Nos.	**0**			
5.14.11	600 mm	Nos.	**0**			
5.15	**Pipe required for valves connections**					
	Providing, laying in position, jointing, hydraulic testing and commissioning of **Double Flanged** (Screwed/Welded) Centrifugally (Spun) **Ductile Iron Pipes of Class K - 9** conforming to IS : 8329 : including cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
5.15.1	100 mm	m	**40.00**			
5.15.2	150 mm	m	**184.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
5.15.3	200 mm	m	**190.00**			
5.15.4	250 mm	m	**25.00**			
5.15.5	300 mm	m	**20.00**			
5.15.6	350 mm	m	**15.00**			
5.15.7	400 mm	m	**20.00**			
5.15.8	450 mm	m	**10.00**			
5.15.9	500 mm	m	**10.00**			
5.15.10	600 mm	m	**10.00**			
5.16	Constructing M**asonry Chamber** in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including necessary excavation, RCC foundation over cement concrete 1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size) as per drawing and 12 mm inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design With common burnt clay F.P.S. (non-modular) bricks of class designation 100A all complete as per drawing, technical specification and direction of Engineer-In- Charge.					
5.16.1	900x1000x1400 mm size valve chamber suitable for 100-200 mm dia Valves	Nos.	**68**			
5.16.2	1000x1200x1500 mm size valve chamber suitable for 250-300 mm dia Valves	Nos.	**6**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
5.16.3	1550x1500x1750 mm size valve chamber suitable for 350-450 mm dia Valves	Nos.	**6**			
5.16.4	1650x1700x1900 mm size valve chamber suitable for 500-600 mm dia Valves:	Nos.	**2**			
Subtotal for Bill No.05		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 06: DISTRIBUTION NETWORK, VALVES, SPECIALS AND APPURTENANCES ETC.	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6	**DISTRIBUTION NETWORK, VALVES, SPECIALS AND APPURTENANCES ETC.**					
6.1	**Dismantling**					
6.1.1	**Dismantling of flexible pavements** (Dismantling of flexible pavements and disposal of dismantled materials up to a lead of 1000 meters). Bituminous course (by mechanical means)	cum	**20783.00**			
6.1.2	**Dismantling of cement concrete pavement** (Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 meters.	cum	**28265.00**			
6.2	**Excavation in Ordinary Soil**					
	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.2.1	0m - 1.5m	cum	**372111.00**			
6.2.2	1.5m - 3.0m	cum	**236.00**			
6.3	**Excavation in Rock (blasting prohibited)**					
	Excavation work in foundation trenches including extra excavation for socket portion but not exceeding 1.5 m in width including dressing of sides and ramming of bottoms lift up to 1.5m, including getting cut the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50 m.					
6.3.1	**Ordinary Rock**					
6.3.1.1	0m - 1.5m	cum	**462.78**			
6.3.1.2	1.5m - 3.0m	cum	**362.61**			
6.3.2	**Hard rock (Blasting Prohibited)**					
6.3.2.1	0m - 1.5m	cum	**462.78**			
6.3.2.2	1.5m - 3.0m	cum	**362.61**			
6.4	Open timbering in trenches including **strutting and shoring** complete (Measurements to be taken of the face area timbered).					
6.4.1	Depth not exceeding 1.5 m.	sqm	**1380.00**			
6.4.2	Depth exceeding 1.5 m but not exceeding 3 m	sqm	**1380.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.5	Providing sal ballah barricading with departmental sal ballah average 150 dia. And 2M long sal ballah post at interval of 2.5 M C/C fixed 0.5 M average below ground, packed with earth and Brick bats, well-watered and rammed with three rows of average 100mm dia. Sal ballah horizontal runners fixed with iron spikes and wires, white washing one coat to exposed surface, dismantling the barricade after function, filling the holes, including carriage of sal ballah from and to godowns up to 5K.M. lead, stacking them in countable stacks in godowns including cost of all labour and materials and taxes all complete job as per specification and direction of E/l.	m	**111769.00**			
6.6	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	**284540.00**			
6.7	**Removal of unserviceable** soil with disposal up to 8 Km etc. complete and as per direction of engineer in charge.	cum	**2510241.00**			
6.8	**Ductile Iron (DI) K-7 Pipes - for distribution System**					
	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS: 8329: including disinfecting DI. water mains by flushing with water containing bleaching powder @ 0.5 gms per liter of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory. Ductile Iron Class K-7 pipes					
6.8.1	150 mm	m	**62412.00**			
6.8.2	200 mm	m	**29677.00**			
6.8.3	250 mm	m	**18944.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.8.4	300 mm	m	**9156.00**			
6.8.5	350 mm	m	**6346.00**			
6.8.6	400 mm	m	**5102.00**			
6.8.7	450 mm	m	**5376.00**			
6.8.8	500 mm	m	**2251.00**			
6.8.9	600 mm	m	**4922.00**			
6.8.10	700 mm	m	**2166.00**			
6.9	**H.D.P.E. Pipes PE-100 grade & PN-6 - for distribution System**					
6.9.1	Providing, lowering, laying, aligning, fixing in position and jointing (with electro-fusion joints) at all level/ depths ISI marked HDPE pipes of PE-100 grade & PN-6 for potable water as per IS 4984 (amended up to date) in trenches in complete including all material, labour, testing and commissioning as per Technical Specifications and as directed by the Engineer in Charge including disinfecting HDPE water mains by flushing with water containing bleaching powder @ 0.5 gms per liter of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory.					
	110 mm	m	**301424.00**			
6.9.2	Providing, lowering, laying, aligning, fixing in position at and jointing at all level/ depths HDPE pipe **accessories/ fittings** of PE-100 grade & PN-6 for potable water as per IS 8360 for fabricated (amended up to date) within pipe line in trenches complete including all material, labour, testing and commissioning as per Technical Specifications and as per direction of Engineer.					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.9.2.1	110x110mm - Equal Tees	each	**2227**			
6.9.2.2	110mm - 90 degree Bends	each	**1657**			
6.9.2.3	110mm - End Caps	each	**935**			
6.9.2.4	110mm - Flanges (M.S. pipe)	Qtl	**111.00**			
6.10	**Specials required for proposed pipes**					
6.10.1	Ductile Iron K - 12 specials suitable for push on jointing including laying in position S&S or flanged DI. special such as tees, bends, collars, tapers and caps etc .including cost of specials up to 600 mm dia	Qtl	**2476.00**			
6.10.2	Ductile Iron K - 12 specials suitable for push on jointing including laying in position S&S or flanged DI. special such as tees, bends, collars, tapers and caps etc. including cost of specials above 600 mm dia	Qtl	**12.00**			
6.11	Sand filling in foundation trenches as per Drawing & Technical Specification. For 110 mm dia HDPE Pipe bedding & encasing	cum	**112384.00**			
6.12	Pedestal for pipe support as per drawing & specification.					
6.12.1	Centering and shuttering including strutting, propping etc. and removal of form for: Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	**768.00**			
6.12.2	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.	kg	**6782.00**			
6.12.3	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, and reinforcement : 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). All work up to plinth	cum	**86.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	level:					
6.13	**VALVES AND APPURTENANCES**					
	Providing and fixing C.I. **sluice valves** (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) :					
6.13.1	100 mm	each	**453**			
6.13.2	150 mm	each	**158**			
6.13.3	200 mm	each	**105**			
6.13.4	250 mm	each	**83.**			
6.13.5	300 mm	each	**37**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.14	Providing, fixing in position, hydraulic testing and commissioning of DI D/F resilient seated vacuum tight **Butterfly Valve** suitable for bi-directional flow with body and disc made of DI GGG40. Disk shall conform to double eccentric with specially designed (Dove tail Shape) pressure supported sealing system made of EPDM approved by DVGW Clause W270. The body seat shall be fusion bonded nickel chromium weld overlay and micro finished. Closed disk eye with dry shaft design made of stainless steel with 13% chromium of grade 1.4021 connected with maintenance free bearing of bronze with double O-ring sealing of EPDM. The shaft shall be connected to the disc by riveted pin or taper pin with lock. The Valve shall be compatible for buried application without chamber. The coating and the rubber parts shall comply with DVGW and KTW standards. The gearbox shall be with self-locking, fully enclosed, maintenance-free lubricated for life, worm gear including mechanical position indicator. The Valve shall be according to EN593/IS 5163, the face-to-face length shall be EN 588-1, basic series 14/BS 5155(Long Body)/ IS13095 (Long Body) and drilling according to EN 1092-2/IS 6418. Epoxy Powder or liquid Epoxy coating with minimum thickness of 250 micron applied inside and outside of both body and disc. (EP-P it is a resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200 deg C). Including cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
6.14.1	350 mm	Nos.	**3**			
6.14.2	400 mm	Nos.	**45**			
6.14.3	450 mm	Nos.	**9**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.14.4	500 mm	Nos.	**8**			
6.14.5	600 mm	Nos.	**1**			
6.14.6	700 mm	Nos.	**1**			
6.15	Providing, fixing in position, hydraulic testing and commissioning of DI D/F Diaphragm type own medium controlled **PRV valve** having visual position indicator with cast body of ductile iron grade GGG 40 / SG 400-12 as per IS 3896-part-2-1985 with integrated valve seat of Ni-Cr overlay welding and micro finished, customized control cylinder for linear control behavior, preformed diaphragm and pull-out safe profile sealing ring of EPDM, threaded inserts (CORFIX) to prevent the coating from coming off in the connections area as well as corrosion and incrustations in the control circuit. Pilot valve system having SS fittings as per Standard parts acc. DIN 2353 / EN ISO 8434, all external tubing parts of SS 1.4571, ball valves, pilot valve, speed control, High capacity transparent filter included, Tightness to DIN EN 12 266-1, leakage rate A. 2 pressure gauges for operator-friendly control to determine the actual inlet and outlet pressure connected directly to the valve. Flange connection dimensions according to EN 1092, Part 2, all parts (Epoxy coating, and diaphragm) in contact with medium are as per KTW and DVGW certified (harmless). The EPDM rubber & Epoxy coating (EP-P) should be approved by W270. (EP-P) it is a resin-coat powder approved for drinking water application, applied through fusion bonding process by dipping the shot-blasted casted components heated up to 200 deg C). Face to face dimensions as per EN558-1(up to DN250), and flange connections as per EN 1092-2/IS 5138. Electrostatic epoxy powder inside and outside minimum coating thickness of 250 microns.					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.15.1	350 mm	Nos.	**1.00**			
6.15.2	400 mm	Nos.	**1.00**			
6.15.3	450 mm	Nos.	**1.00**			
6.15.4	700 mm	Nos.	**4.00**			
6.16	Providing and fixing single headed **hydrant valves** with flanged inlet ISI marked with 63 mm female instantaneous outlet of gun metal complete with blank cap and chain conforming to IS : 5290	Each	**17.00**			
6.17	Providing, lowering, laying in position, aligning, fixing in position and jointing **CI dismantling joint** (suitable for sluice valves etc.) as per IS specifications complete of the following sizes including all jointing material, cost of all labour, hydraulic testing and commissioning as per Technical Specifications and as per direction of Engineer					
6.17.1	100 mm	Nos.	**926**			
6.17.2	150 mm	Nos.	**320**			
6.17.3	200 mm	Nos.	**212**			
6.17.4	250 mm	Nos.	**170**			
6.17.5	300 mm	Nos.	**76**			
6.17.6	350 mm	Nos.	**82**			
6.17.7	400 mm	Nos.	**92**			
6.17.8	450 mm	Nos.	**18**			
6.17.9	500 mm	Nos.	**18**			
6.17.10	600 mm	Nos.	**4**			
6.17.11	700 mm	Nos.	**4**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.18	Providing, erecting, testing and commissioning of electric **Valve actuators** totally enclosed, weather-proof and dust proof construction with IP-67, protection class suitable for installation in any position without lubrication, leakage or other operational difficulty with special grease filled gear box and hand wheel for emergency manual operation which will automatically dis-engage on restoration of power to motor and with 10 watt single phase space heater and continuous local mechanical position indicator and individually replaceable counter gear assembly and with two torque and four limit switches with S.S. flap and operated with gear driven cams and of rating 250 Volt, 5 Amp, AC/DC, torque switch dial and with TEFC squirrel cage induction motor working on 440 Volts +/- 10%, 3 phase, 50 Hz AC of intermittent duty rating S-2, insulation class "F" and temp rise restricted to class "B" with IP - 67 protection class suitable for DOL starting and with three thermostat and 30% over load margin. The torque rating of reduction gear box shall be at least 1.5 times max., torque required for opening and closing. Electric Valve Actuator for non-rising spindle type sluice valve, PN 1 & PN 1.6 rating For Valve Size (Without integral starter) including the cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
6.18.1	350 mm	Nos.	**39.00**			
6.18.2	400 mm	Nos.	**45.00**			
6.18.3	450 mm	Nos.	**9.00**			
6.18.4	500 mm	Nos.	**8.00**			
6.18.5	600 mm	Nos.	**1.00**			
6.18.6	700 mm	Nos.	**1.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
6.19	Providing and laying Double Flanged (Screwed / Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 :					
6.19.1	100 mm	m	**1925**			
6.19.2	150 mm	m	**1400**			
6.19.3	200 mm	m	**530**			
6.19.4	250 mm	m	**415**			
6.19.5	300 mm	m	**185**			
6.19.6	350 mm	m	**205**			
6.19.7	400 mm	m	**230**			
6.19.8	450 mm	m	**45**			
6.19.9	500 mm	m	**45**			
6.19.10	600 mm	m	**10**			
6.19.11	700 mm	m	**10**			
6.20	**VALVE CHAMBERS:**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Constructing M**asonry Chamber** in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including necessary excavation, RCC foundation over cement concrete 1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size) as per drawing and 12 mm inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design With common burnt clay F.P.S. (non-modular) bricks of class designation 100A all complete as per drawing, technical specification and direction of Engineer-In- Charge.					
6.20.1	900x1000x1400 mm size valve chamber suitable for 100-200 mm dia Valves	Nos.	**822.00**			
6.20.2	1000x1200x1500 mm size valve chamber suitable for 250-300 mm dia Valves	Nos.	**123.00**			
6.20.3	1550x1500x1750 mm size valve chamber suitable for 350-450 mm dia Valves	Nos.	**121.00**			
6.20.4	1650x1700x1900 mm size valve chamber suitable for 500-600 mm dia Valves:	Nos.	**12.00**			
6.20.5	1750x1900x2000 mm size valve chamber suitable for 700 mm dia Valves	Nos.	**5.00**			
6.21	**DECOMMISSIONING AND CONNECTION TO EXISTING SYSTEM:**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Decommissioning of old existing pipe lines (being abandoned) including plugging and making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes, lowering, laying of specials and pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by the Employer's Representative, irrespective of diameter of branch line (the number of joints involved will be paid separately depending upon the nature of joints and required pipes, excluding cost of valves and specials) but including jointing material such as rubber ring, nut bolts etc.					
6.21.1	50 mm	Job	**15**			
6.21.2	63 mm	Job	**131**			
6.21.3	75 mm	Job	**365**			
6.21.4	100 mm	Job	**269**			
6.21.5	125 mm	Job	**306**			
6.21.6	150 mm	Job	**426**			
6.21.7	175 mm	Job	**88**			
6.21.8	200 mm	Job	**233**			
6.21.9	225 mm	Job	**8**			
6.21.10	250 mm	Job	**127**			
6.21.11	300 mm	Job	**91**			
6.21.12	400 mm	Job	**78**			
6.21.13	600 mm	Job	**22**			
Subtotal for Bill No. 06		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 07: CONSTRUCTION OF NEW RESERVIORS	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7	**CONSTRUCTION OF NEW RESERVIORS**					
7.1	**RCC Over Head Service Reservoirs (OHTs)**					
	Geotechnical Investigation and c**onstruction of Intze type Over Head Tank with the following capacities;** The cost shall be all inclusive of supply, erection and construction, all testing, disinfecting and commissioning of reservoir, MS ladders with cage, Aluminum ladder (from manhole to bottom of dome inside the tank), with spiral staircase out side, manhole frame with cover, handrail painting all exterior concrete surfaces with water proof cement paint, providing ultrasonic level sensor and a mechanical float type water level indicator, piping arrangement with K-9 flanged D.I. pipes for inlets and outlets, flushing and overflow , DI sluice valves for inlet, outlet and scour, sluice valve chambers, flow meter chamber, surface drain, lightning arrestor with two earth pits and plinth protection and compound wall as per specification complete job. Staging height 21 m.					
	OHSR at Budhva Mahadev (ID:3) of Capacity 1.00 ML					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	- 1 No.					
	OHSR at Kharkhura Raja kothi (ID:14) of Capacity 1.5 ML- 1 No.					
	OHSR at Mastalipur (ID:4) of Capacity 2.00 ML - 1 No.					
	OHSR near Joda Masjid (ID:1) of Capacity 2.15 ML - 1 No.					
	OHSR at Bhusunda (ID:5) of Capacity 2.15 ML - 1 No.					
	OHSR at Behind Delha PS (ID:16) of Capacity 2.15 ML - 1 No.					
7.1.1	**Clearing jungle** including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	100 sqm	**54.00**			
	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					
7.1.2	0m - 1.5m	cum	**2882.76**			
7.1.3	1.5m - 3.0m	cum	**5255.58**			
7.1.4	**Backfilling of soil with approved excavated soil**					
	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	**3461.66**			
7.1.5	**Removal of unserviceable soil**					
	Removal of unserviceable soil with disposal up to 8 Km etc. complete and as per direction of engineer in charge.	cum	**1793.92**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.1.6	**Damp Proof Course for compound wall**					
	Providing and laying damp-proof course 50 mm thick with cement concrete 1:2:4 (1cement :2 coarse sand :4 graded stone aggregate 20mm nominal size)	sqm	**324.00**			
7.1.7	**Brick work**					
7.1.7.1	Brick work with bricks of class designation 100A in foundations and plinth in cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth.	cum	**307.80**			
7.1.7.2	Brick work with bricks of class designation 100A in foundations and plinth in cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth. Extra for brick work in superstructure above plinth level up to floor Vth level.	cum	**315.19**			
7.1.8	**Centering and shuttering including strutting, propping etc. and removal of form for:**					
7.1.8.1	Foundations, footings, bases of columns etc. for mass concrete.	sqm	**264.30**			
7.1.8.2	Walls (any thickness) including attached pilasters, Buttresses, plinth and string courses etc .Extra for shuttering in circular work (20% of respective centering and shuttering items): Above 3.5m from GL.	sqm	**5306.09**			
7.1.8.3	Walls (any thickness) including attached pilasters, Buttresses, plinth and string courses etc.	sqm	**508.10**			
7.1.8.4	Columns, Pillars, Piers, Abutments, Posts and Struts: Circular Work	sqm	**2974.31**			
7.1.8.5	Lintels, beams, plinth beams, girders, and cantilevers: Above 3.5m	sqm	**3810.20**			
	Suspended floors, roofs, landings, balconies and access platform: Circular Work					
7.1.8.6	Bottom walkway	sqm	**251.50**			
7.1.8.7	Top walkway	sqm	**101.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.1.8.8	Arches, Domes, Vaults Exceeding 6m Span	sqm	**3665.12**			
7.1.8.9	Spiral staircases (including landing)					
7.1.8.9.1	Up to 3.5m from GL	sqm	**60.00**			
7.1.8.9.2	Above 3.5m from GL	sqm	**652.22**			
7.1.9	**Scaffolding system**					
	Providing and fixing double **scaffolding system** (cup lock type) on the exterior side of building/structure, upto25 meter height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 meter center to center, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining item a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc., wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge.	sqm	**13438.26**			
7.1.10	**PCC in M 15**					
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level; 1:2:4 (1 Cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size)	cum	**274.11**			
7.1.11	**Thermo-Mechanically Treated bars**					
	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all	kg	**596687.05**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.					
7.1.12	**RCC Work**					
7.1.12.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, and reinforcement : 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). All work up to plinth level:	cum	**920.39**			
7.1.12.2	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	**464.10**			
7.1.12.3	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above floor five level and up to **floor ten level,** excluding cost of centering, shuttering, and reinforcement : RCC 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size).	cum	**3682.92**			
7.1.13	**Cement plaster**					
7.1.13.1	12 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of near cement and providing and mixing water proofing material in proportion recommended by the manufacturers:	sqm	**20389.20**			
7.1.13.2	20 mm thick cement plaster in coarse sand in 1:3 (1 cement: 3 coarse sand) finished with a floating coat of near cement Including providing and mixing water proofing material in proportion recommended by the	sqm	**2572.13**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	manufacturers.					
7.1.14	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface, etc. complete					
7.1.14.1	On concrete work.	sqm	**6212.40**			
7.1.14.2	On Steel work.	sqm	**45.00**			
7.1.15	Finishing walls with textured exterior paint of required shade: New work (Two or more coats applied @ 3.28 liter/ 10 sqm) over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm.	sqm	**14176.80**			
7.1.16	Providing and laying Double Flanged (Screwed / Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 :					
7.1.16.1	150 mm	m	**131.81**			
7.1.16.2	250 mm	m	**155.52**			
7.1.16.3	250 mm	m	**188.29**			
7.1.16.4	300 mm	m	**30.96**			
7.1.16.5	350 mm	m	**21.86**			
7.1.16.6	450 mm	m	**43.88**			
7.1.16.7	500 mm	m	**66.08**			
7.1.17	Ductile Iron K - 12 specials suitable for push on jointing includinglaying in position S&S or flanged DI. special such as tees, bends, collars, tapers and caps etc. including cost of specials up to 600 mm dia	qtl	**45.21**			
	VALVES AND APPURTENANCES					
7.1.18	Providing and fixing C.I. **sluice valves** (with cap)					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) :					
7.1.18.1	150 mm	Each	**6**			
7.1.18.2	250 mm	Each	**11**			
7.1.18.3	300 mm	Each	**1**			
7.1.19	Providing, fixing in position, hydraulic testing and commissioning of DI D/F Resilient Seated Vacuum tight **Butterfly Valve** suitable for bi-directional flow with Body and disc made of DI GGG40. Disk shall conform to double eccentric with specially designed (Dove tail Shape) pressure supported sealing system made of EPDM approved by DVGW Clause W270. The Body seat shall be fusion bonded nickel chromium weld overlay and micro finished. Closed Disk Eye with dry shaft design made of Stainless steel with 13% chromium of grade 1.4021 connected with maintenance free bearing of Bronze with double O-ring sealing of EPDM. The shaft shall be connected to the disc by riveted pin or taper pin with lock. The Valve shall be compatible for Buried application without chamber. The Coating and the rubber parts shall comply with DVGW and KTW standards. The gearbox shall be with self-locking, fully enclosed, maintenance-free lubricated for life, worm gear including mechanical position indicator. The Valve shall be according to EN593/IS 5163, the face-to-face length shall be EN 588-1, basic series 14/BS 5155(Long Body)/ IS13095 (Long Body) and drilling according to EN 1092-2/IS 6418. Epoxy Powder or liquid Epoxy coating with minimum thickness of 250 micron applied inside and outside of both body and disc. (EP-P it is a resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200 deg C).					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Including cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
7.1.19.1	350 mm	Each	**1**			
7.1.19.2	450 mm	Each	**2**			
7.1.19.3	500 mm	Each	**3**			
7.1.20	Providing and laying Double Flanged (Screwed / Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 :					
7.1.20.1	150 mm	m	**30.00**			
7.1.20.2	250 mm	m	**55.00**			
7.1.20.3	300 mm	m	**5.00**			
7.1.20.4	350 mm	m	**5.00**			
7.1.20.5	450 mm	m	**10.00**			
7.1.20.6	500 mm	m	**15.00**			
7.1.21	**VALVE CHAMBERS**					
	Constructing masonry Chamber in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including necessary excavation, RCC foundation over cement concrete 1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size) as per drawing and 12 mm inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design With common burnt clay F.P.S.(non-modular) bricks of class designation 100A all complete as per drawing, technical specification and direction of Engineer-In- Charge.					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.1.21.1	900x1000x1400 mm size valve chamber suitable for 100-200 mm dia Valves	Each	**6**			
7.1.21.2	1000x1200x1500 mm size valve chamber suitable for 250-300 mm dia Valves	Each	**12**			
7.1.21.3	1550x1500x1750 mm size valve chamber suitable for 350-450 mm dia Valves	Each	**9**			
7.1.21.4	1650x1700x1900 mm size valve chamber suitable for 500-600 mm dia Valves:	Each	**9**			
7.1.22	Providing, lowering, laying in position, aligning, fixing in position and jointing **CI dismantling joint** (suitable for sluice valves etc.) as per IS specifications complete of the following sizes including all jointing material, cost of all labour, hydraulic testing and commissioning as per Technical Specifications including the cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
7.1.22.1	150 mm	Each	**6**			
7.1.22.2	250 mm	Each	**11**			
7.1.22.3	300 mm	Each	**1**			
7.1.22.4	350 mm	Each	**1**			
7.1.22.5	450 mm	Each	**2**			
7.1.22.6	500 mm	Each	**3**			
7.1.23	**Cement Concrete tiles for plinth Protection**					
	Chequered precast cement concrete tiles 22 mm thick with marble chips of size 6 mm in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning tec. Complete on 20 mm thick bed of cement mortar 1:4 (1 cement:4 coarse sand) Light shade using white cement. For Plinth Protection.	sqm	**292.01**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.1.24	**CI Manhole Cover**					
	Supplying and fixing C.I. man hole cover without frame for valve chambers: 560 mm diameter C.I. cover (heavy duty) the weight of the cover to be not less than 108 kg.	each	**6**			
7.1.25	**Cage Ladder Stainless Steel (Type-I)**					
	Providing; fabricating and erecting stainless steel ladder of 450mm wide made of 65 x 65 x 6mm angle iron and 20mm MS bars for walkway to top of the OHSR including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer complete in all respect as per specifications and the direction of the Engineer.	m	**34.50**			
7.1.26	**Aluminum Ladder - (Type II)**					
	Supply, fabricating & fixing of anodized (20 to 25 micron) Aluminum ladder of 450mm wide with 2 nos rectangular section of 65 x 35 mm (3 mm thick) as vertical post and 25 mm bars steps at 300 mm c/c complete in all respect as per the specification and the direction of the Engineer.	m	**19.50**			
7.1.27	**G.I. steel pipe railing**					
	Providing and fixing 50 mm dia G.I. steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 meters high above ground, 2 m center to center, complete as per approved drawings including all material, labour. at walkway	m	**1406.37**			
7.1.28	**Steel gate**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Providing and fixing steel glazed **doors, windows a**nd ventilators of standard rolled steel sections, joints mitered and welded with 15x3 mm lugs 10 cm long with steel lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6(1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal-sash putty of approved make complete including applying a priming coat of approved steel primer; including the cost of metal beading and other fitting and necessary hinges or pivots as required.					
	OHSR Staircase Gate & Boundary Wall Main Gate	sqm	**45.00**			
7.1.29	**Fly/bird protection with GI mesh for RCC ventilator**					
	Supplying and fixing fixed wire gauge of 14 mesh x 24 gauge to the metal frame of rolled section by metal beading 20x3mm with suitable screw at not exceeding 150mm distance.	sqm	**12.00**			
7.1.30	Providing and fixing in position **lightening arrester** set complete with 600mm x 600mm x 6mm thick G.I. earthing plate embedded below ground in earthling pit at 3.5 meter depth, G.I. strip of size 25mmx5mm thick from earthing plate to top of Overhead tank, G.I. Final made of GI bar 25mm dia and 2m long fixed on top of OH tank and connected to GI strip. The earthling set shall comply of IS: 3043 complete in all respect as per specification and the direction of the Engineer.	set	**6**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.1.31	Making arrangement for **water tightness test** of R.C.C. reservoir conforming to the provisions laid down in IS-3370 (part I) 1965 until satisfactory completion of water tightness test, by filling with water up to Top Water Level (TWL) as shown in the drawing and as per direction of E.I.C. including the arrangement of water, its carriage & lifting by necessary pipes, fittings and pumping machinery etc. all required for the purpose and testing after rectification leaks found in the reservoir.	ml	**10.95**			
7.1.32	**Disinfection & washing** the tank and pipe connections including cleaning the inside of the tank etc., complete.	Job	**6**			
7.1.33	Supply, installation, testing and commissioning of **Electromagnetic** Flow Meter etc. including all materials and making connection with existing pipeline required for Electromagnetic Flow Meter including cutting the existing pipe line etc. complete in all respect as per technical specification and as per direction of Engineer.					
7.1.33.1	350mm	Each	**2**			
7.1.33.2	450mm	Each	**4**			
7.1.33.3	500mm	Each	**6**			
7.1.34	Providing, installing, testing and commission of **Ultrasonic Level sensor** with level window in the electrical panel for showing water level.	Each	**6**			
7.2	**Construction of RCC Ground Level Service Reservoirs (GLSRs)**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Geotechnical Investigation and Construction of **RCC Ground Level Service,** The cost shall be all inclusive of supply, erection and construction, all testing, disinfecting and commissioning of reservoir, MS ladders with cage, Aluminum ladder (from manhole to bottom of inside the tank), & RCC staircase, manhole frame with cover, handrail painting all exterior concrete surfaces with water proof cement paint, providing ultrasonic level sensor and a mechanical float type water level indicator, piping arrangement with K-9 flanged D.I. pipes for inlet/s and outlet/s, and bypass pipes arrangements, flushing and overflow , DI sluice valves for inlet, outlet and scour, sluice valve chambers, flow meter chamber, surface drain, lightning arrestor with two earth pits and plinth protection, retaining wall **and compound wall** as per specification complete job.					
	GLSR at Ramshila Hills (ID: 7) of capacity 2.6 ML (1 No.)					
	GLSRs at Brahmyoni Hills (ID: 10a & 10b) of capacity 4.64 ML each (2 No.)					
7.2.1	**Excavation in Ordinary Soil**					
	Earth work in excavation over areas (exceeding 30 cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth , lead up to 50 m and lift up to 1.5 m; disposed earth to be levelled and neatly dressed.					
	0m - 1.5m	cum	**1213.82**			
7.2.2	**Excavation in hard rock (blasting prohibited)**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Excavation work in foundation trenches including extra excavation for socket portion but not exceeding 1.5 m in width including dressing of sides and ramming of bottoms lift up to 1,5m, including getting cut the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50 m. Hard rock (Blasting Prohibited)					
	0m - 1.5m	cum	**2682.17**			
7.2.3	**Backfilling of soil with approved excavated soil**					
	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	**515.16**			
7.2.4	**Removal of unserviceable soil**					
	Removal of unserviceable soil with Disposal up to 8 Km etc. complete and as per direction of engineer in charge.	cum	**3122.10**			
7.2.5	**Centering and shuttering (including lead and lift charges).**					
	Centering and shuttering including strutting, propping etc. and removal of form for					
7.2.5.1	Foundations, footings, bases of columns, etc. for mass concrete	sqm	**397.34**			
7.2.5.2	Walls (any thickness) including attached plasters Buttresses, plinth and string courses etc. (Extra for shuttering in circular work (20% of respective centering and shuttering items)	sqm	**3988.35**			
7.2.5.3	Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	**1050.59**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.2.5.4	Lintels, beams, plinth beams, girders, brace members and cantilevers.	sqm	**1363.20**			
7.2.5.5	Suspended floors, roots, landings, balconies and access platform.	sqm	**2136.15**			
7.2.5.6	Small surfaces such as cantilever ends, brackets and ends of steps, caps and bases to plasters and columns and the like. Steps for Staircase	sqm	**15.55**			
7.2.6	**Scaffolding System**					
	Providing and fixing scaffolding system (cup lock type) on the exterior side of building/structure, up to 25 meter height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 meter center to center, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc., wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge. Note(1) The elevation area of the scaffolding shall be measured for payment purpose. (2) The payment will be made once only for execution of all items for such works.		**3892.09**			
7.2.7	**PCC in M 15**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level; 1:2:4 (1 Cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size)	cum	**710.67**			
7.2.8	**Brick work**					
7.2.8.1	Brick work with bricks of class designation 100A in foundations and plinth in: Cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth.	cum	**171.10**			
7.2.8.2	Brick work with bricks of class designation 100A in foundations and plinth in: Cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth. Extra for Brick work in superstructure above plinth level up to floor Vth level.	cum	**119.97**			
7.2.9	**THERMO-MECHANICALLY BARS (FE-500)**					
	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.	kg	**308707.28**			
7.2.10.	**RCC WORK**					
	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, and reinforcement : 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). All work up to plinth level					
7.2.10.1	All work up to plinth level	cum	**691.55**			
7.2.10.2	All works above plinth level up to floor fifth level.	cum	**1288.49**			
7.2.11	**Cement Plaster**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	20 mm thick cement plaster in coarse sand in 1:3 (1 cement: 3 coarse sand) finished with a floating coat of near cement Including providing and mixing water proofing material in proportion recommended by the manufacturers.	sqm	**12048.54**			
7.2.12	**Epoxy paint as per manufacturer's specifications**					
	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface, etc. complete					
7.2.12.1	On concrete work.	sqm	**8721.33**			
7.2.12.2	On steel work	sqm	**21.60**			
7.2.13	Finishing walls with textured exterior paint of required Shade: New work (Two or more coats applied @ 3.28 liter/ 10 sqm) over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm.	sqm	**2992.60**			
7.2.14	Providing and fixing on wall face Unplasticized Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 110 mm diameter.	m	**58.95**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.2.15	Providing and fixing steel glazed doors, windows and ventilators of standard rolled steel sections, joints mitered and welded with 15x3 mm lugs 10 cm long with steel lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal-sash putty of approved make complete including applying a priming coat of approved steel primer; including the cost of metal beading and other fitting and necessary hinges or pivots as required.	sqm	**10.80**			
7.2.16	**DI PIPE & SPECIALS**					
	Providing and laying Double Flanged (Screwed / Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 :					
7.2.16.1	150 mm	m	**30.00**			
7.2.16.2	200 mm	m	**17.00**			
7.2.16.3	350 mm	m	**119.00**			
7.2.16.4	400 mm	m	**237.80**			
7.2.16.5	450 mm	m	**30.00**			
7.2.16.6	500 mm	m	**11.00**			
7.2.17	**Specials required for proposed pipes**					
	Ductile Iron K - 12 specials suitable for push on jointing including Laying in position S&S or flanged DI. specials such as tees, bends, collars, tapers and caps etc .including cost of specials Up to 600 mm dia	Qtl	**45.30**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.2.18	**VALVES AND APPURTENANCES**					
	Providing and fixing C.I. **sluice valves** (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) :					
7.2.18.1	150 mm	each	**2**			
7.2.18.2	200 mm	each	**1**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.2.19	Providing, fixing in position, hydraulic testing and commissioning of DI D/F Resilient Seated Vacuum tight **Butterfly Valve** suitable for b-idirectional flow with Body and disc made of DI GGG40. Disk shall conform to double eccentric with specially designed (Dove tail Shape) pressure supported sealing system made of EPDM approved by DVGW Clause W270. The Body seat shall be fusion bonded nickel chromium weld overlay and micro finished. Closed Disk Eye with dry shaft design made of Stainless steel with 13% chromium of grade 1.4021 connected with maintenance free bearing of Bronze with double O-ring sealing of EPDM. The shaft shall be connected to the disc by riveted pin or taper pin with lock. The Valve shall be compatible for buried application without chamber. The Coating and the rubber parts shall comply with DVGW and KTW standards. The gearbox shall be with self-locking, fully enclosed, maintenance-free lubricated for life, worm gear including mechanical position indicator. The Valve shall be according to EN593/IS 5163, the face-to-face length shall be EN 588-1, basic series 14/BS 5155(Long Body)/ IS13095 (Long Body) and drilling according to EN 1092-2/IS 6418. Epoxy Powder or liquid Epoxy coating with minimum thickness of 250 micron applied inside and outside of both body and disc. (EP-P it is a resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200 deg C). Including cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
7.2.19.1	350 mm	Nos.	**5**			
7.2.19.2	400 mm	Nos.	**4**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.2.19.3	450 mm	Nos.	**2**			
7.2.19.4	500 mm	Nos.	**1**			
7.2.20	Constructing masonry Chamber in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including necessary excavation, RCC foundation over cement concrete 1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size) as per drawing and 12 mm inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design With common burnt clay F.P.S.(non-modular) bricks of class designation 100A all complete as per drawing, technical specification and direction of Engineer-In- Charge.					
7.2.20.1	900x1000x1400 mm size valve chamber suitable for 100-200 mm dia Valves	Nos.	**3**			
7.2.20.2	1550x1500x1750 mm size valve chamber suitable for 350-450 mm dia Valves	Nos.	**15**			
7.2.20.3	1650x1700x1900 mm size valve chamber suitable for 500-600 mm dia Valves:	Nos.	**3**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.2.21	Providing, lowering, laying in position, aligning, fixing in position and jointing **CI dismantling joint** (suitable for sluice valves etc.) as per IS specifications complete of the following sizes including all jointing material, cost of all labour, hydraulic testing and commissioning as per Technical Specifications including the cost of water required for testing etc. complete and as directed by the Engineer in Charge.					
7.2.21.1	150 mm	Nos.	**2**			
7.2.21.2	200 mm	Nos.	**1**			
7.2.21.3	350 mm	Nos.	**5**			
7.2.21.4	400 mm	Nos.	**4**			
7.2.21.5	450 mm	Nos.	**2**			
7.2.21.6	500 mm	Nos.	**1**			
7.2.22	**Cement Concrete tiles for plinth Protection**					
	Chequered precast cement concrete tiles 22 mm thick with marble chips of size 6 mm in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning tec. Complete on 20 mm thick bed of cement mortar 1:4 (1 cement:4 coarse sand) Light shade using white cement. For Plinth Protection.	sqm	**306.03**			
7.2.23	**Ventilation Pipe 100mm dia**					
	Providing and fixing of C.C.I. (spun) socketed soil, waste and vent pipe :100 mm dia	m	**41.60**			
7.2.24	**CI Manhole Cover**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Supplying and fixing C.I. manhole cover without frame for valve chambers: 560 mm diameter C.I. cover (heavy duty) the weight of the cover to be not less than 108 kg.	each	**4**			
7.2.25	**Sky Light 6mm glass**					
	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic molded frame of approved make and shade with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete. Rectangular shape 1500x450 mm	each	**8**			
7.2.26	**Cage Ladder Stainless Steel (Ladder Type I)**					
	Providing, fabricating and erecting Stainless steel ladder of 450mm wide made of 65 x 65 x 6mm angle iron and 20mm MS bars for walkway to top of the OHSR including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer complete in all respect as per specifications and the direction of the Engineer.	m	**12.00**			
7.2.27	**Aluminum Ladder Type II**					
	Supply, fabricating & fixing of anodized (20 to 25 micron) Aluminum ladder of 450mm wide with 2 nos rectangular section of 65 x 35 mm (3 mm thick) as vertical post and 25 mm bars steps at 300 mm c/c complete in all respect as per the specification and the direction of the Engineer.	m	**13.50**			
7.2.28	Providing and fixing 50 mm dia G.I. steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 meters high above ground, 2 m center to center, complete as per approved drawings including all material, labour. at walkway	m	**297.74**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.2.29	Providing and fixing in position lightening arrester set complete with 600mm x 600mm x 6mm thick G.I. Earthing plate embedded below ground in earthling pit at 3.5 meter depth, G.I. strip of size 25mmx5mm thick from Earthing plate to top of Overhead tank, G.I. Finial made of GI bar 25mm dia and 2m long fixed on top of OH tank and connected to GI strip. The earthling set shall comply of IS: 3043 complete in all respect as per specification and the direction of the Engineer.	set	**3**			
7.2.30	Making arrangement for **water tightness test** of R.C.C. reservoir conforming to the provisions laid down in IS-3370 (part I) 1965 until satisfactory completion of water tightness test, by filling with water up to Top Water Level (TWL) as shown in the drawing and as per direction of E.I.C. including the arrangement of water, its carriage & lifting by necessary pipes, fittings and pumping machinery etc. all required for the purpose and testing after rectification leaks found in the reservoir.	ml	**11.88**			
7.2.31	**Disinfection & washing** the tank and pipe connections including cleaning the inside of the tank etc. complete.	Job	**3**			
7.2.32	Supply, installation, testing and commissioning of **Electromagnetic Flow Meter** etc. including all materials and making connection with existing pipeline required for Electromagnetic Flow Meter including cutting the existing pipe line etc. complete in all respect as per technical specification and as per direction of Engineer.					
7.2.32.1	450 mm	Each	**4**			
7.2.32.2	500 mm	Each	**2**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
7.2.33	Providing, installing, testing and commission of **Ultrasonic Level sensor** with level window in the electrical panel for showing water level.	Each	**3**			
Subtotal for Bill No. 07		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 08: HOUSE SERVICE CONNECTION	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
8	**HOUSE SERVICE CONNECTION:**					
8.1	Dismantling G.I. pipes including excavation and refilling trenches after taking out the pipes , breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes , lead at site within 50 meters lead.					
	Up to 150 mm diameter	m	**203000.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
8.2	**House Service Connection:** Making **House Service Connection** from distribution main to property limit including (1) providing and fixing brass ferrule -1 No (2) Providing and fixing metal inserted compression female thread adapter (3) providing and fixing MDPE blue pipe PE-80 and 16 kg class confirming to ISO 4427 in required length -6 meter approx..(4) Providing and fixing compression elbow -2 Nos (5) Providing and fixing PVC ball valve with one side compression and another side female threaded -1 No .The work shall done as per detailed specifications and as per drawings complete with all lead and lift and as directed by the Engineer (6) Providing, installing and giving satisfactory field testing of **AMR** type water meter, horizontal inferential multi-jet type with magnetic drive and dry dial suitable for ambient 50º C temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per IS 779/1994 (VI Revision) with ISI mark along with manufacturer's test certificate and guarantee certificate, including cost of surface box for water meter and all other materials and labour including consumer survey.					
8.2.1	15 mm	Nos.	**71000**			
8.2.2	20 mm	Nos.	**3265**			
8.2.3	25 mm	Nos.	**600**			
8.2.4	32 mm	Nos.	**100**			
8.2.5	40 mm	Nos.	**25**			
8.2.6	50 mm	Nos.	**10**			
Subtotal for Bill No. 08		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 09: PUBLIC STAND POST	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
9	**PUBLIC STAND POST :**					
9.1	Disconnection from the Existing water pipe line: Dismantling of cement concrete platform along with curtain wall and base concrete etc. including stacking of useful materials near the site and disposal of unserviceable materials within 50 meters lead.					
	Cement Concrete Grade M-15 & M-20 and PCC blocks	Job	**1074**			
9.2	Dismantling G.I. pipes (external work) including excavation and refilling trenches after taking out the pipes manually/ by mechanical means including stacking of pipes within 50 meters lead					
	Up to 150 mm diameter	m	**3222.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
9.3	**Public Stand post :** Providing and constructing two taps stand post as per type design with excavation 15 cm thick PCC 1:3:6 bedding 20 cm thick PCC 1:2:4 concrete for platform of 1.75 M dia. with side curb and bucket rest, 90 mm dia, MDPE pipe central post duly filled therein with C. C. 1:2:4, 5 M long, 20 mm dia. medium G.I. pipe from point of tapping to stand post additional 20 mm dia G.I. pipe fixed vertically up to 15 mm dia self-closing water taps, one brass ferrule etc. complete together with all labour and material charges as per drawing and as directed by Engineer-in-charge when good foundation is available. Rate includes draining arrangement by excavating open gutters.	Nos.	**200**			
Subtotal for Bill No. 09		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 10: MONITORING STATION	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
10	**MONITORING STATION:**					
10.1	**Construction of PCC control pedestal** for mounting the Control Panel (RTU) for Monitoring Station as per the approved drawing.	Nos.	**32**			
10.2	Providing, fixing & commissioning of **control panel (RTU)** in the location specified by the employer including location specified by the employer with the following 1. Digital input & output 2.Analog inputs for monitoring of temperature and humidity 3.Local display membrane key board and data storage 4.Compactibility with GSM Modem 5. GSM based wireless communication for RTU 6 Pressure Transmitters with SS body and out of 4 to 20 mA range 0 to 10 Bar 6. Isolation transformers of capacity 300 VA with surge arrestor and required capacity of UPS including programme unit, cost of SIM Cards, obtaining 230 V Power supply, programme unit, GSM communication module, UPS, pressure	Nos.	**32**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	transmitter, with enclosure as per the specification mentioned in the employer requirement.					
10.3	Providing, installation, testing and commissioning of **Electromagnetic Flow Meter** etc. including all materials and making connection with existing pipeline required for Electromagnetic Flow Meter including cutting the existing pipe line etc. complete in all respect as per technical specification and as per direction of Engineer.					
10.3.1	200 mm	Nos.	**1**			
10.3.2	300 mm	Nos.	**3**			
10.3.3	350 mm	Nos.	**7**			
10.3.4	400 mm	Nos.	**15**			
10.3.5	450 mm	Nos.	**3**			
10.3.6	500 mm	Nos.	**3**			
10.4	Providing, installing, testing and commissioning of Pressure transmitters (0-10 bar) In monitoring Station.	Nos.	**88**			
Subtotal for Bill No. 10		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 11: CUSTOMER SERVICE CENTERS AND CONTROL ROOM AT DANDIBAGH	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11	Customer service center and control room at Dandibagh					
	Construction of Customer Service Centers within the Service Area					
11.1	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					
11.1.1	0 to 1.50M	cum	**541.17**			
11.1.2	1.50M to 3.0M	cum	**210.69**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.2	Supplying and Filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.	cum	**61.64**			
11.3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level; 1:2:4 (1 Cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size)	cum	**35.60**			
11.4	Providing and laying damp-proof Course 50 mm thick with cement concrete 1:2:4 (1cement :2 coarse sand :4 graded stone aggregate 20mm nominal size)	sqm	**34.87**			
11.5	Brick work with bricks of class designation 100A in foundations and plinth in: Cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth.	cum	**43.49**			
11.6	Brick work with bricks of class designation 100A in foundations and plinth in: Cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth. Extra for Brick work in superstructure above plinth level upto floor Vth level.	cum	**1003.63**			
11.7	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, and reinforcement : 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). All work up to plinth level:					
11.7.1	All work up to plinth level	cum	**156.94**			
11.7.2	Walls columns, pillars, posts and struts	cum	**191.28**			
11.7.3	Beams, plinth beams, girders, cantilevers, suspended floors, lintels, roofs and staircases including spiral staircases, shelves etc.	cum	**66.29**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.8	**Centering and shuttering** including strutting, propping, bracing etc. complete and removal of form for:					
11.8.1	Foundations, footings, bases of columns etc. for mass concrete.	sqm	**662.53**			
11.8.2	Suspended floors, roofs, landings, balconies and access platform.	sqm	**1574.20**			
11.8.3	Lintels, beams, plinth beams, girders, and cantilevers.	sqm	**2864.04**			
11.8.4	Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	**217.22**			
11.8.5	Stairs, and spiral-staircases.	sqm	**217.22**			
11.9	**Cement plaster**					
11.9.1	12 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of near cement and providing and mixing water proofing material in proportion recommended by the manufacturers:	sqm	**8480.18**			
11.9.2	20 mm thick cement plaster in coarse sand in 1:3 (1 cement: 3 coarse sand) finished with a floating coat of near cement Including providing and mixing water proofing material in proportion recommended by the manufacturers.	sqm	**121.36**			
11.10	Providing 10 mm thick **plaster of Paris** (Gypsum anhydrous) ceiling up to a height of 5 m above floor level over first class kail wood strips 25x6 mm with 10 mm gap in between and reinforced with rabbit wire mesh fixed to wooden frame (frame work to be paid separately). **With any sunk or raised moldings in the plaster of Paris (Gypsum anhydrous) ceiling**	sqm	**209.09**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.11	Providing and applying white **cement based putty** of average thickness 2 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	sqm	**3839.34**			
11.12	Painting with **synthetic enamel paint** of approved brand and manufacture of required colour to give an even shade: Two or more coats on new work.	sqm	**3839.34**			
11.13	Finishing walls with textured exterior paint of required Shade: New work (Two or more coats applied @ 3.28 liter/ 10 sqm) over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm.	sqm	**4513.36**			
11.14	Providing and fixing **M.S. grills** of requirement pattern in frames of windows etc. with M.S. flats, square or round bars etc. complete. Fixed to steel windows by welding.	kg	**3069.00**			
11.15	Providing and fixing steel glazed doors, windows and ventilators of standard rolled steel sections, joints mitered and welded with 15x3 mm lugs 10 cm long with steel lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal-sash putty of approved make complete including applying a priming coat of approved steel primer; including the cost of metal beading and other fitting and necessary hinges or pivots as required.	sqm	**66.30**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.16	Providing and fixing in position of **collapsible steel shutters** with vertical channels 20x10x2 mm and braced with flat iron diagonals 20x5 mm size with top and bottom rail of T-iron 40x40x6 mm with 40 mm dia steel pulleys complete with bots, nuts locking arrangement stoppers handles including applying a priming coat of approved steel primer.	sqm	**12.00**			
11.17	Finishing with **Deluxe Multi surface paint** system for interiors and exteriors using Primer as per manufacturers. Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand and manufacture.	sqm	**66.30**			
11.18	Providing and fixing 20mm thick mirror polished, machine cut for kitchen platforms, vanity counters fasciae and similar locations of required size of approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement :4 coarse sand) with joints treated with white cement, mixed* with matching pigment-epoxy touch ups. Including rubbing, curing etc. complete at all Levels. Area of each slab over 0.2 sqm but up to 0.5 sqm. **Granite of any colour and shade**	sqm	**1084.52**			
11.19	**Flooring & wall tiles**					
11.19.1	Providing and laying Ceramic glazed **floor tiles** of size 300x300 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS: 15622, of approved make, in all colours, shades, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement: 4 Coarse sand), including pointing the joints with white cement and matching pigments etc., complete.	sqm	**35.64**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.19.2	Providing and fixing 1st quality ceramic glazed **wall tiles** conforming to IS:15622 (Thickness to be specified by the manufacture) of approved make in all colours, shades of any size as approved by Engineer-in-charge in skirting , risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	sqm	**124.74**			
11.19.3	Providing and laying brick tiles of class designation 100 over roof grouted with cement mortar 1:3 (1 cement:3 coarse sand) mixed with 2% if integral water proofing compound by weight of cement, over a 12 mm layer of cement mortar 1:3 (1 cement:3 fine sand) and finished neat. With F.P. brick tiles	sqm	**342.48**			
11.20	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	**559.42**			
11.21	**Disposal of surplus earth**, brick, bats, soft and hard rock pieces and dismantled materials of road by tipper beyond 8 m from site of work to within/beyond municipal area as directed include ding supply of all material, labour, T&P etc. Required for proper completion of the work.	cum	**192.44**			
11.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.	kg	**41559.82**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.23	Providing and fixing in position of **stainless steel (**Grade 304) **railing** made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, & fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc. complete).	kg	**400.90**			
11.24	**Steel work** welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel, etc. as required.					
11.24.1	In **gratings,** frames, guard bar, ladders, railings, brackets, gates & similar works.	kg	**176.00**			
11.24.2	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel, etc. as required for **Chequered MS Plate to cover cable trench.**	kg	**3014.00**			
11.25	**Bathroom and toilet fittings** (stop cock, bib cock, mirror, soap stand, towel rail, toilet paper holder, gratings, traps etc. complete.	Job	**10**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.26	Providing and fixing **water closet squatting pan (Indian type W.C. pan)** with 100 mm sand cast Iron P or S trap, 10 liter low fixtures complete, including cutting and making good the walls and level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS: 7231, with all fittings and floors wherever required: White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests.	Nos.	**5**			
11.27	Providing and fixing white vitreous china pedestal type **water closet (European type W.C. pan)** with seat and lid, 10 liter low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS: 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required: W.C. pan with ISI marked white solid plastic seat and lid.	Nos.	**5**			
11.28	Providing and fixing white vitreous china flat back or wall corner type lipped front **urinal basin** of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required: One urinal basin with 5 liter white P.V.C. automatic flushing cistern.	Nos.	**20**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.29	Providing and fixing **wash basin** with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	Nos.	**10**			
11.30	Providing and fixing on wall face un-plasticized-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS :4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion. 110 mm diameter.	m	**216.00**			
11.31	Providing and fixing on wall face un-plasticized-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS :4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion. 110 mm diameter.	m	**216.00**			
11.32	Providing and fixing on wall face un-plasticized-PVC (working pressure 4 kgf per sqm) **waste water pipes** conforming to IS :4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion. 110 mm diameter.	m	**216.00**			
11.33	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good.					
11.33.1	15 mm nominal outer dia Pipes	m	**108.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
11.33.2	20 mm nominal outer dia Pipes	m	**108.00**			
11.34	**Electrification of consumer service center.** with required no - ceiling fans 6 No, Tube light with luminaries 10 No, exhaust fan 1 no, water heater of capacity 50 liter 1 No, 1.5 Tonne capacity split A.C 2 No, outside bulk head fittings with tube light 1 no, required earthing, power points for computer and printers and doing concealed wiring as per directions of the employer's representative.	sets	**6**			
Subtotal for Bill No. 11		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 12: MISCELLENEOUS WORKS	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12	MISCELLENEOUS WORKS:					
12.1	ROAD CROSSING THROUGH TRENCH LESS TECHNOLOGY WITH PIPE JACKING METHOD					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Providing, laying and jointing **RCC NP4 pipe** with cement mortar joints by trenchless method adopting any suitable technology below ground at required depth under running traffic condition as per the direction of competent authority including carrying out survey work at the job site for determining underground cable trenches like telephone, power cable, **water & sanitary lines** and resistivity tests for finding the soil strata using necessary equipment for completion of work, mobilizing of machineries and specialized crew at the job site, etc. complete in all respects, including excavation of drive pit and exit pit (up to 3 meter depth) with proper protection at the three sides, providing and casting of MS cutting edges for front shield and constructing thrust bed at designed level as directed by the Engineer, necessary de-watering and providing concrete foundations at the base of the drive pit, crane for handling of pipes, and any other machinery, tool & tackles required, construction of temporary works as per requirement and as approved by NH authorities complete in all respect for the road crossing at necessary depth (all depths) with all lead and lifts, as per specification and the direction of the Engineer. 17.67.1 In all type of soils.					
12.1.1	1000 mm dia RCC pipe	m	**40.00**			
12.1.2	1200 mm dia RCC pipe	m	**80.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.2	**RAILWAY CROSSING: TRENCH LESS TECHNOLOGY WITH PIPE JACKING METHOD**					
	Supply and pushing of MS casing pipe of specified thickness by trenchless method adopting any suitable technology below ground at required depth under running traffic condition as per **railway standard** including carrying out survey work at the job site for determining underground cable trenches like telephone, cable, water & sanitary lines and resistivity test for finding the soil strata using necessary equipment for completion of works, mobilizing of machineries and specialized crew at the job site complete in all respect, including excavation of driven pit and exit pit **(up to 3 meter depth)** with proper protection at three sites with shoring sheets and ISMB's. Providing MS cutting edges for front shield and constructing thrust bed at designated level. Necessary de-watering and providing concrete foundation at the base of the driven pit, PVC/Rubber saddle as per the requirement of Railway Authority, crane for handing of pipe and any other machinery, tools, and tackles required, construction of temporary works as per requirement and as per approved by railway authorities, specification and the direction of the Engineer. (Protective coating/lining if done that will be paid extra)					
12.2.1	1200 mm dia 16mm thick casing pipe	m	**130.00**			
12.3	**ROAD RESTORATION**					
12.3.1	**Reconstruction of Bituminous Asphalt Roads**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.3.1.1	**Water Bound Macadam:** (Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 8-10 tones / Smooth 3 wheeled Steel Roller in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density). Using Screening Crushable type such as Moorum or Gravel (with Vibratory Roller)					
12.3.1.1.1	**Grading II:** 100 mm thick	cum	**10773.90**			
12.3.1.1.2	**Grading III:** 100 mm thick	cum	**10773.90**			
12.3.1.2	**Prime coat** (Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means.)	sqm	**107735.00**			
12.3.1.3	**Tack Coat:** Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	sqm	**107735.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.3.1.4	**Bituminous Macadam** (Providing and laying bituminous macadam with 100-120 TPH hot mix plant producing an average output of 75 tones per hour using crushed aggregates of specified grading premixed with bituminous binder, transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction) for Grading I (40 mm nominal size); thickness 40 mm	cum	**4309.40**			
12.3.1.5	**Bituminous Penetration Macadam** (Construction of penetration macadam over prepared Base by providing a layer of compacted crushed coarse aggregate using chips spreader with alternate applications of bituminous binder and key aggregates and rolling with a smooth wheeled steel roller 8-10 tone capacity to achieve the desired degree of compaction) 50 mm thick	sqm	**107735.00**			
12.3.1.6	**20mm thick Open-Graded Premix Carpet** using Bituminous (penetration grade/modified bitumen) Binder: Providing, laying and rolling of open-graded premix carpet of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a three wheel 80-100 kN static roller capacity, finished to required level and grades to be followed by seal coat of either Type A or Type B or Type C as per Technical Specification Clause 508.	sqm	**194529.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.3.2	**Reconstruction of Concrete Roads**					
12.3.2.1	**Sand Filling in foundation Trenches** as per Drawing & Technical Specification.	cum	**544.00**			
12.3.2.2	**Dry Lean Cement Concrete** Sub- base (Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tones vibratory roller, finishing and curing.)					
	100 mm thick	cum	**14652.00**			
12.3.2.3	**Cement Concrete Pavement** (Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, deboning strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing).					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	200 mm thick	cum	**29304.00**			
12.4	**Construction of Compound Wall** as per drawing & specification and as per direction of Engineer in charge.					
	At Dandibagh Campus.					
12.4.1	**Excavation in Ordinary Soil**					
	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					
	0m - 1.5m	cum	**420.84**			
12.4.2	**Backfilling of soil with approved excavated soil**					
	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	**208.19**			
12.4.3	**Removal of unserviceable soil**					
	Removal of unserviceable soil with Disposal up to 8 Km etc. complete and as per direction of engineer in charge.	cum	**212.65**			
12.4.4	**Damp Proof Course for compound wall**					
	Providing and laying damp-proof Course 50 mm thick with cement concrete 1:2:4 (1cement :2 coarse sand :4 graded stone aggregate 20mm nominal size)	sqm	**180.36**			
12.4.5	**Brick work**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.4.5.1	Brick work with bricks of class designation 100A in foundations and plinth in: Cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth.	cum	**151.20**			
12.4.5.2	Brick work with bricks of class designation 100A in foundations and plinth in: Cement mortar 1:4 (1 cement: 4 coarse sand) in foundation and plinth. Extra for Brick work in superstructure above plinth level up to floor Vth level.	cum	**168.77**			
12.4.6	**Centering-Shuttering**					
	Centering and shuttering including strutting, propping etc. and removal of form for: Walls (any thickness) including attached pilasters, Buttresses, plinth and string courses etc.	sqm	**120.24**			
12.4.7	**PCC in M 15**					
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level; 1:2:4 (1 Cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size)	cum	**61.45**			
12.4.8	**Cement plaster**					
	20 mm thick cement plaster in coarse sand in 1:3 (1 cement: 3 coarse sand) finished with a floating coat of near cement Including providing and mixing water proofing material in proportion recommended by the manufacturers.	sqm	**1220.23**			
12.4.9	**Finishing walls with textured exterior paint of required shade:** New work (Two or more coats applied @ 3.28 liter/ 10 sqm) over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm.	sqm	**1220.23**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.4.10	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface, etc. complete: On steel work	sqm	**15.84**			
12.4.11	Providing and fixing steel glazed doors, windows and ventilators of standard rolled steel sections, joints mitered and welded with 15x3 mm lugs 10 cm long with steel lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal-sash putty of approved make complete including applying a priming coat of approved steel primer; including the cost of metal beading and other fitting and necessary hinges or pivots as required. BW Gate.	sqm	**7.92**			
12.5	**Site Development**					
12.5.1	Supplying and filling in plinth with local sand and under floors including, watering, ramming consolidating and dressing complete.					
12.5.1.1	OHSR near Joda Masjid (ID:1) of Capacity 1 ML lit	cum	**1800.00**			
12.5.1.2	OHSR at Budhva Mahadev (ID:3) of Capacity 1.71 ML lit	cum	**900.00**			
12.5.1.3	OHSR at Mastalipur (ID:4) of Capacity 2 ML lit	cum	**450.00**			
12.5.1.4	OHSR at Bhusunda (ID:5) of Capacity 2.15 ML lit	cum	**1350.00**			
12.5.1.5	OHSR at Behind Delha PS(ID:14) of Capacity 1.2 ML lit	cum	**450.00**			
12.5.1.6	OHSR at Behind Delha PS (ID:16) of Capacity 1.0	cum	**900.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	ML lit					
12.6	Construction of **Site Drain**; Construction of **Pathway & horticulture**; Construction of **culvert** and Construction of barbed wire **fencing & gate with RCC columns** around electric substation as per the drawing & specification etc. complete. (20mx30m) as per drawing & specification and direction of Engineer in Charge.					
12.6.1	**Excavation in Ordinary Soil**					
	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					
	0m - 1.5m	cum	**14.59**			
12.6.2	**Excavation in hard rock (blasting prohibited)**					
	Excavation work in foundation trenches including extra excavation for socket portion but not exceeding 1.5 m in width including dressing of sides and ramming of bottoms lift up to 1,5m, including getting cut the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50 m. Hard rock (Blasting Prohibited)					
	1.5m - 3.0m	cum	**286.47**			
12.6.3	**Backfilling of soil**					
	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead.	cum	**129.56**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.6.4	**Removal of unserviceable soil**					
	Removal of unserviceable soil with disposal up to 8 Km etc. complete and as per direction of Engineer in charge.	cum	**78.80**			
12.6.5	**Centering and shuttering** including strutting, propping etc. and removal of form for:					
12.6.5.1	Foundations, footings, bases of columns, etc. for mass concrete	sqm	**494.86**			
12.6.5.2	Columns, Pillars, Piers, Abutments, Posts and Struts	sqm	**53.26**			
12.6.6	**Centering and shuttering** including strutting, propping etc. and removal of form for: Foundations, footings, bases of columns, etc. for mass concrete	sqm	**262.50**			
12.6.7	**PCC & DPC in M 15**					
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level; 1:2:4 (1 Cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size)	cum	**98.12**			
12.6.8	**PCC & DPC in M 15**					
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-all work up to plinth level; 1:2:4 (1 Cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size)	cum	**47.85**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.6.9	62 mm thick cement concrete flooring with concrete hardener topping, under layer 50 mm thick cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) and top layer 12mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix: 2 graded stone aggregate, 6mm nominal size) by volume, hardening compound mixed @ 2 liter per 50 kg of cement or as per manufacture's specifications. This includes cost of cement slurry, etc. complete.	sqm	**318.00**			
12.6.10	62 mm thick cement concrete flooring with concrete hardener topping, under layer 50 mm thick cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) and top layer 12mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix: 2 graded stone aggregate, 6mm nominal size) by volume, hardening compound mixed @ 2 liter per 50 kg of cement or as per manufacture's specifications. This includes cost of cement slurry, etc. complete.	sqm	**159.00**			
12.6.11	**Thermo-Mechanically Treated bars (FE-500)**					
	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars TMTC-500-10mm dia.	kg	**2075.47**			
12.6.12	**Reinforcement Cement Concrete**					
12.6.12.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, and reinforcement : 1:1:2 (1 cement : 1 coarse sand : 2 graded stone aggregate 20 mm nominal size). All work up to plinth level:	cum	**11.38**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.6.12.2	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, and reinforcement : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	**0.95**			
12.6.13	**Cement plaster**					
	20 mm thick cement plaster in coarse sand in 1:3 (1 cement: 3 coarse sand) finished with a floating coat of near cement Including providing and mixing water proofing material in proportion recommended by the manufacturers.	sqm	**16.92**			
12.6.14	**Painting Works**					
	Finishing walls with textured exterior paint of required Shade: New work (Two or more coats applied @ 3.28 liter/ 10 sqm) over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm.	sqm	**16.92**			
12.6.15	**G.I. Steel Pipe Railing**					
	Providing and fixing 50 mm dia G.I. steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 meters high above ground, 2 m center to center, complete as per approved drawings including all material, labour. at walkway	m	**8.40**			
12.6.16	Providing and fixing on wall face un-plasticized-PVC (working pressure 4 kgf per sqm) rain water pipes conforming to IS :4985 including jointing with seal ring conforming to IS: 5382 leaving 10 mm gap for thermal expansion. 110 mm diameter.	m	**5.40**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.6.17	**Barbed Wire Fencing for Electric Sub Station**					
12.6.17.1	Providing and fixing 1mm thick **M.S. sheet door/gate** with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.	sqm	**5.40**			
12.6.17.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.: On steel work	sqm	**10.80**			
12.6.17.3	**G.I Barbed wire fencing 1.8 meter high** (Providing and fixing 1.8 meters high GI barbed wire fencing with 2.4 m angle iron posts 50 mm x 50 mm x 6 mm placed every 3 meters center to center founded in M15 grade cement concrete, 0.6 meter below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 12 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc. complete as per clause 807)	RM	**100.00**			
12.6.18	**Horticulture in Campus**					
12.6.18.1	Trenching in ordinary soil up to a depth of 60 cm including removal & stacking of serviceable materials and then disposing of surplus soil, by spreading and neatly leveling within a lead of 50 m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or/ and manure before and after flooding trench with water (including cost of imported earth, sludge or manure).	cum	**3905.74**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
12.6.18.2	Supplying and stacking of good earth at site including royalty but including carriage (earth measured in stacks will be reduced by 20% for payment).	cum	**3905.74**			
12.6.18.3	Supplying and stacking a' site dump of manure from approved source, including carriage (manure measured in stacks will be reduced by 8% for payment) screened through sieve of I.S. designation 20 mm	cum	**3905.74**			
12.6.18.4	Rough dressing the trenched ground including breaking clods	100sqm	**6509.57**			
12.6.18.5	Uprooting weeds form the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation.	100sqm	**6509.57**			
12.6.18.6	Fine dressing the ground	100sqm	**6509.57**			
12.6.18.7	Grassing with 'Doob' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn, free from weeds and fit for mowing including supplying good earth if needed in rows 15 cm apart in either direction.	100sqm	**5913.54**			
12.6.19	Dewatering of the water stagnated in the reservoir sites located in the low level area before starting of the work by operating 5 HP diesel pumps and disposing into the nearest drain	Hrs	**30**			
Subtotal for Bill No. 12		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 13: MECHANICAL WORK	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
13	**MECHANICAL WORK**					
	Supply, install, testing commissioning and painting at the site of Vertical Turbine pumps including removal of existing pumping equipment.					
13.1	Vertical Turbine Pumps as per IS:1710 and as per specification for Dandibagh tube wells, water lubricated, with 30M column assembly suitable for a discharge of 220 cum/Hr. at a head of 85 m.	Nos.	**5**			
13.2	Supply, delivery erection and commissioning of energy efficient Vertical Hollow Shaft Motor as per IS: 325 suitable for 400 V, 1500 RPM, 50 Hz Vertical Turbine pump and as per specification and suitable for pumps duty condition, 90 KW	Nos.	**5**			
13.3	**Submersible Pump sets**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Supply, install, testing and commissioning of ISI marked as per IS 8034, submersible pumping sets comprising of submersible motor of sufficient horse-power coupled to a pump of required duty conditions with water cooling with 415V, 3000/1500 rpm and as per specification with following duty conditions including removal of existing pump set.					
13.3.1	0 to 15KW (5 + 1 spare)	KW	**90**			
13.3.2	16KW to 25KW (4 +1 spare)	KW	**125**			
13.3.3	26KW to 35KW (6 +1 spare)	KW	**245**			
13.3.4	36KW to 45KW (4 + 1 spare)	KW	**225**			
13.3.5	more than 46KW (5 + 1 spare)	KW	**276**			
13.4	Fabrication, supply of flanged/ plain ended MS pipe made from MS sheet strips of relevant IS specification of approved thickness by welding, lowering, laying, aligning, fixing in position at all level/depths in trenches complete (including flanged jointing wherever required) including all material, labour, testing and commissioning along with pipe line as per Technical Specifications and as per direction of Engineer. MS pipe up to 600mm dia (with minimum 5mm thickness sheet) for column pipe & delivery pipe.	kg	**21734.93**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
13.5	Supply, Install, testing and commissioning of DI D/F Slanted seat Tilting Disc Swing Check Valve in single piece body and closed eye disc construction. The hemispherical disc to be inclined at nearly 59 degree for fast open and closing. The corrosion proof and wear resistant disc face & body seat face, both made of fusion bonded Nickel Chromium weld overlay and micro finished. Body and disc of ductile cast iron GGG-40, maintenance (dry) shafts of stainless steel and bearings of Zinc-free Bronze. *The* electrostatic epoxy powder/liquid coating (EP-P) inside and outside color blue RAL 5005 with minimum coating thickness of 150 microns. The EPDM rubber & Epoxy Powder should be approved by W 270. (EP-P à it is a resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200°C). Face to face dimensions as per EN 558-1 Series 14 and flange connections as per EN 1092-2 / IS1538. Specification and dimensions as per EN 12334					
13.5.1	80 mm dia	Nos.	**5**			
13.5.2	100 mm dia	Nos.	**5**			
13.5.3	125 mm dia	Nos.	**4**			
13.5.4	150 mm dia	Nos.	**10**			
13.5.5	200 mm dia	Nos.	**5**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
13.6	Supply, Install, testing and commissioning of DI D/F Resilient Seated Vacuum tight **Butterfly Valve** suitable for bi-directional flow with Body and disc made of DI GGG40. The Body seat shall be fusion bonded nickel chromium weld overlay and micro finished. Closed Disk Eye with dry shaft design made of Stainless steel with 13% chromium of grade 1.4021 connected with Medium free bearing of Bronze with double O-ring sealing of EPDM. The shaft shall be connected to the disc by riveted pin or taper pin with lock. The Valve shall be compatible for Buried application without chamber. The Coating and the rubber parts shall comply with DVGW and KTW standards. The gearbox shall be with self-locking, fully enclosed, maintenance-free lubricated for life, worm gear including mechanical position indicator. The Valve shall be according to EN593/IS 5163, the face-to-face length shall be EN 588-1, basic series 14/BS 5155(Long Body)/ IS13095 (Long Body) and drilling according to EN 1092-2/IS 6418. Epoxy Powder or liquid Epoxy coating with minimum thickness of 250 micron applied inside and outside of both body and disc. (EP-P à resin-coat powder approved for drinking water application, applied through fusion bonding technology process by dipping the shot-blasted casted components heated up to 200 deg C)					
13.6.1	80 mm	Nos.	**5**			
13.6.2	100 mm	Nos.	**10**			
13.6.3	125 mm	Nos.	**4**			
13.6.4	150 mm	Nos.	**5**			
13.6.5	200 mm	Nos.	**5**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
13.7	Providing, installation, testing and commissioning of **Electromagnetic Flow Meter** etc. including all materials and making connection with existing pipeline required for Electromagnetic Flow Meter including cutting the existing pipe line etc. complete in all respect as per technical specification and as per direction of Engineer.					
13.7.1	200mm	Nos.	**10**			
13.7.2	150mm	Nos.	**6**			
13.7.3	125mm	Nos.	**4**			
13.7.4	100mm	Nos.	**12**			
13.7.5	80mm	Nos.	**7**			
13.8	Providing, installation, testing and commissioning of glycerin filled **Pressure gauge** (0-10 kg/cm2) of following ranges with isolation valve and tap off pipe complete in all respect as per technical specification and as per direction of Engineer.	Nos.	**29**			
Subtotal for Bill No. 13		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 14: ELECTRICAL WORK	

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
14	**ELECTRICAL WORK**					
14.1	**11 KV Sub Station at Dandibagh**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Supply, installation, testing and commissioning of D.P. structure with air break switch having following specifications: 1. DP :double pole structure on 2 no ISMB 125mm 10 mtr high pole or 2 no PCC pole 10 mtr high using 7 no MS channel each of size 75mmx50mmx2500mm complete in all respect with nuts, springs washers, clamps as required.**2. gang operated**- Off load type gang operated 3-pole vertical flute type switch suitable for 11KV ; 400A ,3-ø, central post rotating double break isolator complete with MS hardware , copper moving & fixed contact ,assembly of 9 nos pin insulator ,GI pipe of suitable length for operation.**3.** DO: 3nos vertical / horizontal mounted 11kv horn gap fuse set /drop out 11kv barrel fuses mounted on 6no pin insulators. **4.** LA: 3 piece nonlinear resistor type. lighting arrestor of approved make suitable for 3 wire, 11kv OH line with rated voltage of 9kv rms & nominal discharge current rating of 5 KA & complete with galvanized clamping arrangement GI bolts, nuts, washer etc. as required. **5. Jumpers**: 3 no 11kv arcs conductors mounted on pin type insulators as required. **6.** GENERAL: The go shall be operated by hand operated liver properly earthed with provision for locking mounted at 3' including getting approval from Electrical Inspector	Set	**1**			
14.2	**H.T. PANEL**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
14.2.1	Manufacture, supply, installation, testing and commissioning of 250 MVA, 11 KV indoor type, draw out, **Vacuum circuit breaker, panel** board fabricated out of minimum 2 mm thick CRCA sheet as per following specifications. The panel shall be complete work **1.** 1 No. 11 KV, 630 A, 250 MVA electrical draw out type vacuum circuit breaker (with ON/OFF/TRIP/Serve/Test position indication). **2.** 2 sets of ammeter with 3 way ON and OFF selector switch and CT's 30/5 A, CL-1, 15VA. **3.** Two sets of IDMT & Instantaneous O/C and IDMT E/F relay complete with 4 Nos. (1 set) current transformers 630/1A, CL-5 P 10 for protection, 15 VA burden.	Set	**3**			
14.2.2	HT Panel Bus Bar : *electrical grade Copper of high conductivity and non- segregated type* bus bar of 250 MVA fault rating.[3]	Kg	**25.00**			
14.3	Supply, Installation, Testing & Commissioning of **HT metering cubical panel** as approved by DISCOMs fabricated out of 14 SWG CRCA sheet steel in two compartment & MS angle of size 60mmX6mm having provision for (i) Provision for fixing Trivector Meter (To be supplied by DISCOMs) (ii) Provision for fixing of combined CT PT Set (To be supplied by DISCOMs), (iii)TT Block, (iv) 6mm Bakelite sheet on all sides.	Nos.	**1**			
14.4	**Transformer**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
14.4.1	Supply, receiving, storing, inspection, handling , assembling ,installing in correct aligned position, effecting proper connections, testing and commissioning of outdoor type oil filled, off circuit tap changer(OCTC) **transformer** with the following specification and confirming to IS 2026(Part 1-5) No. of phases / frequency : 3 Phases/ 50 Hz - **1000KVA No Load Voltage ratio : 11/0.433 KV**	Nos.	**2**			
14.4.2	SF of rubber matting with one side corrugated as per IS specification 15652/2006	sqm	**3.50**			
14.5	**Battery Charger and Battery for DC Supply**					
14.5.1	SITC of FCBC **(Float cum boost charger)** suitable for 415V +/-10%, 50 Hz , 1-ǿ / 3 -ǿ Input & 24/ 48 /110 V DC Output natural cooled, free standing in steel sheet enclosure, SCR controlled , regulation +/-1% , Efficiency > 75% on FLAC/ DC Instruments, Selector Switch ,Built in DC Distribution Board (6 No MCB), indication , control as required of following rating: **20A+20A**	Each	**1**			
14.5.2	SITC of battery bank of min 150 AH capacity comprising SMF/VRLA batteries , MS / Teakwood battery stand , interconnect wiring etc. as required complete in all respect of rating: **48 V DC**	Each	**1**			
14.6	**HT Cable with accessories**					
14.6.1	Providing & Laying XLPE insulated IS:7098/II/85 of approved make H.T. cable for working voltage 11 K.V. earthed direct in ground including excavation of 30cmx100cm size trench, 25cm layer of river sand, II nd class bricks covering, refilling earth, compaction of earth, making necessary connection testing etc.as required of size. **3C X 70 Sqm**	m	**150.00**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
14.6.2	Providing & making heat shrinkable type indoor/outdoor/straight through terminations/joint kit of approved make suitable for XLPE insulated 11 KV cable, with required components, preparation of cable ends, testing etc. as required					
14.6.2.1	3x70 sq.mm cable I.D. termination	Set	**2**			
14.6.2.2	3x70 cable O.D. termination	Set	**2**			
14.6.2.3	3x70 cable Straight through	Set	**1**			
14.7	**Earthing for Substation and Control room**					
14.7.1	Plate Earthing as per IS:3043 with G.I. Earth plate of size 600mm x 600mm x 6.0mm by embodying 3 to 4 mtr. below the ground level with 20 mm dia. G.I. 'B' class watering pipe including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and C.C. finished chamber covered with hinged type CI cover with locking arrangement, C.I. frame of size300mm x 300mm complete with alternate layers of salt and coke/charcoal, testing of earth resistance as required.	Nos.	**7**			
14.7.2	Supplying & Laying 25x6 mm size GI earth strip in horizontal or vertical run in ground/surface/recess including riveting, soldering, saddles, making connection etc. as required.	m	**70.00**			
14.7.3	Supplying & Laying 6 SWG size GI earth wire in horizontal or vertical run in ground/surface/recess including riveting, soldering, saddles, making connection etc. as required.	m	**70.00**			
14.8	**LT panel in Dandibagh**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
14.8.1	Supply, Install, Testing and commissioning of wall/free standing floor mounted dust and vermin proof compartmentalized cubical panel made out of CRCA sheet, required hardware, duly painted by two coats of zinc/red oxide primer followed by powder coated / epoxy / PU painted with phosphatisation in grey or required shade after rinsing. The panel having PU/Neoprene rubber gasket of not less than 3mm thickness, separate detachable, gland plate M.S. base channel, hinged door with locking arrangement for equipment/switchgear. Thickness of sheet shall not be less than 1.6mm up to 600mm length/width of any compartment and be of 2.0mm above 600mm. Load bearing structure shall be of 2.0mm thick sheet supported by base M.S. channel if required. Side walls and cable alley compartments having bolted type doors with detachable extension type structure with **1.** Aluminum bus bar, **2.** 3 nos of 4-pole air circuit breaker, **3.** 5 nos of 100A MCCB for chlorinator, **4.** 12 nos of 63A MCB, **5.** 5 nos of 630A MCCB with CT, PT, ammeter, voltmeter, Phase indication lamp **6.** 290KVA capacitor bank with required contactors, etc. as per the Single line diagram and specification. **Soft Starters for Tube wells in Dandibagh**	Nos.	**1**			
14.8.2	SITC of Soft Starters with panel supplied by manufacturer conforming to applicable standards with logic inputs & outputs, relay outputs and analogue outputs, plug in I/O connections, display of electrical parameters, state of load & operating time, RS 485 serial link for connections to Modbus. 90KW	Nos.	**5**			
14.9	**Panel in the Pump House of the Tube Well**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Supply, Install, Testing and commissioning of wall/free standing floor mounted dust and vermin proof compartmentalized cubical panel made out of CRCA sheet, required hardware, duly painted by two coats of zinc/red oxide primer followed by Powder coated / epoxy / PU painted with phosphatisation in grey or required shade after rinsing. The panel having PU/Neoprene rubber gasket of not less than 3mm thickness, separate detachable, gland plate M.S. base channel, hinged door with locking arrangement for equipment/switchgear. Thickness of sheet shall not be less than 1.6mm up to 600mm length/width of any compartment and be of 2.0mm above 600mm. Load bearing structure shall be of 2.0mm thick sheet supported by base M.S. channel if required. Side walls and cable alley compartments having bolted type doors with detachable extension type structure with aluminum bus bar, **1.**)400 A MCCB Incomer with metering CTs, multifunction meter compatible to SCADA, Ampere meter with SS, Voltmeter with SS, Indicating Lamps, Control Fuse, wiring etc. **2.**) 250A MCCB **3**.) 100A MCCB **4.**) 5 nos of 32A MCB **5.**) 25KVA of capacitor bank of different size with contactor, **6.**) 2 nos of Earth pit with required length of Earth flat**, 7.**) Star delta Starter with MCB, Main and Aux Contactor/L Relay, L/R Selector Switch,3 Indicating lamps, Start-Stop Push Button ,Control MCB with panel with all accessories as per specification and Employers requirement **with following rating**					
14.9.1	0 to 15KW	Nos.	**5**			
14.9.2	16KW to 25KW	Nos.	**4**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
14.9.3	26KW to 35KW	Nos.	**6**			
14.9.4	36KW to 45KW	Nos.	**4**			
14.9.5	More than 45KW	Nos.	**5**			
14.10	**LT Flat flexible cable for Tube wells**					
	P/Laying XLPE insulated / P.V.C. sheathed cable of 1.1 KV grade with copper conductor un-armored of IS:7098-I/1554-1 approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, II nd class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size					
14.10.1	3C X 6 Sqm	m	**720.00**			
14.10.2	3C X 10 Sqm	m	**308.00**			
14.10.3	3C X 16 Sqm	m	**176.00**			
14.10.4	3C X 25 Sqm	m	**396.00**			
14.10.5	3C X 70 Sqm	m	**350.00**			
14.11	P/Laying XLPE insulated / P.V.C. sheathed cable of 1.1 KV grade with copper conductor armored of IS:7098-I/1554-1 approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, II nd class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size.					
14.11.1	4C x 70 Sqm	m	**400.00**			
14.11.2	4C x 400 Sqm	m	**150.00**			
14.12	**Electro chlorinator of various capacity in kg/hr.**					

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	Providing, erecting, commissioning & giving test & trial for a period of one month including one year free maintenance after commissioning of Electro chlorinator capable of generating chlorine from common salt by electrolysis using electrodes in form of sodium hypo chlorite solution containing 6-8 gms/lit of available chlorine in batch or continuous process and capable of providing 8 hrs. storage of hypochlorite in case of power failure. The electro chlorinator shall comprise of following 1. Electrolytic cell consisting dimensionally stable electrodes made from Gr I Titanium sheet with multi metal oxide coating. 2. Electrolyzer tank made from PVC -FRP or Acrylic.3. power pack consisting of transformer rectifier for generating suitable DC current from AC supply along with the control switch for dosing pumps, etc. through MCB's contacts, relays and wiring. 4. Control panel for the electro chlorinator consisting of DC voltage and current display income phase status unit on-off switches fuses etc. 5. Dosing tank of suitable capacity made from PVC/FRP. 6. Dosing pumps of special quality (1W+1S) suitable to handle hypo chlorite solution. 7. Entire chlorine solution pipeline shall be of PVC. Chlorine test kit suitable to measure residual chlorine					
14.12.1	1.50 kg/hr.(For Dandibagh)	Nos.	**1**			
14.12.2	1.00 kg/hr.(For Dandibagh)	Nos.	**3**			
14.12.3	0.75 kg/hr.(For Panchayati Akhara)	Nos.	**1**			
14.12.4	0.50 kg/hr.(For Masthalipur)	Nos.	**1**			
14.12.5	0.35 kg/hr. (For Joda masjid)	Nos.	**1**			
14.12.6	0.25 kg/hr. (For Individual Tube wells)	Nos.	**23**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
14.13	**Internal Lighting**					
14.13.1	**Internal lighting for Pump Rooms** with conduit wiring, required fittings as per specification and Engineers requirement.	Nos.	**39**			
14.13.2	**Internal lighting for Control Rooms** with conduit wiring, required fittings as per specification and Engineers requirement.	Nos.	**2**			
14.13.3	**Internal lighting for Service reservoir site** with underground/overhead cabling providing tube lights in the four corners and in the entrance of the reservoir, required fittings as per specification and Engineers requirement.	Nos.	**17**			
14.14	Providing, installing, testing and commissioning of **Pressure transmitters** (0-10 bar) in delivery pipes of each Tube Wells.	Nos.	**39**			
14.15	Providing, installing, testing and commission of **Ultrasonic Level sensor** with level window in the electrical panel for showing water level in Tube Wells.	Nos.	**39**			
Subtotal for Bill No. 14		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	

Bill No. 15 : SCADA, FURNITURE AND EQUIPMENTS

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
15.1	**SCADA**					
15.1.1	**Design, development, Supplying, installing, testing & commissioning of** SCADA system complete with IT hardware and software, compatible with the existing and proposed water supply system comprising the following: 1. Package-1 (Existing) 2. 37 Tube Wells 3. 17 Service Reservoirs 4. 30 DMAs 5. Package-2 (Proposed) 6. 24 nos. Tube Wells 7. 1 Clear water Reservoir – Storage & Pumping 8. 1 GLSR	1 set	**1**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
	As per section 2.6.5 of Bid Document GWSP1, Vol-1 and Section 6 of Bid Document GWSP1, Vol-II, Technical Specifications – Operations including Remote communication hardware and software for interfacing SCADA and server cum operator work station and operator Engineering station with 3Nos of HMIs complete with redundant system backup , industrial grade TFT monitors, key boards, operating system, power backups and furniture desks, chairs and cupboard etc					
15.2	**Supply, delivery, installation and commissioning of the followings**	Nos.	**29**			
15.2.1	Server and net working	Nos.	**5**			
15.2.2	Computer with power backup for 5 hour	Nos	**20**			
15.2.3	Bulk printer	Nos	**5**			
15.2.4	Desktop LaserJet printer	Nos	**5**			
15.2.5	Handheld billing printer	Nos	**30**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
15.2.6	**Latest Soft wares for 5 users for subscription up to one year after the end of contract period.**					
15.2.6.1	MS office	No	**5**			
15.2.6.2	Handheld unit with mobile software for billing	No	**3**			
15.2.6.3	Hand billing software	No	**5**			
15.2.6.4	MS project	No	**1**			
15.2.6.5	AutoCAD	No	**2**			
15.2.6.6	Water Gems	No	**1**			
15.2.6.7	Billing system	No	**1**			
15.2.6.8	Maintenance Management system	No	**1**			

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
15.2.7	**Furniture for Consumer centers**					
15.2.7.1	Office Desks with drawers	No	**40**			
15.2.7.2	Computer wheeled chairs with arms	No	**80**			
15.2.7.3	Airport chairs	No	**50**			
15.2.7.4	Sign boards	No	**5**			
15.2.7.5	Pantry equipment with water cooler	No	**5**			
15.2.7.6	Steel almirah of reputed make	No	**5**			
15.2.7.7	Interior like window curtains, wall clock, decorating lights, notice board and white boards	No	**5**			
Subtotal for Bill No.15		**In Figures**				
		In Words				

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	

Bill No. 16 CARRIAGE OF MATERIALS FOR SAND, COARSE AGGREGATE, BRICKS AND STONES IN CIVIL WORKS

Item No.	Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		Amount To be Quoted by Bidder (INR)
				Figures	Words	
16	**CARRIAGE OF MATERIALS FOR SAND, COARSE AGGREGATE, BRICKS AND STONES IN CIVIL WORKS**					
16.1	Sand	tonne/km	**46868.00**			
16.2	Coarse Aggregate	tonne/km	**67090.00**			
16.3	Bricks	tonne/km	**4734.00**			
16.4	Stone	tonne/km	**476.00**			
Subtotal for Bill No. 16		**In Figures**				
		In Words				

PRICE PROPOSALS - PART B: OPERATIONS SERVICE

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 17: OPERATION AND MAINTENANCE OF WATER SUPPLY SYSTEM	

S.No.	Item Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		AMOUNT to be Quoted by Bidder (INR)
				Figures	Words	
17	**Operation and Maintenance of Water Supply System**					
17.1	Operation and maintenance of water production, transmission and storage facilities	quarter	18			
172	Operation and maintenance of existing distribution network	quarter	18			
17.3	Operation and maintenance of New Distribution Networks, constructed as DMAs	DMA quarter	300			
Subtotal for Bill No. 17		**In Figures**				
		In Words				

Note: The Bidder shall separately provide a break-up of salaries, wages, consumables, maintenance for civil, mechanical, electrical and instrumentation, training of BMC staff, administration, management, insurance and all other costs such as establishment and operation of offices in a separate sheet for analysis by the Employer

PRICE PROPOSALS - PART C: PROVISIONAL SUM

Name of Project	**Bihar Urban Development Investment Program – Tranche 2 (ADB Loan: Applied for / Project No. IND-41603-023)**
Name of Employer:	**Bihar Urban Infrastructure Development Corporation Limited (BUIDCo)**
Contract Title:	**Improvement of Water Supply System in Gaya Municipal Corporation**
Contract Package No:	**GA/WS/01**
Bidder's Name :	
Bill No. 18: PROVISIONAL SUM	

Sl. No.	Item Description	Unit	Quantity	Rate To be Quoted by Bidder (INR)		AMOUNT to be Quoted by Bidder (INR)
				Figures	Words	
18	**Provisional Sum**	-	LS	Not to be quoted		
Subtotal for Bill No. 18		**In Figures**		**90,000,000**		
		In Words		**Ninety million only**		

Section 5 - Eligible Countries

This Section contains the list of eligible countries.

1.	AFG	Afghanistan	36	MON	Mongolia
2.	ARM	Armenia	37.	MYA	Myanmar
3.	AUS	Australia	38.	NAU	Nauru
4.	AUT	Austria	39.	NEP	Nepal
5.	AZE	Azerbaijan	40.	NET	The Netherlands
6.	BAN	Bangladesh	41.	NZL	New Zealand
7.	BEL	Belgium	42.	NOR	Norway
8.	BHU	Bhutan	43.	PAK	Pakistan
9.	BRU	Brunei Darussalam	44.	PAL	Palau
10.	CAM	Cambodia	45	PNG	Papua New Guinea
11.	CAN	Canada	46.	PHI	Philippines
12.	PRC	China, People's Republic of	47.	POR	Portugal
13.	COO	Cook Islands	48.	SAM	Samoa
14.	DEN	Denmark	49.	SIN	Singapore
15.	FIJ	Fiji	50.	SOL	Solomon Islands
16.	FIN	Finland	51.	SPA	Spain
17.	FRA	France	52.	SRI	Sri Lanka
18.	GER	Germany	53.	SWE	Sweden
19.	GEO	Georgia	54	SWI	Switzerland
20.	HKG	Hong Kong, China	55.	TAJ	Tajikistan
21.	IND	India	56.	TAP	Taipei, China
22.	INO	Indonesia	57.	THA	Thailand
23.	IRE	Ireland	58.	TIM	Timor-Leste
24.	ITA	Italy	59.	TON	Tonga
25.	JPN	Japan	60.	TUR	Turkey
26.	KAZ	Kazakhstan	61.	TKM	Turkmenistan
27.	KIR	Kiribati	62.	TUV	Tuvalu
28.	KOR	Korea, Republic of	63.	UKG	United Kingdom
29.	KGZ	Kyrgyz	64.	USA	United States
30.	LAO	Lao PDR	65.	UZB	Uzbekistan
31.	LUX	Luxembourg	66.	VAN	Vanuatu
32.	MAL	Malaysia	67.	VIE	Viet Nam
33.	MLD	Maldives			
34.	RMI	Marshall Islands			
35.	FSM	Micronesia, Federal States of			

Section 6 – Employer's Requirements

Contents

1 INTRODUCTION

1.1Preamble

1. The overall objective of the Gaya Water Supply Project (GWSP) is to deliver a continuous, pressurized supply of safe water to the entire population of Gaya town. GWSP will be executed in two packages (and under two separate contracts) under the Bihar Urban Development Investment Program (BUDIP)[1]. The Scope of Services under Package 1, Improvement of Water Supply in Gaya Municipal Corporation (GWSP1), includes the rehabilitation of the existing water source works, rehabilitation and construction of new rising mains, construction of new overhead storage tanks and ground level storage reservoirs, rehabilitation of existing ground level storage reservoirs, construction of new transmission mains, the renovation and construction of distribution mains and pipelines and providing all authorized connections with water meters, as well as the operation, maintenance and management of the entire water supply system except for the works constructed under Package 2.

2. Package 2will provide new water source works and transmission mains for the supply of Bulk Water to the Gaya water distribution system. The construction periods of Packages 1 and 2 are expected to be coterminous, such that bulk water extracted from the new water source works under Package 2 will be supplied to the water supply system developed under Package 1. As a part of the Package 1 works, certain Supply Points are identified to connect the Package 2 transmission. The development of Package 2 further does not affect Package 1.

3. The specific objectives of GWSPPackage1 are:
   - Efficient use of existing water sources;
   - Efficient supply of water both with respect to the quantities of water supplied as well as the energy used for water supply to rehabilitated existing and newly constructed storage reservoirs;
   - Efficient storage and transmission of water to the Service Area;
   - Establishment of 30 District Metered Areas (DMA):
   - Efficient distribution of water in each DMA;
   - A reliable 24/7 supply of water;
   - A reliable supply of good quality drinking water compliant with Indian water quality standards;
   - Water supply operations that are focused on good quality services to its consumers, responding to complaints and effectively resolving those complaints;
   - Training of staff of the Gaya Municipal Corporation (GMC), enabling a further institutional development of the Municipal water section.

4. The Employer´s Requirements include the Scope of Services as specified in Chapter 2, the Performance Standards & Measuring Framework as specified in Chapter 3, references to the Specifications (Chapter 4), Drawings (Chapter 5) and Supplementary Information (Chapter 6). The Personnel Requirements are specified in Chapter 7 and the Equipment Requirements in Chapter 8.

5. The Scope of Services described hereunder in Chapter 2 is indicative and may not be exhaustive or complete. The Contractor shall undertake its own detailed investigation and verification of the Project Facilities and of the designs prepared by the Employer to ensure that specific objectives of GWSP Package 1 can be achieved.

6. The Scope of Services shall include all technical, managerial, administrative, commercial, environmental, and social interventions as required in accordance with acceptable, prudent water utility construction and management practices, ensuring safe and sustainable drinking water supply services to the Consumers in the Service Area.

[1] http://www.adb.org/projects/documents/bihar-urban-development-investment-program-rrp

1.2Definitions

7. The words, terms and expressions beginning with capital letters and defined under this Section 6, Chapter1.2 including those in Section 7 - General Conditions of Contract and those in Section 8 – Particular Conditions of Contract shall, unless the context otherwise requires, have the meanings ascribed thereto/herein;

7.1. "Boundary Limits" shall mean the boundary within which the Contractor has the responsibility of providing Services in accordance to the terms and conditions under this Contract;

7.2. "BUDIP" means Bihar Urban Development Investment Program;

7.3. "BUIDCo" means Bihar Urban Infrastructure Development Corporation Limited;

7.4. "Bulk Water" means the treated bulk water supplied by the Employer through a separate contract GWSP Package 2to specific Supply Points;

7.5. "Consumer" or "Customer" means all entities (including individuals) to which/whom GMC provides water services through the existing water distribution system andwill supply through the newly developed system and includes all existing customers at the time of the Commencement Date and entities which become customers after the Commencement Date;

7.6. "Consumer Water Connection Points" means the water connection points from which Customers take delivery of water.

7.7. "Construction Completion Date" is the date when all construction works have been completed and commissioned.

7.8. "Construction Plan" means the Contractor's Plan for implementation of construction works.

7.9. "CPHEEO" means the Central Public Health and Environmental Engineering Organization under the Ministry of Urban Development, Government of India;

7.10. "Customer Service Centers" or "CSC" means the special infrastructure planned and implemented by the Contractor to provide commercial and public relations services to consumers under this Contract;

7.11. "Critical Measurement Points" shall mean the locations as agreed by the Employer in the Construction Plan and also as added during the term of the Contract for undertaking measurement of flow and pressure in the water supply system for facilitating the monitoring of Minimum Service Levels stipulated in Chapter 3 – Performance Standards of this Section 6;

7.12. 'DMA' shall mean District Metering Area and shall comprise of a distinct area within a distribution zone with defined water entry point(s) and water outlets through customer connections.

7.13. "DMA Start of Operations Date" is the date when water supply services in the first DMA will be based on a 24/7 basis of water supply operations

7.14. "DPR" means the Detailed Project Report of Gaya Water Supply Project (GWSP I) prepared and approved by the Employer;

7.15. "Design and Supervision Consultant" or "DSC", the agency appointed by the Employer to provide design and construction supervision services under a separate Contract;

7.16. "Electricity Department" means the local service provider supplying electrical energy for Operation Service of the Facilities;

7.17. "Existing Assets" means those infrastructure components, plant, machinery, equipment and any other units existing in the Service Area as on the Commencement Date;

7.18.

7.19. "Minimum Service Levels: means the levels of service to be maintained in the operations, maintenance and management and service delivery to consumers more so described in Chapter3 – Performance Standards in this Section 6;

7.20. "New Assets" means those infrastructure components, plant, machinery, equipment and any other units procured, supplied, installed, erected and commissioned by the Contractor during the Contract Period other than those existing on the Commencement Date;

7.21. "Operation and Maintenance Plan" means the plan for operating and maintaining the water supply system, submitted by the Contractor, and agreed by the Engineer

7.22. "Performance Related Payment" means payment to the Contractor based upon achievement of Performance Standards.

7.23. "Performance Standards" mean the Minimum Service Levels to be achieved and maintained by the Contractor during each period of the Contract set forth in Chapter 3 – Performance Standards in this Section 6;

7.24. "Potable Water Specification" means the water quality requirements of potable water to be supplied to the Consumers as stipulated in Table 2.2 Recommended Guidelines for Physical and Chemical Parameters and Table 2.3 Bacteriological Quality of Drinking Water, in the Manual on Water Supply and Treatment, CPHEEO, Government of India, Ministry of Urban Development, New Delhi;

7.25. "Preparation Phase" is the period between the Commencement Date and the date the Contractor takes over operations of the entire water supply system from the GMC;

7.26. "Project Facilities" or "Facilities" means all existing and proposed infrastructure facilities including open lands, buildings, structures, Plant, machinery, and equipment under GWSP;

7.27. "Project Information Memorandum" or "PIM" shall mean the reports prepared by the Employer detailing the Project as provided in Chapter 6 - Supplementary Information and available at the e-data room set up by the Employer;

7.28. "Program Management Consultant" or "PMC" means the agency appointed by the Employer to provide project management advisory services to the Employer under a separate contract;

7.29. "PHED" means Public Health Engineering Department of the Government of Bihar;

7.30. "PRV" means Pressure Reducing Valve;

7.31. "Scope of Services" shall mean all those services to be provided by the Contractor in accordance to the obligations, activities, responsibilities and tasks in implementing the Project to achieve the Minimum Service Levels in accordance to the Chapter 3– Performance Standards;

7.32. "Services" means all those activities, interventions, actions and tasks required as part of the implementation of GWSP1 including all planning, verification of detailed engineering design, procurement, construction, rehabilitation, operations, maintenance, and management in providing continuous pressurized water supply to the consumers in Gaya;

7.33. "Service Area" means the area covered by the current GMC administrative municipal boundaries;

7.34. "Supply Points" means the points where the Employer will supply Bulk Water to the Contractor;

7.35. "Training Plan" means a report containing the detailed GMC staff training program;

2 SCOPE OF SERVICES

2.1Implementation schedule

2.1.1Components and phasing of the project

8. The Contract consists of two parts:
    1. **Works**
    2. **Operations**, including **Operation Services** and **Training**

8.1. The **Works** part consists of 33 sub-parts or Sections:
- Section 1: Existing Water Sources;
- Section 2: Pumping Transmission Mains and Reservoirs, subdivided in Section 2.1: Pumping Transmission Mains and Section 2.2: Reservoirs;
- Sections 3.1 up to 3.30: Distribution network and service connections in each of the 30 DMAs.

8.2. The **Operation Services** part consists of 3 subparts:
- Subpart 4: Operation of the existing water sources, existing and new reservoirs and transmission mains;
- Subpart 5: Operation of the existing distribution network;
- Subpart 6: DMA Operations that is subdivided into Sub-parts 6.1 up to 6.30: 24/7 Operation and Maintenance of each DMA.

8.2.1. In addition to the technical operation and maintenance of the water supply facilities, Operation Services also includes management, administration, financial operations and customer relations and these are integrated in the 3 sub-parts.

8.3. The **Training**(subpart 7)

9. Two parallel phases in project implementation are distinguished:

9.1. Phase 1 – **Construction Phase** will take 42monthsand will include**:**
- Construction of Works under Section 1 (12 months);
- Construction of Works under Section 2 (21 months);
- Construction of Works under Section 3 (42 months).

9.1.1. During the implementation of Sections1.1 – 1.30 (DMA Works) the Contractor shall not carry out Works in more than eight (8) DMAs simultaneously, except with the explicit approval of the Engineer.

9.1.2. Works under Section 3 includes the installation of customer service connections. Upon completion of the Construction Phase, it is expected that not all service connections will have been installed and installation is expected to be continued after the Construction Completion Date.

9.2. Phase 2 – **Operation and Training Phase** will take 60months and will include:
- Operation preparation period (6 months) after which Operation will commence:
- of Subpart 4 (54 months)
- of Subpart 5 (36 months approximate)
- of Subparts 6.1 – 6.30 (45 months approximate)
- of Subpart 7 (54 months)

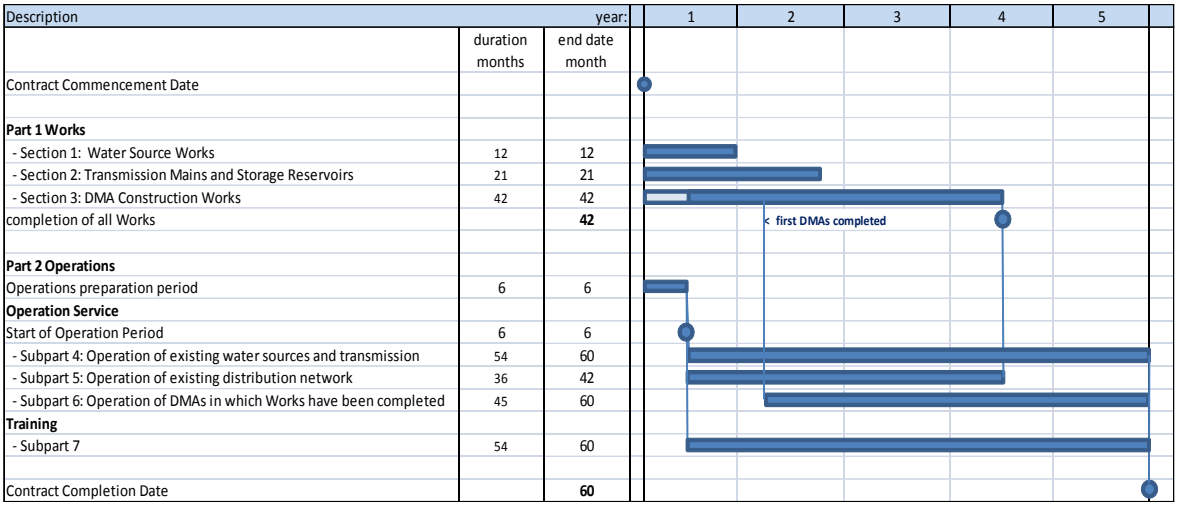
9.2.1. The implementation of Subpart6 (DMA Operations) will start after the Works in the first DMA has been commissioned, and its scope will gradually increase until all 30 DMA Works have been commissioned.

9.2.2. The scope of implementation of Subpart 5 (Operations of the existing distribution system) will gradually reduce with the increase of the scope of Sub-component 6, and will be completed once all 30 DMA Works have been commissioned.

9.2.3. Implementation of Subpart 4 (Operations of existing water sources, reservoirs and transmission mains) and Subpart 7 (Training) will continue throughout the entire Operation Phase.

9.3. Figure 2.1.1 summarizes the phasing of project implementation graphically.

Figure 2.1.1 schematization of project implementation



2.1.2Contract Key Dates

10. The following key dates govern the terms of the Contract:

10.1. The Commencement Date shall be as per General Conditions of Contract, Clause 8.1 [*Commencement of Works*].

10.2. Works shall start at the Commencement Date;

10.3. The Construction Completion Date shall be the date **42 months** from the Commencement Date when all Works shall be finalized with the following provisions:

- Section 1 shall be completed within 12 months from the Commencement Date;
- Section 2 shall be completed within 21 months from the Commencement Date;
- Section 3 shall be completed within 42 months from the Commencement Date;

10.4. The Operations Commencement Date shall be the date **6 months** from the Commencement Date, from which date the Contractor shall be responsible for operations and maintenance of the entire water supply system;

10.5. The Contract Completion Date shall be **60months** from the Commencement Date.

2.2Boundary Limits

11. The Boundary Limits for undertaking planning, verification of drawing, construction, rehabilitation, distribution, operations, maintenance and management by the Contractor, include the entire water supply chain starting from each of the production tube wells currently in operation and extending up to the customer boundary limits including the customer meter if installed on the existing connections and up to the customer meter in all the new or rehabilitated connections.

12. Facilities to be constructed and operated under package 2 are not included in the Contractor's Scope of Services.

13. The project area is within the existing jurisdiction of Gaya Municipal Corporation. In case the jurisdiction, during the course of the Contract, is extended beyond the existing boundary limits, then it shall not be the responsibility of the Contractor to provide water services to these extension areas.

2.3Preparation Activities

14. The Contractor shall establish contact with all relevant stakeholders, including consultants under the Bihar Urban Development Investment Program (BUDIP), and become familiar with the Gaya water supply system, and the applicable standards and guidelines for water supply design, and with past and current on-going works in the Service Area.

15. The Contractor shall read, familiarize itself with and understand the relevant institutional arrangements and governing laws to determine in detail which roles the Gaya Municipal Corporation (GMC), as the asset holding and operating entity play or intends to play in the following: (i) sanction of water connections, (ii) installation of water connections, (iii) disconnections and reconnections, and (iv) services to urban poor and vulnerable; (v) setting water tariff etc.

16. The Contractor shall satisfy itself to the nature and scope of work and the prevailing site conditions.

17. The Contractor shall liaise with the GMC, the local traffic police and other Government Agencies regarding governing laws and regulations in order to undertake studies and construction activities under the Contract such as:
    17.1. Environmental and social impact assessments and prevention, mitigation and monitoring of impacts during construction;
    17.2. Compensation for damages to property;
    17.3. Occupational health and safety including workers compensation;
    17.4. Consultation of beneficiary populations; and
    17.5. Signage for construction works.

18. There are several other water supply related works on-going or have been recently been completed by GMC, Public Health Engineering Department (PHED)or Bihar Urban Infrastructure Development Corporation (BUIDCo). The Contractor shall review all the reports and ensure that the Construction Plan, the Operation and Maintenance Plan and the Training Planto be prepared by the Contractor do not duplicate any measure already financed and implemented, or proposed to be implemented under contract package 2. The Contractor shall also ensure that investments proposed as part of the Construction Plan are well coordinated and scheduled so that it can be adequately implemented, constructed, managed, supervised, monitored and finally be evaluated in terms of its impact. However, these investments shall be complimentary to the outcomes of the previous or other ongoing interventions.

19. The Contractor shall make a comprehensive assessment of the capacity, performance and condition of all existing water distribution facilities, shall obtain secondary information on the capacity, performance and condition of all existing water supply sources and the infrastructure for water abstraction, transmission and storage, and shall comprehensively assess existing resources, services, and management practices in the Service Area.

20. The Contractor shall acquaint himself the Detailed Project Report (DPR)that have been prepared for the projectin order to obtain a good understanding of the background of the projects.

21. The Contractor shall have interviews with staff to be posted on a permanent or temporary basis with the Contractor during the Operation Phase. The interviews have to be used as a basis for the preparation of the Training Plan.

22. The Contractor will prepare three Plans, of which the details of their contents are specified in Paragraph 2.8[*Reporting*]:
    22.1. Construction Plan describing implementation of all Works Sections and with emphasis on the time sequence followed for the implementation and completion of Works in the different Sections, taking into account the water production, storage and supply chains formed by the various Sections of Works;
    22.2. Operation and Maintenance Plan, describing all water supply operations and maintenance services to be provided by the Contractor;
    22.3. Training Plan, describing all GMCstaff training activities to be conducted.

23. A preliminary draft of the Construction Plan shall be submitted by the Contractor with the detailed time program as required under the Section 7 [*General Conditions of Contract*], Clause 8.3 [*Programme*] in sufficient detail to support the detailed time programme.

24. The construction plan shall be submitted by the contractor to the Engineer before one month from the commencement date for review and comments by the Employer and has to be approved with in a month from the commencement date. The operation and maintenance plan and training plan shall be submitted by the contractor within 3 months from the commencement date and it has to be approved within 6 months from the commencement date.
25. Two types of office space shall be provided:

    25.1. For all Works-related Services: The Contractor shall make its own arrangements for renting and acquiring sufficient land for erection of its own offices, facilities, as required, for carrying out test at site and of stores plus parking / maintenance area for vehicles and equipment to be used for the Works at its own expenses. It shall include provisions for the Engineer as further detailed in the Technical Specifications.
    25.2. For the Operation and Training Services: The Employer shall provide unfurnished office facilities to accommodate the Contractor's operation staff and of staff delegated to the Contractor by GMC. The Contractor shall provide office furniture and equipment for 40 people as per Bill of Quantities. The cost of operations maintenance of the office shall be included in the Contractor's Operation fees.
    The Contractor shall avail of existing facilities at the Dandibagh waterworks compound for its stores, workshop, laboratory and water meter testing requirements during Operations.

26. The Contractor shall supply software for GIS, MIS, billing and maintenance management.

2.4Environmental and Social Safeguards

27. The Contractor shall be fully cognizant with the Initial Environmental Examination (IEE), the Environmental Management Plan (EMP) and the Resettlement Plan (RP) for the project, contained in

Annex 1 and 2. In implementation of its Services, the Contractor shall adhere strictly to all requirements in the EMP and RP.

28. Upon verification of the drawing for Sections of Works, and if any design changes occur, the Contractor will in close consultation with the Employer's Safeguard Officer, update the EMP and RPfor the Project,, to reflect the changes, submit the updated EMP and RP to the Employer for review and submission to ADB. If there are any changes in the proposed pipeline routes, the Contractor will carry out detailed census surveys along proposed pipeline routes to identify the persons affected by the Works. The Contractor shall not commence any works in the concerned Sections of Works until the final approval of the RP is obtained from ADB and fully implemented by employer. In case of temporary or permanent resettlement of affected persons from Work sites, the Employer will be responsible for the effectuation and the cost of compensation entitlements of affected persons, in accordance with the approved entitlement matrix for BUIDP the contractor to.Ensure international good practices for backfilling and dewatering during construction phase. The provision for such works is made in BOQ.

2.5Part 1 – Works

29. The Contractor has to rehabilitate existing wells, rising mains, overhead storage reservoir and ground level storage reservoirs. The contractor has to construct new transmission mains, water storage reservoirs (both ground level and overhead storage tanks)and water distribution lines adequate to meet the year 2048 demand for water.

30. The existing wells are inadequate to meet the 2048 demand for water. Additional water sources and transmission capacity will be developed under a separate contract GWSP2. Under that contract, transmission mains will be designed and constructed that will be connected to the water supply system implemented under GWSP1. At the Commencement Date, the Engineer will supply the necessary information on the alignment and diameter of the GWSP2 transmission mains and the location of the connection to the GWSP1 Works. Part of the GWSP1 scope of services is to construct the necessary facilities to connect the GWSP2 transmission mains to the GWSP1 Works.

2.5.1Works Section 1 – Water Source Works

31. There are 39 existing production tube wells in Gaya of which Eight (8) wells have recently been constructed by PHED. Of these 8 wells, 2 are operated on a stand-by basis. There is no need for rehabilitation of the PHED constructed wells. One well of the 39 wells will be used for firefighting. One other well is not functional anymore, leaving the number of operational wells to be used for public water supply at 37 of which 29 will have to be rehabilitated. The Contractor shall renovate the 29 tube wells with the aim to achieve the optimal yield from each well.

32. The 37 operational wells are located at four different areas. 6 wells are located in Manpur, the part of town on the east bank of the Phalgu River. The other wells serve the western part of the town. 12 wells are located at the Dandibagh well field, 3 wells at a small well field at PanchayatiAkhara and 16 wells are scattered over the town.Table 2.5.1 lists the tube wells and their rated capacities.

Table 2.5.1 existing tube wells

Wells in Manpur Area

	TW ID	Description	Year of Construction	Rated Capacity (m³/h)	Condition	Comment
1	28	Manpur	1970	100	Working	
2	29	Manpur - Bunlydiganj	1970	75	Working	
3	30	Khadigramodyog Lakhibagh	1986	55	Working	
4	32	Kirl 1, Joda Masjid	2013	150	Working	constructed by PHED
5	33	Kirl 2, Maffassil Thana	2013	170	Working	
6	34	Kirl 3, Near Bridge	2013	75	Yet to be commissioned	

Wells at Panchayati Akhara well field

	TW ID	Description	Year of Construction	Rated Capacity (m³/h)	Condition
1	6	Panchayati Akhara No. 1	2000	100	Working
2	7	Panchayati Akhara No. 2	2006	100	Working
3	17	Panchayati Akhara No. 3	1986	100	Non-working

Wells at Dandibagh well field

	TW ID	Description	Year of Construction	Rated Capacity (m³/h)	Condition	Comment
1	1	Dandibagh TW 1	1986	220	Working	
2	2	Dandibagh TW 2	1986	220	Working	
3	3	Dandibagh TW 3	1986	220	Working	
4	4	Dandibagh TW 4	1986	220	Working	
5	5	Dandibagh TW 5	1986	220	Working	
6	21	Visnupad	1986	130	Working	
7	22	Bypass	1986	75	Working	
8	35	New TW Kirloskar 1	2013	170	Working	constructed by PHED
9	36	New TW Kirloskar 2	2013	170	Working	
10	37	New TW Kirloskar 3	2013	170	Yet to be commissioned	
11	38	New TW Kirloskar 4	2013	170	Yet to be commissioned	
12	39	New TW Kirloskar 5	2013	75	Yet to be commissioned	

Wells scattered over the Main City area (west)

	TW ID	Description	Year of Construction	Rated Capacity (m³/h)	Condition
1	8	Azad Park	1986	55	Working
2	9	Dhobighat	1999	40	Working
3	10	Central School	1986	75	Working
4	11	Nigam Store	2000	20	Working
5	12	Gurudwara	1993	55	Working
6	14	New Godown	1998	55	Working
7	15	Kharkhura	2000	40	Working
8	16	Delha	2000	40	Working
9	18	Janata Colony 1	2006	40	Working
10	19	Janata Colony 2	2000	20	Working
11	20	Pilgrim Hospital	2000	20	Working
12	23	Bairagi Powerganj	1986	55	Working
13	24	Bageshwari Pachim	1986	20	Working
14	25	Pramaheshwar	1986	75	Working
15	27	Hata Godown	1986	55	Working
16	26	Kauvasthan	1986	20	Working

Note: status as per DPR, May 2014

33. The29 tube wells to be renovated shall be redeveloped by removing any incrustation and clogging from the well screens and the gravel/aquifer around the well assembly. For this purpose, the existing pumping machinery is to be removed from the tube wells and its depth and static water level will be measured and recorded. The redevelopment work shall be undertaken in sequence such that total water supply is not disturbed. Solution of Sodium Hexa Meta Phosphate or any other suitable chemical with the approval of the Engineer will be poured in the tube wells and kept for 24 hours. The tube wells shall then be developed with compressed air for at least 10 hours or till all incrustation/clogging is removed and sand free water is obtained.

34. For the 29 tube wells, a pump test shall be carried out for 6 hours for each tube well with a pump of capacity twice that of the likely safe yield of tube well to determine (a) safe yield of the tube wells (b) drawdown in tube wells at recommended safe yield and (c) water pumped is sand free while pumping at recommended discharge. The development work and pump test will be carried out carefully such that tube wells is not damaged or adversely affected.

35. The Contractor shall install new pump sets on all 29 tube wells. The Contractor shall determine duty conditions (optimum pump yield and delivery head) for each existing and operational tube well depending upon the safe yield availability in each well. Contractor shall submit the duty conditions of the proposed pumps for approval by the Engineer. The Engineer may decide to cancel the installation of a new pump set in case the safe yield is insufficient. The duty conditions of all pumps to be installed have to be reviewed in order to optimise interchangeability. Contractor will have to supply one spare submersible pump for each duty condition as provided in BOQ to facilitate quick replacement.

36. New Vertical Turbine (VT) Pump sets shall be provided in the 5 tube wells located at Dandibagh well field and submersible pump sets of 250mm nominal OD shall be provided on remaining tube

wellscomplete with column assembly in case of VT pumps and riser pipe assembly in case of submersible pumps as per specifications. However, pumping sets installed in the 8 new Kirloskartube wells will not be replaced.

37. Electro-magnetic flow meters shall be installed in all 37 operational tube wells, including 8 recently constructed tube wells.

38. A new electric panel shall be provided for each tube well comprising of incoming MCCB/ACB, Star Delta Starter, Amperemeter, & Voltmeters with selector switches, indicating lamps, protection relays etc. as per SLD placed in drawing section. The panel shall also have outlets for local lighting and for operation of Chlorinator. Power capacitors of required capacity shall also be provided in the panel or attached to it separately. However, the existing panels provided in 8 new Kirloskartube wells will not be replaced.

39. The condition of 11/0415 KV substation of (300+250+100) KVA is not good. The existing transformers are old and have not undergone maintenance for long time and need replacement. Protection for the transformers either on HT side or on LT side is not available. A new substation will be designed and constructed in place of existing one by providing two 1000 KVA 11/0.415 KV transformers (1Working+1Stand by) with necessary protections through 11 KV VCB, LAs and ACB on LT side with proper cabling. A Single Line Diagram for the arrangement of substation is placed in Drawing. The electric substation shall conform to the requirements of Indian Electricity Act 1952, relevant Indian Standards and regulations issued by local electricity companies. 11KV power supply will be available from the existing 11KV feeder coming from a 33/11KV substation just outside the Dandibagh Compound.

40. A control room will be constructed in Dandibagh compound for housing all HT/LT switchgear and panels for operation of substation and centralized operation of the 5 Tube Wells. Push button stations shall be provided on each tube well for starting and stopping of respective motors locally along with an ampere meter and a volt meter.

41. Each tube well shall be provided with one Pressure Gauge 150mm dia, one Butterfly valve, one Non Return Valve and one Electro magnetic flow meter as per specifications in the delivery pipe line of the TW. MS pipe delivery line up to the rising main pipe line shall also be provided as per specifications.

42. Provide an electronic water level gauge in each tube well for measuring static and pumped water level on a regular basis and bring the output to the control panel as per specifications. The system should be suitable for recording the water level history which can be transferred to logger.

43. One electro-chlorinator shall be provided in each tube well room of all 37 operational tube wells (including the 8 wells recently constructed by PHED) for chlorination of water pumped online in the delivery line including an electrical dosing pump as per specifications. The capacity of each chlorinator shall correspond to dose requirement equivalent to at least 2(mg/l) for the yield of the tube well but shall have minimum capacity of 1kg/hour. In case of tube wells located in Dandibagh area, the Electro Chlorinator shall be installed in the control room proposed under this contract and shall have capacity to provide dose of at least 2mg/litre for the total pumping capacity of all tube wells located in that area. The chlorine dose shall be pumped to each pumping main pipe line going from Dandibagh to Brhamyoniservice reservoirs.

44. There are 6 tube wells which does not have rooms to house the pumps. Pump rooms shall be constructed on these sites as per drawing and specifications. The pump rooms at remaining tube wells need rehabilitation of civil works like roof repair, plaster repair, flooring, replacement of doors and windows etc. The existing electric wiring in the pump room will be completely replaced as per specifications. This rehabilitation work is to be done as per specifications to make them structurally sound and presentable. The surroundings around the tube well shall be improved to prevent collection of sullageor filth near it.

2.5.2Works Section 2 -Transmission (Rising) Mains and Reservoirs

45. Storage reservoirs have been designed by the Employer and drawings of the structures are being provided. The contractor will re-confirm the soil bearing capacity (SBC) at all the proposed overhead tank (OHT) sites and lowerof the two values (one adopted in the design and another ascertained by the Contractor) of the SBC will be adopted for re-design of the foundation by the Employer. The working drawings will be issued by the Engineer as and when required.

46. Nine (9) completely new storage reservoirs shall be constructed, including six (6) Overhead Tanks (OHT) and three (3) Ground Level Storage Reservoir (GLSR) on hillocks. See Table 2.5.2.

47. The Contractor shall undertake the rehabilitation of the existing Ground Level Service Reservoirs and the existing OHT to make them fit for service as well as to monitor the flow and pressure regimes, See Table 2.5.2. The rehabilitation works include structural repairs if any, painting, cleaning and disinfecting the container, installation of water level indicators, reconditioning of all valves and piping for inlet, outlet, wash out, and overflow, cleaning the yard, installation of flow monitoring instrumentation, lighting, and appropriate signage including the testing of rehabilitated reservoirs for water tightness.

Table 2.5.2storage reservoirs

ID	Location	Storage Capacity, ML	scope of Works
	Overhead Tanks – OHT		
1	JodaMaszid	2.15	to be constructed
3	BudvaMahadev	1.0	to be constructed
4	Mastalipur	2.0	to be constructed
5	BusundaMela	2.15	to be constructed
9	Ajad Park	0.45	existing, to be renovated
14	behind Delha Police Station 1A	1.5	to be constructed
16	behind Delha Police Station 1	2.15	to be constructed
	Ground Level Reservoirs - GLSR		
6	Ramshila Hill	0.22	existing, to be renovated
7	Ramshila Hill	2.6	to be constructed
8	Murli Hills	1.63	existing, to be renovated
10c	Brahmayoni Hills	4.64	to be constructed
10d	Brahmayoni Hills	4.64	to be constructed
10a	Brahmayoni Hills	1.816	existing, to be renovated
10b	Brahmayoni Hills	1.816	existing, to be renovated
11	Brahmayoni Hills	3.632	existing, to be renovated
12	Brahmayoni Hills	3.632	existing, to be renovated
13a	ShringhSthan	4.54	existing, to be equiped

48. Each reservoir will be provided with a float operated valve, lightening arrester, water level indicator, level sensor, Electro Mangenetic flow meter with remote reading facility of appropriate size at the outlet pipe, inlet/outlet/overflow/washout flanged pipes of Ductile Iron with Butterfly Valves (except for overflow pipes) complete as per drawing and specifications. Plinth protection shall also be provided for each reservoir against flooding/overflow etc. The wash out pipes will be taken to the nearest drain for disposal of wastewater. The overflow pipe will normally be connected to distribution transmission main or alternatively to nearest drain as approved by the Engineer, but will not have any regulating valve.

49. The Contractor shall rehabilitate existing Transmission (Rising) mains to all of the existing storage reservoirs. The Contractor shall perform pressure tests, to assess whether the rehabilitated pumping mains comply with the requirements.

50. There are three Cast Iron rising mains 350 mm, 450 mm and 600 mm of 1.6 km length each from Dandibagh to Brahmayoni Hills reservoirs. One more DI rising main 450 mm of 2.4 km length has been laid recently from Dandibagh to Shringsthan GLSR. The latter pipe line(DI 450mm)isin fairly good condition. Contractor will check these pipe lines for any leakages and will plug the same to ensure that these pipe lines conform to water tightness levels specified in Indian Standards. The Cast Iron rising main 200 mm of 980 m length from PanchayatiAkhara to Ramshila hills GLSR is to be replaced. The existing air valves, which are found to be not working properly, shall be replaced.

51. New rising mains shall be laid from the existing wells to rehabilitated and new storage reservoirs. The capacity of these rising mains will be re- designed by the Employer for transmission of the safe yield of a tube well or the combined safe yield of a number of wells to the storage reservoir. Details on the number of wells connected to a rising main and the length of the mains are presented in the drawings.

52. All rising main pipe lines shall be of Ductile Iron class K9, Titon rubber gasket jointed as per specifications. The Employer will review the pipe sizes based on the final discharge of tube wells adopted after redevelopment for pump installation and redesign the same on techno-economical basis.

2.5.3Works Section 3 – Distribution network in DMAs

2.5.3.1Overall Requirements

53. The Contractor shall verify the drawing prepared by the Employer andrehabilitate and build the distribution network within the Service Areato supply the 2048 demand for drinking water in Gaya under a 7 days per week continuous supply of water at pressures between 1.2 bar and 6 bar. The transmission mains between the reservoirs and DMA feed points are included in the scope of Works Section 3.

54. The Contractor shall make arrangements for maintaining the service of the presently connected consumers at the current level during the execution of the Works (Between date of take over and till work on respective DMA is completed).

55. The Distribution Works will be implemented DMA wise. The Contractor shall be allowed to do works in only a limited number of DMAs simultaneously. Works in a next DMA shall only commence once the Works in a previous DMA has been commissioned. Figure 2.5.1 shows the locations of the DMAs.

56. As a general policy, all existing pipelines installed after 1982, with an estimated length of 72.9 km, shall be kept in service and included in the DMAs based operation of the system and in the sub-sequent proof of performance as further required in this document. All pipelines installed before 1982 in the system, with an estimated length of 64.7 km, shall be replaced by new pipes and decommissioned to the satisfaction of the Engineer and according to procedures approved by the Engineer.

57. The Contractor shall also lay pipelines for the extension of the distribution network to the areas presently populated but uncovered in terms of piped water supply services.

58. The total length of new pipelines to be laid, including pipe replacement is about 447.176 km. Table 2.5.1 gives a breakdown per DMA.

Figure 2.5.1 30 DMAs

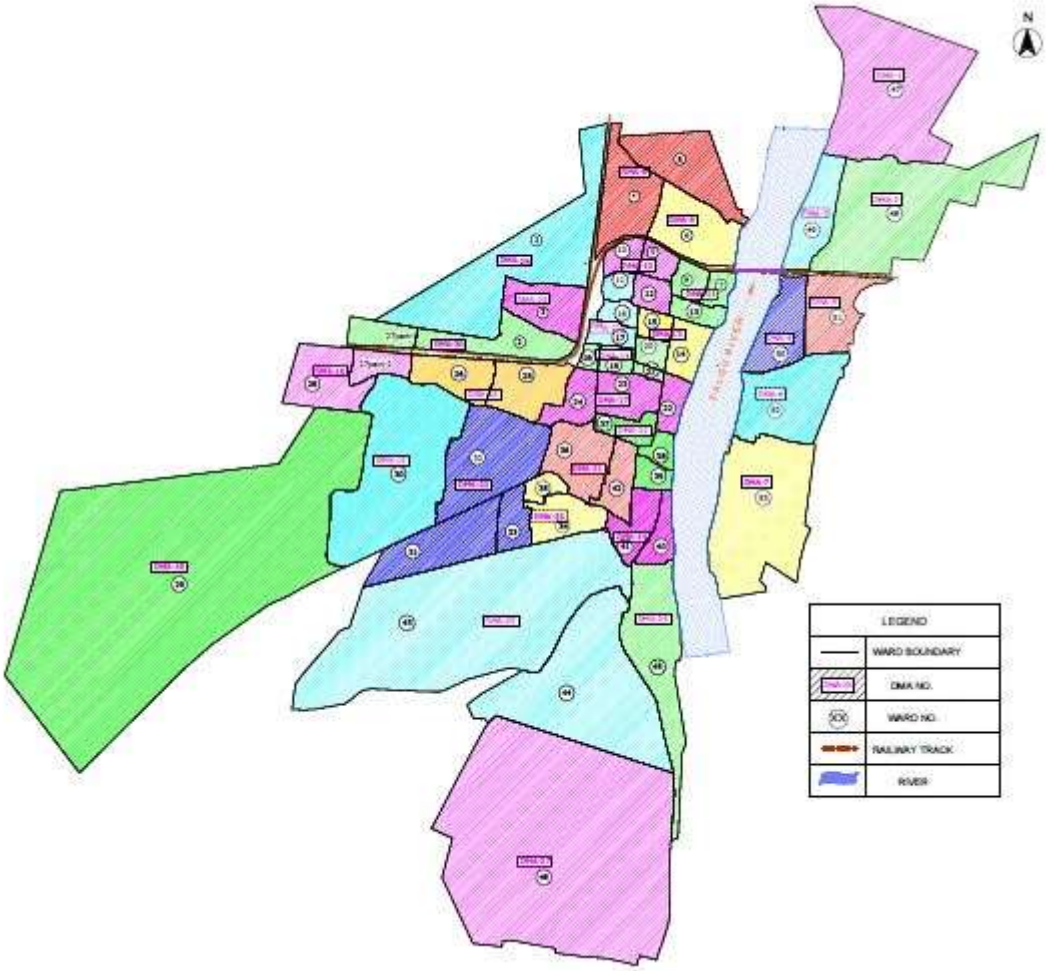


Table 2.5.1pipe laying requirements per DMA

DMA	Pipe lengths in meter			DMA	Pipe lengths in meter			DMA	Pipe lengths in meter		
	retained	new	Total		retained	new	Total		retained	new	Total
1	2800	16985	19785	11	0	12474	12474	21	1311	17982	19293
2	745	9978	10723	12	0	9706	9706	22	0	14060	14060
3	3082	9451	12533	13	0	8700	8700	23	255	14559	14814
4	4537	11483	16020	14	0	10989	10989	24	0	12889	12889
5	0	9888	9888	15	1620	9283	10903	25	4209	27980	32189

6	4724	16927	21651	16	8492	13632	22124	26	5778	10152	15930
7	4110	15939	20049	17	1243	14250	15493	27	845	13650	14494
8	0	14783	14783	18	2159	37323	39482	28	0	21119	21119
9	0	9019	9019	19	13804	25770	39574	29	0	11158	11158
10	0	14869	14869	20	12741	19580	32321	30	0	12498	12498

59. All non-metallic pipelines or underground components installed in the frame of the Contract shall be provided with metallic ribbon or other means enabling their detection by metal detectors.

60. All installed pipelines and appurtenances shall be disinfected to the satisfaction of the Engineer.

61. All Works involving excavation shall be finalized through reinstatement of the surface to the initial condition.

62. The Contractor shall make arrangements for maintaining the service of the presently connected consumers at the current level during the execution of the Works.

63. All Works involving traffic blocking shall be coordinated timely with GMC and local administration and traffic diversion measures shall be implemented by the Contractor. The Contractor shall endeavour at any time to maintain the inconvenience caused by the construction works at the lowest possible level.

2.5.3.2DMA Requirements

64. One of the main activities of this Contract is the establishment of 30District Metered Areas (DMAs). The population projections and ward wise water demand as included in DPR will be applicable. The Contractor has to confirm theDPR defined DMA boundaries, which have been selected in such a way that one DMA includes 1300 to 4500 service connections. If needed the Contractor has to redefine the DMA boundaries subject to approval by Engineer. The total number of DMAs (30) shall not be changed.

65. Where hydraulically possible, DMAs shall be single feed as proposed in the DPR. In cases where it is advisable (for hydraulic or other reasons) to establish multiple feed DMAs, the same shall be subject to approval by the Engineer.

66. The Contractor shall verify the DMA boundaries specified in the DPR, on the pipelines to be kept in use: locating of existing boundary valves, functioning and tightness checks of existing boundary valves, identification of location for additional boundary valves to be installed, and identification of locations where the pipes will be decommissioned. No consumer connection pipe shall cross a district boundary. If a boundary is in the middle of the road, the main needs to be on the side of the road of the district to which it belongs, or the boundary should be behind the line of houses.

67. The Contractor shall identify customer service connections that have to be re-located from a trunk or distribution main outside the DMA (or in a neighbouring DMA) to a distribution main inside the DMA.

68. In preparation of Sections of DMA Works, the Contractor shall undertake a Consumer Water Connection survey in the concerned DMA. The parameters to be surveyed will at least include: type of Consumer (residential, commercial, governmental, etc.), geo-location, type of structure or dwelling, type of existing water connection. The Consumer Water Connection survey will determine the present status of water supply to each Consumer, whether they have an authorized water connection, illegal water connection or no water connection. The data so collected shall be transferred to GIS and will be used at the time of rehabilitation of existing consumer connections and while releasing new consumer connections in future. The structure of data base and details of the Consumer Connection survey shall be finalized in consultation with the Engineer.

69. In preparation of Sections of DMA Works, the Contractor shall undertake a detailed site condition survey in each DMA. The survey data shall be sufficient to develop a comprehensive Geographical Information

System (GIS) clearly showing the location of underground and over ground water supply assets and all physical features like roads, culverts, drains, nalas, electrical transformers and any other relevant features which would influence installation and maintenance of existing and/or new pipelines. All key elevations with geo-reference shall be captured in the survey and the DMA service area maps are to be prepared in 1:2000 scale.

70. The Contractor shall verify the selected location of the DMA inflow chamber and determine the locations of 3 (three) pressure monitoring stations inside the DMA.

71. A sufficient number of valves for future operation shall be provided for each DMA, in such a way to enable 4 or 5 steps for Step Test to be executed in leak detection campaigns.

72. The Contractor shall construct the inflow chamber (Monitoring Station) including PRV where pressure reduction is required, installation of electromagnetic flow meter in the chamber, construction of above ground instrumentation box, including supply of all required pipes, materials, fittings and equipment, as specified.

73. The Contractor shall construct the 3 pressure monitoring stations including protection encasement.

74. The Contractor shall construct the above ground instrumentation box at strategic locations, including supply of all required materials, fittings and equipment, as specified. However, if suitable place is not available for locating the above ground instrument box, the same may be placed in the Monitoring station chamber.

75. Monitoring stations and meters shall be installed at safe locations onto the sidewalk where possible. Optionally provision for GSM automatic reading can be made. The Contractor shall supply and install a multiple channel data loggers (three pressure and one flow channel), setting up of data transfer to a central server (SMS, GPRS or other remote data transfer); supply and installation of respective software. The Contractor shall ensure that the software is compatible with SCADA and life flow monitoring software and integrate/interface the entire system.

76. The Contractor shall execute all civil, mechanical, installation or plumbing works, including supply of all required pipes, materials, fittings and equipment required for DMA establishment (cutting, capping, reconnecting), as specified.

77. The Contractor shall perform a zero-pressure-test and execute all subsequent investigations and works in case the first zero-pressure-test have failed until the test is successfully performed.

78. The Contractor has to commission the PRV and controller where installed.

79. After the finalization of the construction, the DMA will be commissioned according to the requirements set out in Paragraph 2.2.5 [*Testing and commissioning*] of this Section.

80. The Contractor has to prepare as-built drawings for all Works executed, including those described below, updating and upgrading of GIS data base (shape files) and AutoCAD maps.

81. Transmission mains from the reservoirs to the DMAs has been designed on the peak hourly flows estimated for each DMA supplied by the respective transmission main, which the Contractor shall verify to ensure that flow velocities shall be maintained at less than 2m/sec. The pipe material to be used will be Ductile Iron class K7 as per specifications with Titon gasket joints. The existing transmission mains coming from the ground level reservoirs at Ramshila hill, Brahmyoni hills, Murli hills and at Singhsthan

hill leading to distribution network have to be checked for any leakages by performing pressures tests. Leakages have to be repaired.

2.5.4Pipe laying requirements

82. As per general policy, pipelines installed before 1982 shall be replaced by new pipelines. In case the old pipeline is replaced by a new line at a different location, the discarded pipelines may remain in the ground. The old pipe line shall be left open at both ends (not plugged) to ensure that it is not brought back into service. Pipelines installed after 1982 will be rehabilitated and integrated in the DMA distribution network.

83. Ductile Iron class K7 pipes and HDPE pipes as per detailed specifications will be used for new distribution pipelines and MDPE pipe as per specifications will be used for consumer service pipe lines.

84. The Contractor has to plan and implement its pipe laying works in a detailed and strict manner. The planning has to be coordinated with the Engineer and GMC.The expected date of decommissioning of the existing pipeline and the commissioning of the new pipeline together with the exact location of the old and new pipeline have to be properly documented.

85. Pipe laying and decommissioning of old pipes should be done in the following way:
    - 85.1. Preparation of skilled labor, tools, fittings, dewatering pump, chlorine water solution (10 ppm), hoses, electric source, grinder, welding machine (where required) etc.
    - 85.2. Excavation around the pipe at the pre-determined location of disconnection. It has to be ensured that there is enough working space according to the pipe diameter and the method of disconnection.
    - 85.3. Marking on the pipe, showing the length of the existing pipe to be cut out. The length to be removed piece shall generally be of at least 1.5 meters.
    - 85.4. Cutting the pipe perpendicular to the pipe centre line, using grinder, metal saw or cutter according to the pipe material. Extreme care is to be taken to avoid any dirt or foreign material entering the existing (and remaining) pipe.
    - 85.5. Installation of the required fittings to plug the existing (and remaining) pipe. All new parts are to be submerged completely in the chlorine solution (10 ppm) for at least 15 minutes directly before being installed.
    - 85.6. Installation of thrust block, where required.
    - 85.7. Repair of any possibly damaged protection layer.
    - 85.8. Greasing of bolts and washers and installing of the protective coat.
    - 85.9. After the one week period, described hereafter, all temporary parts are to be removed.
    - 85.10. The excavation shall be left open for about one week. During such time the pipe end has to be observed very frequently in order to ensure immediate recognition of a possible flow of water.
    - 85.11. After the one week period and with the consent of the Engineer and his approval on the appropriate form, the excavation shall be backfilled and the surface brought back to former condition.
    - 85.12. If, at certain points or situations, public safety does not allow forleaving the pipe ends open for the mentioned time, other means shall be found to control the appearance of water at the pipe ends. Possible solutions, to be decided on from case to case could be the following:
        - Plug the end where there are restrictions in a temporary form and leave only one end of the decommissioned pipe open.
        - A pipe connection in a side street can be used for observation.
        - A temporary pipe could be laid to the shoulder of the road to bring the possible water flow to the open.
        - Former house-connections could be prepared for observation, after the pipe ends are plugged temporarily.

2.5.5Testing and commissioning

86. Testing of all materials, equipment and instrumentation shall be done as specified in the Technical Specifications. Installation of all electro-mechanical equipment shall be carried out strictly as per recommendations of the manufacturers. Pre-commissioning and trial run shall be undertaken as specified in Technical Specifications.

87. Supplying for the first time water to the DMA, the Contractor has to check that none of the replaced pipelines is still supplied with water via another pipeline inside or outside the DMA. In case of water flowing from the replaced pipeline, the Contractor has to take all necessary measures to stop the supply of water to the replaced pipeline. The measures at least include:
    87.1. Valves in the immediate vicinity of the decommissioned pipe shall be closed to assess the location of the connection.
    87.2. Start digging out the decommissioned pipe from both ends until the unknown connection is found. The found pipe has to be followed until at least the border of the DMA, in order to isolate the DMA properly.
    87.3. Gather latest information from GMC on valve settings and pump operations. If it becomes evident that the water comes through a connection from outside the district, it will be necessary to examine jointly with the Engineer what changes in pump- or valve settings has been done recently.

88. Testing for commissioning of a completed DMA shall consist of flow measurements at DMA inlet and at all service connections to determine whether the target level of water loss (5%), as specified in Paragraph 3.1 [*Target Performance Standards*], Parameter 6.3 has been met.
    88.1. Simultaneous flow measurements shall be undertaken during a 24-hour period.
    88.2. In case the actual water loss thus measured is more than twice the target level, the Contractor shall propose a work method, to be approved by the Engineer, to determine the cause(s) of water loss.
    88.3. The Contractor shall investigate the cause(s) of water loss accordingly and shall make the necessary rectifications.
    88.4. The testing for commissioning shall then be repeated till the requirements are met.

2.5.6Providing Consumer Service Connections

89. At present there are about 12,500 registered customers in Gaya. The actual number of connections, including many unauthorized ones, is estimated at 23,500.

90. All existing service connections shall be replaced and new connections made. It is expected that, at the end of the contract period, there will be a total of 75,000 service connections.

91. It is expected that not all consumer service connections will have been installed upon completion of the Construction Phase and installation is expected to be continued after the Construction Completion Date. The remaining requirements of installation of service connections will be assessed by the Engineer and the Contractor will be advised to prepare for installation as per anticipated demand till the Contract Completion date.

92. GMC will provide information about the existing authorized consumers. Contractor will use this information for verification of the same and also for identifying unauthorized service connections in existence during the Consumer Connection surveys. The results of such verification of authorized connections and identified unauthorized connections will be submitted to the Engineer and GMC.

93. Existing authorized Connections: Contractor will replace the existing service pipe lines from distribution main pipe lines to the consumer premises with new saddles, ferrule, stop cock, MDPE pipe etc. as per detailed specifications for the authorized consumers from the newly laid distribution

pipe lines under a DMA. The work shall include excavation and cutting of road surface as required, making connection with distribution line under pressure, installation of service pipe and accessories including water meter and refilling the ground and bringing the road surface to original condition. This work will be done DMA wise on completion and commissioning of transmission main feeding the DMA. A water meter with a meter box will be provided at the end of the consumer service pipe line securely inside premises of the Consumer as per detailed specifications.

94. New Service Connections: Contractor will provide new service pipe lines from distribution lines to the consumer premises with new saddles, ferrule, MDPE pipe, stop cock etc. as per detailed specifications for the unauthorized consumers from the newly laid distribution pipe lines under a DMA on receiving approval from GMC. This work will also be done DMA wise on completion and commissioning of transmission main feeding a particular DMA. A water meter with a meter box will be provided at the end of the consumer service pipe line securely inside the premises of the consumer as per detailed specifications. The work shall include excavation and cutting of road surface as required, making connection with distribution line under pressure, installation of service pipe and accessories including water meter and refilling the ground and bringing the road surface to original condition. Contractor will also be responsible for providing new consumer service connections from time to time on receiving approval from GMC for the same. This will be an ongoing work during the entire contract period. The work of new service connections will be done as per detailed specifications within 3 days of receipt of approval from GMC.

95. Services to the Urban Poor: In the case of urban poor areas in the Service Area, the Contractor, in accordance to the approved connections policy, shall undertake provision of shared connections to a maximum number of 5 (five) households where individual connections are either not feasible, due to space constraints, or not sought by the Consumers. Such water connections shall also be provided with same specifications and procedures as mentioned above for regularconsumer connections. However, the water meter and meter box shall be installed at a safe place as agreed with the Consumer and approved by GMC.

96. Public Stand Posts: All permitted public stand posts as per list to be provided by GMC shall be rehabilitated and constructed with sturdy plumbing and good quality stopcocks and shall be provided with a Consumer meter for the purpose of accounting the consumption from the respective tap. The location and operation arrangement of each stand post will be determined in coordination with the future tap users. The Contractor is required to participate in the coordination process.

97. Bulk Water Supply Connections: In the case of bulk water supply connections of sizes equivalent or higher than 25mm dia. to bulk customers such as apartments, housing societies or private layouts within the Service Area, the Contractor shall install a suitably sized, accurate consumption meter. The responsibility for providing saddles, service pipe, water meter and stop cock as per specifications will be of the Contractor including installation of saddle to the distribution main pipe and making connection and installation of water meter.

98. Illegal Connections: The Contractor based on the findings from the Consumer Connection survey, and in accordance to the approved connections policy, shall identify the illegal or un-authorized connections and inform GMC for regularization of the connections. On approval and after payment of prescribed charges by the Consumer, the Contractor shall then rehabilitate the connection with good plumbing material and a Consumer meter. Until approval of regularization by GMC, the Contractor shall prepare and send temporary bills at the prescribed tariffs for such illegal connections and receive payments and undertake disconnection of such Consumers who have not honored the payment obligations.

99. The responsibility of the Contractor will be limited to providing service pipe line up to the water meter, water meter, stopcock and meter box in the consumer premises. All works beyond the water meter will be the responsibility of the Consumer, except for the public stand posts.

100. The Contractor shall set up and operate temporary Customer service points in those DMAs where Works are ongoing and Consumer Service Connections are being provided, to facilitate easy communication with Customers.

2.6Part 2.1 - Operation Services

103. During the Preparation Phase, the Contractor shall prepare an Operations and Maintenance Plan to be approved by the Engineer.

104. Except as provided otherwise in this Contract, the Contractor shall carry out all management, financial and administrative responsibilities required for operating the Gaya Water Supply System in a sustainable manner.

105. The Contractor shall provide ongoing assistance and advice to the GMCon all matters related to the water supply system and the water supply services, and any requests for information, advice or reports from the GMC with respect to the Facilities or the Services.

106. The Contractor shall conduct field inspections and collect data to demonstrate, to the satisfaction of the Engineer, that Performance Standards are being met. For that purpose, the Contractor shall, during the Preparation Phase, install minimum30 pressure loggers in the existing distribution network to monitor continuity in supply.

107. The Contractor's project organization shall comprise of two departments, a construction department responsible for all Works and an operational department responsible for all water supply operations and maintenance and for training. The operational department is to be headed by an operations manager and will comprise of 3 sections: engineering, finance and customer relations, each headed by a manager (technical manager, finance manager and a customer's manager). During the entire Operation Phase the Contractor shall operate and maintain both the existing and newly constructed water supply facilities. Operations and maintenance will include:
    107.1. pumping and transportation of groundwater from existing wells to overhead storage tanks and ground level reservoirs, excluding the wells and transmission mains to be constructed in contract package 2;
    107.2. disinfection of the abstracted groundwater before it is distributed as potable water to the customers;
    107.3. distribution of potable water to the customers in the entire Service Area;
    107.4. managing the existing distribution network and the new district metered areas (DMAs) for distributing water efficiently and minimizing non-revenue water (NRW);
    107.5. reading and calibrating DMA flow meters and consumer meters for verification of demand, supply and system losses;
    107.6. supply of potable water to slums in the Service Areas as directed by the Engineer;
    107.7. management and maintenance of all fire hydrants and cooperate with the local firefighting authorities in all aspects of fire protection;
    107.8. monitoring the quality of water produced and supplied;
    107.9. detecting and monitoring non-revenue connections and consumption.

108. At the request of the GMC and as the need arises, the Contractor shall transport water, by water tanker or other means, to the Customers.For that purpose GMC will hand over the existing water tankers to the Contractor.

109. The Contractor shall regularly inspect the Facilities for safety deficiencies. The Contractor shall ensure that the Facilities are protected from trespassers, vandals or other parties which do not have

the GMC's or Contractor's permission to enter onto the Facilities by providing security for the Facilities. Such security measures must be in place at all times, 24 hours a day, 7 days a week.

110. The Contractor shall maintain all water supply facilities and develop comprehensive maintenance management programs for the facilities; perform day to day repairs to the wells, electro-mechanical equipment, pumping mains, storage reservoirs, transmission mains,distribution systems and consumer service connections, both existing, renovated and new, including the repair of leaks, and carry out emergency repairs of large leaks on trunk mains.

111. The Contractor shall update the Operations and Maintenance Manuals on an ongoing basis to reflect any changes to the Facilities. The Contractor shall provide training to Management and Operations Staff on an on-going basis about the Operations and Maintenance Manuals.

2.6.1Water Quality

The contractor shall supply water with minimum residual chlorine level of 0.20 ppm at the consumer as prescribed by the CPHEEO norms

112. The Contractor shall collect all water samples relative to the system required by Applicable Law and under take physical-chemical and bacteriological analysis and provide and submit in a timely manner all such test results to the Engineer.

113. The Contractor shall propose its water sampling and analysis program as part of the Operations and Maintenance Plan. The program shall allow adequate monitoring of water quality and shall meet the minimum sampling and analysis frequencies as specified below.

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location	**Physical & chemical parameters**	**bacteriological parameters**	**Heavy metals & pesticides**	**residual chlorine**
at all tube wells	monthly	weekly	annually	not applicable
at all Bulk Water supply points				weekly
at all reservoirs	not applicable		-	Daily
at service delivery points, randomly taken from Service Area, two per DMA.	monthly	daily	-	daily

114. The Engineer may require the Contractor to take samples on behalf of GMC for the purpose of allowing the GMC to review the testing and laboratory analysis programs of the Contractor.

115. If the quality of the treated water that the Contractor is supplying from any tube well is not as per the CPHEEO norms, the Contractor shall immediately report to GMC and the Engineer. The Contractor shall in this regard take two spot samples of the treated water extracted from the tube well concerned. These samples are to be taken every day till such date that the Engineer issues a notice to discontinue the sampling. One of the samples shall be analyzed on site for chlorine residual. The other sample, taken in accordance with the sterile requirements for bacterial analysis, shall be analyzed at a laboratory approved by GMC for the test parameters as CPHEEO norms. A representative of GMC and the Engineer shall be present, if they wish to, at the sampling and the sample for bacterial analysis should be divided in two for separate analysis at different approved laboratories, one portion for the Contractor and the other for GMC.
Based on the results of the analyses, GMC may advise the Engineer to instruct the Contractor to discontinue the supply from the concerned tube well.

116. During the Contract Period, i.e. upon completion and commissioning of Project Package 2, GMC will start supplying Bulk Water to specific Supply Points in the water supply system. If the quality of the supplied BulkWater is not as per the CPHEEO norms, the Contractor shall immediately report to GMC and the Engineer. The Contractor shall in this regard take two spot samples of the water supplied to it by GMC. These samples are to be taken every day till such date that the Engineer issues a notice to discontinue the sampling. One of the samples should be analyzed on site for chlorine residual. The other sample, taken in accordance with the sterile requirements for bacterial analysis, shall be analyzedat a laboratory approved by GMC for the test parameters as CPHEEO norms. A representative of GMC and the Engineer shall be present, if they wish to, at the sampling and the sample for bacterial analysis should be divided in two for separate analysis at different approved laboratories, one portion for the Contractor and the other for GMC.
Based on the results of the analyses, GMC may advise the Engineer to instruct the Contractor to temporarily discontinue the supply of Bulk Water.

117. The Contractor shall assist and advise the GMC in all matters related to water and quality including, but not limited to, providing advice and assistance during the GMC's discussions with the regulators and public health officials on water quality matters.

118. The Contractor shall equip and operate, from the Operation Service Commencement Date, at his cost a laboratory in space available at the Dandibagh Water Works compound. The laboratory shall have all testing and support equipment to allow for testing of water samples on all parameters as listed in Section 8 [*Particular Conditions of Contract*], Chapter 5 [*Treated Water Quality*] throughout the duration of the Operation Services at Contractor's cost. The Contractor's obligations include the supply of chemicals and the renewal of apparatus if so required.

2.6.2Billing and Collection

119. The Contractor will, one year from the Operation Service Commencement Date, assumefullresponsibilityforbillingsandcollectionintheServiceAreaforandonbehalfofandasanagentof GMC.

120. **Customer Data Base**. From the Operation Service Commencement Date onwards, the Contractor will develop and operate a Customer Data Base. Initially, all existing authorized Customers will be entered in the database. The database will be expanded gradually with the legalization of unauthorized Customers and the connection of new Customers. Within one year from the Operation Service Commencement Date, the Customer Database will be fully operational and allCustomercontactswithrespecttobillingandprovisionofservicescanbecontrolled.Informationheldshallinc

ludethe Customer name,reference number,mailing address,telephone number and account history information.

121. The Contractor, on behalf of and as agent of GMC, shall carry out all billing and collection of water fees for water supply services supplied and will have to maintain proper customer relations and service functions related to the supply of water services.

122. **Billing and Revenue Collection Systems**.In line with the Bihar Municipal Act (2007, amended 2013) and as per Notice of the Urban Development and Housing Department (UDHD), GoB, number. 3/UIG-Reforms-10/12 – 1250 dated 12-07-2013 (see paragraph 6 [*Supplementary Information*])metered and volumetric pricing will be introduced. To this effect the Contractor shall, based on general policies to be developed and notified by GMC:

122.1. Prepare and monitor the profile of Consumers in the Service Area describing Consumer categories and for each category: number of Consumers, estimated average volume of water consumed per month, and average revenue per month;

122.2. Develop and implement basic procedures for (i) service connections, (ii) preparing, issuing and collecting bill for water service, (iii) how water consumption is estimated for non-metered Consumers, and (iv) dealing with under-payment or non-payment;

122.3. Develop and implement: (i) meter reading procedures and arrangements; (ii) meter reading control, and (iii) efficient and accurate meter reading practices;

122.4. Set up and implement in detail revenue collection procedures, and the facilities for achieving the prescribed level of revenue collection efficiency.

123. The Contractor shall have full responsibility with respect to water billings and collections in each completed and operational DMA. If so requested by GMC, the Contractor shall also bill and collect revenues from authorized Customers connected to the existing distribution network. The Contractor shall collect all amounts due to the GMC related to water supply services. The Contractor shall take all necessary measures to collect outstanding accounts. Fee collection will be through banks, post offices or customer service centres or by other means as may be agreed to by the GMC. The Contractor shall submit to the GMC as part of the Quarterly Reporting a summary and analysis of unpaid accounts to the GMC. Meter reading, billing and collection will be on monthly basis unless otherwise agreed with GMC. Revenues collected will be deposited into the GMC established bank account on the following working day. GMC will remain responsible for all existing water related revenue arrears due as part of property tax.

124. The Employer and GMC either individually or collectively shall have full and unrestricted access to the billing software, all current and historical billing data and the consumer service centers operated and managed by the Contractor upon request. All reasonable requests for data and analysis from the billing data system shall not be unreasonably refused by the Contractor. The Contractor shall submit back up soft copy of the software for billing and accounting being used to the Engineer immediately after its finalization and shall submit all current and historical customer and billing data in soft copy in the first week of April every year as of 31stMarch to the Engineer and GMC.

125. Meter Reading. The Contractor shall manage, meter, and maintain all permanent and portable multi-user public standpipes and private connections in the completed DMAs as following:

125.1. Install and secure meters for customers in accordance with general instructions of the Engineer;

125.2. Read all Customer meters in accordance with the general instructions of the Engineer;

125.3. Enter the meter readings into a hand-held data entry machine (ITRON, PSION or similar) provided by the Contractor.

125.4. Load and register all Customer meter readings in the appropriate computer data base.

125.5. Convert all meter readings to billings to Customers; Bills shall be delivered to each consumer at his house every month and record of its delivery shall be kept by the Contractor.

125.6. Identify meters which have not been read and submit list of the same with reasons to the Engineer;

125.7. Respond to reports of malfunctioning meters from Customers;

125.8. Provide advice and assistance to the GMC in defining the appropriate domestic and non-domestic meters to be used and assist in the development of an updated list of meters approved for domestic and non-domestic use.

125.9. Responsibility for the security of the water meter at customer premises will be of the customer.

126. Meter Management. The Contractor shall develop a monitoring program of random spot-checks to ensure accuracy of the meters and meter reading process, and provide written reports to the Engineer on the monitoring program. The Contractor shall:

126.1. Develop and implement a plan to ensure that all Customer meters are:

- In suitable locations, accurate and read as per meter reading frequency agreed with GMC;
- Problems related to unprotected and unsealed meters are resolved.

126.2. Develop and implement a program to estimate consumption in circumstances where metering problem exist with the prior approval of GMC;

126.3. Provide advice as to methods to improve the meter reading process to ensure greater accuracy and Customer satisfaction.

126.4. Replace meters on the basis of throughput rather than length of service.

127. **Meter Testing.** The Contractor shall test the accuracy of all water meters as required.

127.1. If at any time either Party has reasonable grounds to suspect that any water meter is not accurate in any respect, the discrepancy or suspected discrepancy shall be immediately reported to the other Party in writing along with any evidence in support of such claim and the Contractor shall arrange for the testing of the relevant meter.

127.2. If any of the water meters fails to register or, upon testing, is found not to be within the accuracy standards established by the equipment supplier, or the latest revision of the Bureau of Indian Standards (BIS) or other relevant standard, then for the purposes of this Contract a reasonable adjustment in accordance with generally accepted engineering practices shall be made correcting all measurements, and reflecting, if determinable, the actual period during which any inaccurate measurements were made. If such period cannot be determined it shall be deemed to be equal to one-half of the time from the date of the last test of the meter or measuring equipment, provided that the period covered by the correction does not exceed six months.

127.3. The cost of all testing of the water meters shall be borne by the Contractor except in the case of testing carried out at the instigation of the Employer or Consumer which shall only be borne by the Contractor if such testing reveals the relevant meter to be inaccurate by more than three percent [3%], and otherwise by the Employer or Consumer if within such accuracy standards.

127.4. The Contractor shall provide and operate a water meter test bench for service connection meters up to and including 50mm diameter. The test bench shall have sufficient capacity to

perform the number of tests required under the Contract. The test bench's master meter(s) shall be calibrated at a certified institute once in a year. The test bench shall be set up in space available at the Dandibagh Water Works compound. The establishment and operating cost of the test bench shall be included in the Contractor's Operation fees.

128. **Billing System.** The billing system to be proposed and provided by the Contractor shall meet the following minimum requirements:

- Shall be based on the Customer data base;
- Shall be linked with the water meter reading data base;
- Shall allow for an adequate registration for each Customer of amounts due, amounts paid and amounts in arrears;
- Bills shall at least have the following headings:
    - The name of the GMC
    - Identification of the Customer
    - Month / period of billing
    - For volumetric billing: water consumption, fee rates and amounts:
        - block tariffs, such as: Up to 25m^3 per month;
          From 25 to 50m^3 per month;
          From 50 to 100m^3 per month;
          Above 100m^3 per month;
        - Tariffs for public taps;
          Fixed monthly charges for non-metered service connections:
        - by size of ferrule
    - Sewerage charges;
    - Meter rent charges;
    - Other charges;
    - Applicable levies and taxes;
    - Arrears;
    - Information on payment methods and complaint procedure.
    - Any other requirement as per tariff order issued by GMC from time to time and Any other information as desired by GMC.

Water bills to Customers shall be issued monthly, unless agreed otherwise with the Engineer and GMC.

129. **Revenue Collection System**. The revenue collection system shall support all GMC standard payment methods at the minimum and would be designed to incorporate additions. In addition it will cover the following:

- Preparation and issue of a debtor statement
- Timetable for the issue of reminders and recovery notices shall be established and issued to Customers at the regular intervals based on the GMC's inputs;
- Notice to the Engineer and GMC of continued debtor for the GMC's decision (such as disconnection);
- Additional charges such as disconnection/reconnection fees, damage cost and late payment penalties shall be billed.

The Contractor shall:

- Collect all amounts due to GMC as Revenues related to the Services.
- Through the Contractor's billing offices;
- through banks, electronic transfer;
- by other means as agreed to by GMC;
- Identify and record all outstanding accounts and take all necessary measures to collect outstanding accounts;
- Submit to the Engineer and GMC a summary and analysis of unpaid accounts [every month];
- Manage all aspects of customer services with the Customers.

130. Deposit of Revenues in Revenue Account.

130.1. Three months prior to the Contractor taking over billing and revenue collection, the GMC shall open and maintain a deposit account of a reputable commercial Indian bank to be used solely for the deposits of all Revenues collected by the Contractor. The account shall be in the name of GMC (the "Water Revenue Account").

130.2. With respect to the collection of Revenues under the sole responsibility of the Contractor, the Contractor shall directly deposit all of the collected Revenues, whether in the form of cash, cheques or other form, into the Water Revenue Account on the day of receipt. If it is not possible for the Contractor to deposit Revenues on the day of receipt, the Contractor shall deposit the Revenues on the next banking day.

130.3. At all times, all Revenues collected by the Contractor are the property of the GMC. Until such time as the Contractor deposits the Revenues into the Water Revenue Account, the Revenues shall be in the care and custody of the Contractor and held by the Contractor as agent of the GMC.

130.4. The Contractor shall not deposit nor permit the deposit of the Revenues collected by the Contractor into any account other than the Water Revenue Account notified by GMC.

130.5. The Contractor shall be liable for any loss, theft or destruction of the Revenues collected by the Contractor that occurs prior to the deposit of the Revenues collected by the Contractor into the Water Revenue Account.

130.6. The Contractor shall put in place, prior to the receipt of any of the Revenues, security measures necessary to protect such Revenues from loss, theft or destruction.

130.7. The Contractor shall not set off any amount owing to the Contractor by the Employer under the Contract or otherwise against any of the Revenues collected by the Contractor

2.6.3Customer Services

131. A customer service shall be established. The customer services system will be integrated with the MIS. All enquiries and customer complaints shall be recorded into the system along with resolution mechanisms, ,time of resolution,action taken and feedback procedures.

132. The Contractor shall start providing basic Customer services from the Operation Service Commencement Date. The services shall be gradually expanded with the availability of the necessary tools to be developed by the Contractor, such as the Customer Database, MIS and GIS system and Billing System.

133. Customer services encompass a broad range of activities. The Customer Service Management System shall have an interface with the Customer's premises to ensure requiredperformanceareme t(e.g.waterpressureandflow)andproperresponseareg iventocustomerenqui ries.Thefollowing provisionsshallbeintegratedintothecustomerservicemanagementsystem:

- Advancewarningofplannedsupplyshutoffforrepairsandrenewals
- AdviceCustomersduring emergencies
- BillingCustomers
- Dealingwithbillingqueries
- RecordingandRespondingtoCustomerComplaints

134. The Contractor shall receiveandhandleallcustomerqueriesandcomplaints,including,butnot limited to, queriesandcomplaintsrelated to:

i. Waterbills;
ii. Malfunctioningorinaccuratemeters;
iii. meter readings;
iv. waterquality;
v. waterpressure;

vi. leakageand damaged pipes;
vii. change in meter location;
viii. changesincustomernames;
ix. cancellation ofconnectionbythecustomer

135. Customer Service Centers

The Contractorshall develop and set uppermanent**CustomerServiceCenters** (CSC) that will be used to manage all customers related services. The number of CSC's will increase with the number of DMAs completed and number of service connections provided. Ultimately there shall at least be one CSC for every 15,000 connections including one central CSC to facilitate receiving and resolving consumer requests in the areas of new connections, service deficiencies, resolution of billing disputes, etc.

135.1. The CSCs shall function between 8am to 8pm during all working days and between 8am to 1pm during public holidays including Sundays. The CSC shall have reasonable space and furniture for the Consumers to wait, interact and represent their requirements. During the other off peak times of 8pm to 8am, the Contractor shall have a facility to receive Consumer complaints through telephone, fax, text message, email and any other electronic means.

135.2. The CSC shall be equipped with sufficient human resources, hardware and software to facilitate continuous record of consumer requests, monitoring the resolution, and reporting completion of necessary actions and tasks. There shall be an exclusive desk for servicing the urban poor customers preferably serviced by an efficient lady customer representative.

135.3. The functional requirements of each CSC at least include: one billing reception counter, safe room / space for money receipts, two customer service desks, waiting area for customers, toilet facilities for customers: one for male and one for female, toilet facilities for staff of the CSC: one, be well ventilated

135.4. The cost of establishment of these facilities including furnishings and equipment is provided as a separate item in the BoQ. Cost of operation of the CSC shall be included in the Contractor's Operation fees.

136. The first CSC shall be operational from the Operation Service Commencement Date. Till the date of commissioning of newly constructed CSCs, adequate space will be provided by the Employer.

137. The design of the CSCs will be provided by the Employer.

2.6.4MIS and GIS based utility management software

139. Within six months from the Operation Service Commencement Date, the Contractor, in accordance to the Technical Specifications, shall develop, establish, operate and manage during the remaining Contract Term a comprehensive Management Information system (MIS) in respect of all matters including but not limited to:

139.1. the billings and collection system;

139.2. the consumer services, including data bases relating to complaints and questions, response times and resolution;

139.3. financial management, including accounting systems;

139.4. performance information systems; and

139.5. asset registers from the perspective of maintaining a prudent GIS based and computerized maintenance management system (CMMS) linked to financial and inventory system.

140. The Contractor shall develop a GIS based Utility Management system for multi-users desktop application. The software shall be able to process the complete water supply system online. It should at least be able to handle and process the following information and data:

140.1. Complete data of all assets of water supply system including any future additions under this or any other contracts on GIS.

140.2. Complete data related to Consumers with profile, location of Consumers on the network etc. will also be put on GIS. In case GMC provides data on existing properties, the same will also be incorporated in data base.

140.3. Any other water service related asset data of GMC, which it desires to be included in the GIS data base.

140.4. Generate required MIS reports for management, upgrading, removal, repair, maintenance etc. of assets.

140.5. Editing and updating of the asset data base.

140.6. Hydraulic Modeling of the complete network or part of it to help redesign the system, locate local obstructions in distribution system/ leakages/ areas prone to pollution etc.

140.7. Customer complaint handling. This will involve recording of complaint and tracking the same until it is resolved. It should be capable of generating online queries and reports based on complaint type, response, time, complaint status, pending complaints, reasons for delay in complaint attending etc. This shall include, but not be limited to:

140.8. carrying out all customer service related to new water connections;

140.9. receiving, recording and handling all customer queries and complaints, including, but not limited to, queries and complaints related to,

- water bills;
- malfunctioning or inaccurate meters;
- meter readings;
- water quality;
- water pressure; and
- leakage and damaged pipes;
- receiving, recording and responding to all requests related to,
- a change in meter location;
- a change in Customer names and
- cancellation by Customers.

140.10. Process customer satisfaction surveys;

140.11. Generate reports about water produced, power consumed, power parameters at each TW etc. and provide information on the performance of each pumping set.

140.12. Process complete data with regard to water meters, customer profile, monthly meter readings, consumer bills and all revenue related requirements. It should be capable of generating monthly water bills and handle revenue accounts and generate relevant reports.

140.13. Undertake inventory management to provide information of material and spare parts in stock, received and consumed during the month.

140.14. Undertake processing of data regarding preventive maintenance, break down maintenance or any other repair activity undertaken on electro-mechanical equipment to help in decision making for future course of action.

2.6.5 SCADA

141. Under the Works component of the Contract, bulk flow and pressure measurement devices shall be installed to monitor water distribution at the following locations:

- At 37 production tube wells:
  - Flow at delivery pipe of each well.
- At 17 storage reservoirs (both ground level reservoirs and overhead tanks):
  - Flow in incoming mains;
  - Flow in outgoing mains;
  - Water level.
- At 30 DMAs:
  - Flow at the inlet point(s) of each DMA;

- Pressure at 3 Critical Measuring Points in each DMA.

142. In addition, temporary pressure loggers shall be installed at 30 locations in the existing system. These pressure loggers can subsequently be used as permanent pressure loggers in the DMAs.

143. Most DMAs will have one single inlet point. In case of multiple inlet points, each point shall have a flow meter.There are 4 storage reservoirs that each feed one single DMA. In this situation, the outlet flow meter of the reservoir shall serve as flow meter for the inlet of the DMA.

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144. The Contractor shall design and install a Supervisory Control and Data Acquisition (SCADA) system that shall meet the following objectives:
    144.1. Data acquisition at all bulk flow meters installed at tube wells, storage reservoirs and DMAs, at all water level indicators installed at storage reservoirs and at all pressure loggers installed in completed DMAs.
    144.2. Data acquisition at pressure loggers, temporarily installed in the existing distribution system, is advised.
    144.3. Data acquisition at customer service connections shall not be included
    144.4. A telemetry system to send the acquiring data to a centrally located supervisory system, including adequate security systems.
    144.5. A supervisory (computer) system with adequate back-up facilities to gather the acquiring data, format it for use by a SCADA operator and to feed a Historian (Database Management System).
    144.6. Remote control is not included in the scope of this Contract.
    144.7. The SCADA system shall be expandable to include the bulk flow meters to be installed under Package 2 of the Gaya Water Supply Project.
    144.8. The SCADA system shall allow for upgrading to include remote control in the future.

145. The Contractor shall provide computer hardware and develop software for SCADA data analysis and reporting that shall meet the following objectives:
    145.1. Daily and monthly water production at each individual tube well, at clusters of tube wells (such as at the Dandibagh Water Works Compound) and for all tube wells in the system.
    145.2. Daily and monthly water balance for each water production, transmission and storage sub-system. Each sub-system typically consists of one storage reservoir and multiple wells feeding it.
    145.3. Hourly and daily water balance of each storage reservoir, presenting inflow, water level fluctuations and outflow at each reservoir.
    145.4. Daily and monthly water delivery at each DMA, at clusters of DMAs served from a single reservoir, and total water delivery to all DMAs.
    145.5. Daily and monthly water delivery to the existing distribution network.
    145.6. Hourly pressure logs at Critical Measuring Points in the DMAs.
    145.7. Graphic presentation of all the above.

146. Further requirements are provided in the Technical Specifications Part 2. The Contractor shall submit its proposed SCADA system as part of its Operations and Maintenance Plan for approval by the Engineer.

147. The SCADA system shall be implemented step-wise following the completion of the relevant components of the Works. The SCADA system shall be fully operational at the completion of the entire Works.

148. The Contractor shall train GMC staff in operating the SCADA system and related software.

2.7Part 2.2 –Deputation and Training of GMC Staff

149. Posting of Deputation Personnel to the Contractor
    a. On the Operation Service Commencement Date, or as soon as practicable thereafter, GMC shall, subject to applicable procedures, depute such number of existing employees of the Water Section or GMC to the Contractor for duties in the Service Area as stated in the Anenxure A. The tentative list of Deputation Personnel which would be available to the Contractor at the start of the Operation Services is provided in Annex A of Schedule 2.
    b. Contractor shall be responsible for providing the balance requirement of operation and maintenance personnel as per Operation and Maintenance Plan. Cost of such personnel to be provided by the contractor will be included in the Operation fee.
    c. GMC shall provide the Contractor with details [name, age, qualifications, and terms of employment] of each employee and shall specify the date on which the relevant employee shall report to the Contractor for duty.

150. Employment
    a. **Deputation Personnel**. It is expressly understood between the Parties that the deputed Deputation Personnel shall not have any employment relationship with the Contractor and the Contractor's performance under this Contract does not entitle the Contractor to claim an employer-employee relationship with any of the Deputation Personnel on the expiry or at any time before or after expiry of this Contract. The Contractor shall not by its acts or Omission, provide any direct or indirect indication to the Deputation Personnel regarding their employment or chances of employment directly with the Contractor
    b. **Contractor's Personnel**. It is expressly understood between the Parties that the employees, other than the deputed Deputation Personnel, who are directly employed by the Contractor shall not have any employment relationship with GMC and BUIDCo as the case may be and Contractor's performance under this Contract does not entitle such employees to claim employment or continuation of employment with GMC on expiry or at any time before or after expiry of this Contract. The Contractor should at all times assume full legal and social responsibility towards such employees as employer and shall not by its acts or Omission provide any direct or indirect indication to the employees regarding their employment or chances of employment directly with GMC.

151. Notification to Deputation Personnel

GMC shall issue a letter to each existing employee advising him/her of the proposed deputation of the Deputation Personnel to the Contractor for the purposes of the Contract, and that no changes shall be made to their existing terms of employment by the Corporation due to the deputation.

152. Management of Deputation Personnel
    a. The Contractor shall have day to day line management responsibility for all Deputation Personnel from the date the Deputation Personnel are deputed to it.
    b. GMC shall ensure that the deputed employees directly report to and receive instructions from the Contractor and that the Contractor shall have full powers and responsibility for the management of the employees.

153. Wages of Deputation Personnel
    a. GMC shall be liable to pay the deputed employees' rates of wages as are current at the date the employees are deputed to the Contractor. During the term of the deputation, the employees shall be entitled to wages, increments, bonus, leave with wages, compensation and all other employee benefits and entitlements in the same manner as such employees would have been entitled to in the employment of the GMC in absence of such deputation.
    b. GMC shall maintain any further remuneration and benefits in kind received by the deputed employees at the date the employees are deputed to the Contractor including pension benefits, medical and welfare arrangements, insurances and social security contributions. GMC shall continue to observe conditions of labor in accordance with the governing Laws.
    c. The Contractor shall be responsible for day to today maintenance of attendance, reporting absenteeism if any, work allocation, performance monitoring.

d. GMC shall indemnify the Contractor from any claims of additional payment of emoluments, compensation if any.
e. Nothing contained herein shall oblige GMC, in any manner whatsoever, to pay any wages, increment, bonus, compensation or any other employee benefit or entitlement to the persons directly employed by the Contractor.

154. Labor Laws
The Contractor shall comply with all the relevant labor Laws that apply to Deputation Personnel, and shall duly afford to them all their legal rights. The Contractor shall keep GMC and its Water Section informed and, where necessary, consult with GMC and its Water Section, as the case may be, in respect of any discussions between the deputed Deputation Personnel and the relevant trade unions and any actual or threatened industrial disputes which could prevent or interfere with the proper fulfillment of the Contractor's obligations under this Contract.

155. The success of the Project will depend to a large extent on the ability of the Contractor to train managerial, administrative and technical staff of GMC adequately. The Contractor shall consider training of staff of the GMC as important as the Works and the Operation Services to be supplied.

156. The Contractor shall deploy a Human Resources Development and Training Specialist, to assess the training needs and preparea Training Program describing all on-the-job and class-room training activities to be conducted during the project.

157. The Training Plan shall be finalised and approved within six (6) months from the Commencement Date. Implementation of the Training Program shall be finalised at least six(6) months beforethe Contract Completion Date. Commencing at least 6 months before the Contract Completion Date, theGMCdeputed Managers (Operations Manager, Technical Manager, Financial Manager and Customer's Manager), still operating under the responsibility of the Contractor will take over water supply and maintenance duties.

158. The Training Programme will comprise of both on-the job training as well as class room training.

159. On the job training will be provided to staff that has been seconded for prolonged periods on deputation to the Contractor. If the Contractor is unsatisfied with the performance of a seconded staff member, he will inform GMC. If the unsatisfactory situation continues, the Contractor is allowed to reject further secondment deputation of the staff concerned and the GMCmay nominate replacement.

160. The Contractor will provide hands-on training to the deputed GMCstaff related to all aspects of water supply operations including but not limited to: water production, storage, transmission and distribution, DMA based operation and maintenance, including water meter repair and maintenance, billing, fee collection, leak detection and leakage repair etc.

161. The Contractor will also provide hands-on training tothe deputed GMCstaff in administrative, financial and customer affairs.

162. The Contractor will ascertain that at least 10 controlled performance tests will be conducted per month to assess the results of the on-the job training. The Employer and Auditing Body shall at all times be allowed to witness the controlled performance test.

163. The Contractor will ascertain that at least 6 class room training courses will be conducted per year. The Employer and Auditing Body shall at all times be allowed to witness the class room training courses.

164. The Contractor will develop a Management Information System (MIS) including a Geographical Information System (GIS). The Contractor will supply Water Supply Billing software. Class room training sessions have to be conducted for using the software. The Contractor will organize and pay for the costs of participation of class room trained staff in official certified Indian Examination Institutions.

165. All costs related to training activitiesare included in the Contractor's Operation fees.

166. The staff positions, numbers of staff, tentative training method have been provided in Table 2.6.1.

Table 2.6.1 Tentative staff and training schedule

Position	**All ready employed in Gaya Water Section/ to be transferred from GMC / to be recruited**	**Number of staff to be trained**	**Secondment to which Section of Contractor's Project Organisation / Training method and duration**
Operational Manager	Employed	1	Secondment to Operational Manager for at least 1 year. On the job training + class-room training use of MIS/GIS
Technical Manager	To be recruited	1	Secondment to Technical Section for one year and to the Technical Manager during the last 2 project years. On the job training + class-room training use of MIS/GIS
Financial Manager	To be recruited	1	Secondment to Financial Manager for last 2 project years. On the job training + class-room training use of MIS + Accountancy Software
Customer's Manager	To be recruited	1	Secondment to Customer's Manager for last 2 project years. On the job training + class-room training use of MIS + Accountancy Software
Accountants	To be recruited	2	Secondment to Finance Section during last two project years of the Project. On the job training + class-room training use of Accountancy Software
Accountants Assistants	To be transferred from GMC	2	Posted during the whole project in the Finance Section On the job training + class-room training use of Accountancy Software
Fee Collectors	To be transferred from GMC	10	Posted during the whole project in the Finance Section
Assistant Engineers	Employed	1	Secondment to Technical Section for two years followed by secondment to the Engineering Section for last 2 project years
SCADA operator	To be recruited	1	Posted during the whole project in the Technical Section On the job training + class-room training on use of SCADA
Mechanic	Employed	1	Secondment for full project duration to the Contractor's team. On the job training in Technical Section
Pump operators	Employed	2	Secondment for full project duration to the Contractor's team. On the job training in Technical Section
Pump Khalasi	Employed	8	Secondment for full project duration to the Contractor's team. On the job training in TechnicalSection
Pipeline Khalasi	Employed	13	Secondment for full project duration to the

Position	All ready employed in Gaya Water Section/ to be transferred from GMC / to be recruited	Number of staff to be trained	Secondment to which Section of Contractor's Project Organisation / Training method and duration
			Contractor's team. On the job training in TechnicalSection
Plumbers / Fitters	Employed	2	Secondment for full project duration to the Contractor's team. On the job training in TechnicalSection
Key man	Employed	15	Secondment for full project duration to the Contractor's team. On the job training in TechnicalSection
Watchman	Employed	7	Secondment for full project duration to the Contractor's team. On the job training in TechnicalSection
Typist	Employed	4	Secondment for full project duration to the Contractor's team. On the job training in TechnicalSection
Peon	Employed	1	Secondment for full project duration to the Contractor's team. On the job training in TechnicalSection

2.8Reporting

167. The Contractor shall prepare and submit for approval, plans and periodic reports on those plans, progress of Works and Services, performance standards etc., including exceptional reports on emergencies if any. The reporting requirements are provided in Table 2.8.1. The Contractor shall as part of the Construction Plan, the Operations and Maintenance Plan and the Training Plan, develop the required formats for the periodic reports and also identify any critical reporting requirements in order to enable timely decision making by the Employer.

168. The Contractor shall prepare and submit for approval a Construction Plan, defining and scheduling all Works in Sections 1, 2 and 3. The Construction Plan shall be finalized and approved within onemonth from the Commencement Date. The Construction Plan shall include:
    168.1. The results of the review and verification of the overall proposed water supply system and sub-water supply chains (i.e. tube wells, transmission mains, DMAs);
    168.2. The results of the review and verification of the designs for Sections 1 and 2 prepared by the Employer;
    168.3. The results of the review and verification of DMA boundaries under Section 3;
    168.4. Proposed construction schedule;
    168.5. Cash flow requirements;
    168.6. Format for periodic construction reporting;
    168.7. First Year Detailed Construction Plan and Budget.

169. The Contractor shall prepare and submit for approval an Operations and Maintenance Plan, defining all operational services to be provided under the Contract. The Operations and Maintenance Plan shall be finalized and approved within 6months from the Commencement Date. The Operations and Maintenance Plan shall include:
    169.1. The results of pumping tests and calculated safe yields of the existing tube wells
    169.2. The results of water quality survey sampling
    169.3. The results of consumer connection surveys
    169.4. Emergency Response Plan
    169.5. Standard Operating Procedures for routine operations and emergency responses

169.6. Detailed design of aManagement Information System (MIS), including its architecture, data capture, management and reporting structures, protocols including all related hardware, software, installation and operation and maintenance requirements

169.7. Format for periodic operation and maintenance reporting.

169.8. First year plan Annual Operating Plan, covering all water supply operations (including supply, billing and collection) and scheduled maintenance activities.

170. The Contractor shall prepare and submit for approval a Training Plan, defining all on-the job and class room training of GMC staff to be conducted during the Project. The Training Plan shall be finalized and approved within 6 months from the Commencement Date.

171. Annual Plan and Budget (APB). On an annual basis, the Contractor will prepare an Annual Plan and Budget specifying the budget which is expected to be required for construction works, for operation services as well as the expected water fees that will be collected.

172. With the APB the Contractor will supply all key data of the previous year on operational income and expenditures including kWh electricity consumption – electricity bill; use of chemicals for water treatment / disinfection, number of operational staff with job description segregated over the main O&M functions (pump operation, repair, preventive maintenance, billing and fee collection, customer relations, administration and financial management) and DMA.

173. Operation and Maintenance Manuals shall provide the details of the regular and periodic maintenance of Works, and shall ensure that at all times during the Operation Service Period, the Project Facilities are maintained in a manner that it complies with the Performance Standards. Such Operation and Maintenance Manuals shall include but not be limited to the following:

173.1. Intervals and procedures for the carrying out of inspection of all elements of the Section;

173.2. Criteria to be adopted for deciding maintenance needs;

173.3. Preventive maintenance schedule;

173.4. Intervals at which the Contractor shall carry out periodic maintenance;

173.5. Intervals for major maintenance and the scope thereof;

173.6. Leakage management system;

174. Quarterly Operating Performance Report (QOPR). The QOPR shall include a summary analysis of the quality of water supplied, the number of Consumer connections, the performance of water meters, consumer complaint recording and handling.

175. Annual Operating Performance Report (AOPR). The AOPR shall include the annual accounts,. Requirement of the Allocated Treated Water in the Year concerned;Requirement of the Allocated Power in the Year concerned.

Table 2.8.1 Summary of Periodic Reporting Requirements

Deliverable	First Report	Follow-up Tasks
Construction Plan	Submit preliminary draft of Construction Plan with the detailed time schedule as per GCC Clause 8.3 [*Programme*]. Submit Draft Construction Plan not later than onemonth from the Commencement Date. The Final Construction Plan should be approved not later than onemonth from the Commencement Date	To be updated annually

Deliverable	First Report	Follow-up Tasks
Operations and Maintenance Plan	Submit Draft Operations and Maintenance Plan not later than3 months from the Commencement Date. The Final Operations and Maintenance Plan should be approved not later than 6 months from the Commencement Date	To be updated annually
Training Plan	Submit Draft Training Plan not later than3 months from the Commencement Date. The Final Training Plan should be approved not later than 6 months from the Commencement Date	To be updated annually
Annual Plan and Budget (APB)	Submit Annual Plan and Budget (ABP) not later than 9 months from the Commencement Date.	Submit APB for subsequent years not later than 90 days prior to end of previous year plan
Quarterly Operational Performance Report (QOPR)	Submit Quarterly Performance Report for any and every quarter before 20th day of subsequent quarter commencing from the Commencement Date	Repeat for every quarter including summary analysis of unpaid bills
Annual Operational Performance Report (AOPR)	Submit Annual Performance Report for any and every year before 20th day of subsequent year	Repeat for every year
Operation and Maintenance Manuals	Submit Manual not later than 9 months after Commencement Date	Complete implementation and training within 2 years from the Commencement Date
Management Information Systems (MIS)	Submit report MIS system not later9 months after Commencement Date	Complete implementation and training within 2 years from the Commencement Date
Asset and Facilities Register	Submit Asset and Facilities Register within 9 months from the Commencement Date	Submit updated Asset and Facilities Register before 30th day from the completion of an operating year
Resettlement Plan (RP) and IEE	Update RP and IEE upon change of any design details	To be further updated if any change in detailed designs.

3PERFORMANCE STANDARDS AND MEASURING FRAMEWORK

176. The Contract distinguishes two sets of Performance Standards:
   176.1. Target Performance Standards are performance standards that the Contractor shall aim to achieve in order to provide improved levels of water supply services.
   176.2. Minimum Service Levels are the performance standards the Contractor is required to maintain at all times;

3.1Target Performance Standards

177. The Contractor shall adhere to the following Target Performance Standards. The Target Performance Standards will determine the performance related payments. Compliance to the specified performance standard is a pre-condition for receiving a performance related payment. Each performance related standard has a weightage representing the relative importance of that standard in qualifying for a performance related payment. A draft measuring framework is presented in table 3.1.

178. Section 8, Particular Conditions of Contract, Schedule 3, Contractor's Payments defines three performance parameters in calculation of the Contractor's eligibility for quarterly payment for Operation Services:

- Sub-part 4: **$P_{p\&t}$** is the evaluated quarterly performance in O&M of production,transmission and storage;
- Sub-part 5: **P_{edn}** is the evaluated quarterly performance in O&M of the existing distribution network;
- Sub-part 6: **P_{dma}** is the evaluated quarterly performance in O&M of the renovated and new distribution systems in DMAs.

The quarterly performance indicators will be calculated as follows:

$P_{p\&t}$ = 30% .P41 + 70% .P42

Where:
P41 = Parameter 4.1 Efficiency in water production: Fail = 0; Pass = 1
P4.2= Parameter 4.2Training of seconded GMC staff: Fail = 0; Pass = 1

P_{edn} = 70%.P51 + 30 %.P52

Where:
P51 = Parameter 5.1 six (6) hours supply per day: Fail = 0; Pass = 1
P52 = Parameter 5.2 Client Orientation, Customer complaints handled and resolved: Fail = 0; Pass =1

P_{dma} = 20%.P61 + 20%.P62 + 20%.P63 + 20%.P64+ 20%.P65

Where:
P61 = Parameter 6.1 Reliability – 24/7 water supply in a week: Fail = 0; Pass = 1
P62 = Parameter 6.2 Good Quality Drinking Water: Fail = 0; Pass = 1
P63 = Parameter 6.3 Efficiency Level of Water Losses: Fail = 0; Pass =1
P64 = Parameter 6.4Billing Efficiency: Fail = 0; Pass =1
P65= Parameter 6.5 Client Orientation, Customer complaints handled and resolved: Fail = 0; Pass =1

179. The Contractor shall develop a robust methodology and framework for measurement and monitoring of Performance Standards stipulated under this clause. The Employer with the assistance of the Engineer and Auditing Body, as required, shall verify the same and upon agreement between the Parties the agreed methodology shall form the basis for monitoring the performance of the Contractor.

3.2Minimum Service Levels

180. The Contractor shall at all times meet the Minimum Service Levels as specified in Table 3.2:

181. Not meeting any of the Minimum Service Levels shall be considered as a failure as defined in the Special Conditions of Contract, Part B.2 Sub-Clause 1.9 [*Failure to Achieve Minimum Service Levels*] .

Table 3.1Target Performance Standards

Sub-Part No.	Description	Details
4	**Operation - Water Production, Transmission and Storage**	
	Parameter4.1	Efficiency in water production – Measured water losses between tube wells and DMA water supply point as a percentage of volume of water pumped from the tube wells.
	Target service level	Less than 3% (Pass or Fail)
	Weightage	30%
	Measured by	Contractor: flow meters installed at tube wells, reservoirs and DMA water supply points.
	Monitored by	Engineer
	Applicability	The parameter applies to all sub-water production and supply chains (tube wells, transmission mains, reservoirs and DMA water supply points) of which the Works have been completed and commissioned. For calculation of the achieved service level, measured water losses of each completed sub-supply chain shall be summarized and divided by the sum of water pumped from the relevant wells.
	Allowable exclusions	Till the date that the first sub-supply chain has been completed and commissioned, this parameter shall not apply and the service level will be considered a Pass.
	Parameter 4.2	Training of seconded GMC staff
	Target service level	Number of controlled performance tests of on-the-job-training and number of classroom training sessions conducted as per approved Training Plan (Pass or Fail): such as: Controlled performance tests – at least 30 tests performed each quarter and/or: Training courses conducted – at least 6 per year.
	Weightage	70%
	Measured by	Contractor, in Quarterly Operating Performance Report
	Monitored by	Employer and Auditing Body.
	Allowable exclusions	None
Sub-Part No.	Description	Details

5	**Operation of Existing Water Distribution Network**	
	Parameter 5.1	Reliability – minimum of 6 hours supply in a day. Percentage of daysin a Quarter with parameter compliance.
	Target service level	80 % of days in a Quarter (Pass or Fail)
	Weightage	70 %
	Measured by	Contractor: pressure loggers in existing distribution network. Number of hours in a day when pressure is equal to or more than 2 meters.
	Monitored by	Engineer: an electronic register maintained by the Contractor. The register shall include a detailed data base and summary tables of continuous pressure logs. The pressure log data base shall include: • time and date • identification number and location of pressure logger in existing distribution network • pressure in meters
	Allowable exclusions	Excluded from the review period are: Planned maintenance periods not exceeding 4 hours each; Interruptions due to mains bursts not exceeding 12 hours: Third party causes like power failure and fire fighting.
	Parameter 5.2	Client Orientation – Customer Complaints Handled. Percentage of total number of complaints responded to within 48 hours over the total number of complaints received during the Quarter under review.
	Target service level	60% of complaints responded to within 48 hours during the Quarter under review (Pass or Fail)
	Weightage	30 %
	Measured by	Contractor: register of complaints received, responded and resolved, applies to customers connected to the existing distribution network.
	Monitored by	Engineer: an electronic register maintained by the Contractor, with summary tables including: • date and time of complaint • complaint number • customer name and identification • location of the customer (connected to existing distribution network or to network in completed DMA) • nature of complaint • date and time of response • action taken • time and date of resolution of the complaint
	Allowable exclusions	None
6.1 – 6.30	**Operation – New Distribution Network – Completed DMAs**	
	Parameter 6.1	Reliability - 24/7 water supply in a week. Minimum pressure more than12m throughout the day. Non-compliance during less than 2 hours per day is allowed.

	Target service level	95 % of days in a Quarter (Pass or Fail)
	Weightage	20 %
	Measured by	Contractor: Continuous Pressure Loggers at all Critical Measuring Points (CMPs) assessing how long pressure is less than 12 m during a continuous Quarter of reviewing the 24/7 reliability
	Monitored by	Engineer: An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables pressure logs. The pressure log database shall include: time and date, CMP identification number and recorded average hourly pressures.
	Allowable exclusions	Excluded from the review period are: planned maintenance periods not exceeding 4 hours each; Interruptions due to mains bursts not exceeding 12 hours: Shortage of Bulk Water supplied to Supply Points; Third party causes like power failure and firefighting.
	Parameter 6.2	Reliability – Good Quality Drinking Water. Samples complying with National Bacteriological Quality Standard
	Target service level	All samples shall comply (Pass or Fail)
	Weightage	20 %
	Measured by	Contractor: Samples taken at customer connections as per the agreed sampling protocol during the Quarter under review.
	Monitored by	Engineer: An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables to be maintained as part of the water quality surveillance protocols agreed as part of the Operation and Maintenance Plan. The water quality testing database shall include: time and date, sample location, sample number, details of water quality tests conducted, details of remedial actions taken in case of water quality problem, time and date of resumption of service level.
	Allowable exclusions	None
	Parameter 6.3	Efficiency – Level of Water Losses - Measured total water losses in each DMA as a percentage of the measured inflow over a Quarterly period less than 10~~5~~ %
	Target service level	Less than 10 % (Pass/Fail)
	Weightage	20 %
	Measured by	Contractor: Quarterly readings of flows at DMA inlet points and at customer service connections.
	Monitored by	Engineer: electronic register to be maintained by the Contractor.
	Allowable exclusions	None
Sub-Comp. No.	Description	Details
	Parameter 6.4	Billing Efficiency
	Target service level	Bills issues to 95% of registered Customers (Pass or Fail)
	Weightage	20%

	Measured by	Contractor – billing software
	Monitored by	Engineer
	Allowable exclusions	None
	Parameter 6.5	Client Orientation – Customer Complaints Handled and Resolved. Percentage of total number of complaints responded to within 24 hours and resolved within 72 hours during the period under review over the total number of complaints received during the quarter under review. Resolutions of complaints = 100* (Total number of complaints responded to within 24 hours and resolved in 72 hours during the quarter under review / Total number of complaints received during the quarter under review)
	Target service level	90% of complaints resolved during the quarter under review (Pass or Fail)
	Weightage	20%
	Measured by	Contractor
	Monitored by	Engineer: An electronic registry maintained by the Contractor, the registry shall include detailed database and summary tables including: • Date and time, • Complaint number • Customer name • Customer identification number, • DMA number • Nature of complaint • Date and time at which Customer is provided with response, • Action taken report, • Date and time of resolution of complaint
	Allowable exclusions	Complaints pertaining to 'no water' at times of stoppage of Bulk Water Supply

Table 3.2 Minimum Service Levels

Serial No.		
	During Development period	
	Minimum Supply Hours	Minimum supply of water daily for 4 hours shall be ensured during the development period for distribution network which has not been converted into commissioned .DMA. Contractor shall determine the base line existing supply hours in each zone of Distribution System during the preparatory period of 6 months and will get the same approved from the Engineer. Minimum guaranteed supply hours will be such approved base line supply hours in zones wherever the same is less than 4 hours, during development period.
	Residual Chlorine	Contractor shall ensure availability of 0.2mg/l of chlorine at consumer end after completion of works under section 1 (TW development and refurbishment) 90% of samples shall comply with this requirement.
	Response to Customer complaints	60% of the customer complaints are responded to within 48 hours to be achieved from the date of taking over operarions.
	Power Consumption	Contactor shall ensure that power consumed per unit of water produced at the commencement of Operation's services of existing system shall not be exceeded at any time of operations period. For this purpose Contractor shall determine the existing power consumption per unit of water produced for the whole town by actual measurement during preparatory period of 6 months and will get the same approved from the Engineer. If at any time during operations period the power consumption exceeds the above base level consumption, cost of excess power consumed will be recovered from the operations fee payable to the contractor.
	After completion of Development Period	
1	**Parameter 7**	Reliability - 24/7 water supply in a week. Minimum pressure more than12m throughout the day. Non-compliance during less than **4 hours** per day is allowed
	Minimum Performance Level	90% of days in a Quarter
	Measured by	Contractor: Continuous Pressure Loggers at all Critical Measuring Points (CMPs) assessing how long pressure is less than 12 m between 6 am until 10 pm during a continuous Quarter of reviewing the 24/7 reliability
	Monitored by	Engineer: An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables pressure logs. The pressure log database shall include: time and date, CMP identification number and recorded average hourly pressures.
	Allowable exclusions	Planned maintenance periods not exceeding 4 hours each; Interruptions due to mains bursts not exceeding 12 hours: Shortage of Bulk Water supplied to Supply Points; Third party causes like power failure and fire fighting
	Applicability	The minimum performance level shall apply to completed and commissioned DMAs only.
2	**Parameter 8**	Reliability – Good Quality Drinking Water. Samples complying with National Bacteriological Quality Standard
	Minimum Performance Level	90% of samples shall comply
	Measured by	Contractor: Samples taken at taps as per the agreed sampling protocol during the Quarterunder review

	Monitored by	Engineer: An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables to be maintained as part of the water quality surveillance protocols agreed as part of the Operation and Maintenance Plan. The water quality testing database shall include: time and date, sample location, sample number, details of water quality tests conducted, details of remedial actions taken in case of water quality problem, time and date of resumption of service level
	Applicability	The minimum performance level shall apply to completed and commissioned DMAs only.
3	**Parameter 9**	Client Orientation – Customer Complaints Handled and Resolved. Percentage of total number of complaints responded to within 48 hours during the period under review over the total number of complaints received during the quarterunder review.
	Minimum Performance Level	60% of complaints resolved during the quarter under review
	Measured by	Contractor
	Monitored by	Engineer: An electronic registry maintained by the Contractor, the registry shall include detailed database and summary tables including: Time and date, Complaint number, Consumer name, Consumer identification number, DMA number, Nature of complaint, Time and date at which Consumer is provided with response, Action taken report, Time and date of resolution of complaint
	Applicability	The minimum performance level shall apply to both Customers connected to the existing distribution network and to completed and commissioned DMAs.
	Power Consumption	
	Unit Consumption of Power	Contactor shall ensure that power consumed per unit of water produced based on performance levels of pumping system offered shall not be exceeded at any time of operations period after completion of Development Period. If at any time during operations period the power consumption exceeds the above base level consumption, cost of excess power consumed will be recovered from the operations fee payable to the contractor.

4 SPECIFICATIONS

162. The Contractor shall carry out the Works based on the Technical Specifications included in this section. The Technical Specifications are included in **Volume 2** of the Bidding Document.

163. The Technical Specifications are provided in 2 parts:
Part 1 – Technical Specifications for Works
Part 2 – Technical Specifications for Operations

164. If the specifications for a particular item are not given by the Employer, the Standard Specifications of Bihar Public Works Department (PWD) or Public Health Engineering Department (PHED) shall be followed.

165. All the Materials incorporated in the Works shall be the most suitable for the duty concerned and shall be new and of first class commercial quality, free from imperfections and selected for long life and minimum maintenance. These may be tested according to relevant Indian Standards (IS) or International Standards Organization (ISO) standards in qualified labs and certificates produced to the satisfaction of the Engineer.

166. The objectives of the specifications given are to specify the details pertaining to the designs, drawings, and selection of equipment or product. The equipment or product supplied shall be of high standard of quality and best engineering practices and shall comply with all currently applicable standards, regulations and codes.

167. Except as otherwise specified in these technical specifications, the Indian/International Standards and codes of practice in their latest version shall be adhered to for the design, manufacturing, inspection, calibration, installation, field testing, packing, handling and transportation of products. Should any product be offered conforming to other standards, the equipment or products shall be equal to or superior to those specified and the documentary confirmation shall be submitted for the prior approval of the Employer.

5 DRAWINGS

168. **Employer's Drawings**. The List of drawings is provided as a guideline of the specifications and work in Part 4 of the Bidding Document. All data and information furnished in the drawings by the Employer is given in good faith, but the Employer does not guarantee their completeness and accuracy. The drawings shall be verified by the Contractor who should point out errors or discrepancies to the Engineer.

LIST OF DRAWINGS FOR IMPROVEMENT OF WATER SUPPLY SYSTEM FOR GAYA MUNICIPAL CORPORATION - PACKAGE GA/WS/01		
S NO.	**DRAWING TITLE**	**DRAWING NO.**
	VOLUME-I	
1	MAP SHOWING PROJECT AREA	BUDIP-2/GA/WS/01/01
2	LAYOUT OF EXISTING WATER SUPPLY SYSTEM	BUDIP-2/GA/WS/01/02
2.1	MAP SHOWING EXISTING TUBE WELLS TO BE REFURBISHMENT	BUDIP-2/GA/WS/01/02/1
3	MAP SHOWING WARD/DMA BOUNDARIES	BUDIP-2/GA/WS/01/03
4	MAP SHOWING PROPOSED RISING MAINS AND DISTRIBUTION MAINS	BUDIP-2/GA/WS/01/04
5	KEY PLAN OF EXISTING AND PROPOSED DISTRIBUTION SYSTEM	BUDIP-2/GA/WS/01/05
	VOLUME-II	
6	SLD FOR TYPICAL ELECTRICAL SYSTEM FOR TUBEWELLS	BUDIP-2/GA/WS/01/06
7	SLD OF ELECTRICAL SYSTEM AT DANDIBAGH	BUDIP-2/GA/WS/01/07
8	TYPICAL DRAWING OF PUMP HOUSE	BUDIP-2/GA/WS/01/08
9	GENERAL ARRANGEMENT OF OVER HEAD TANK AT JODA MASJID	BUDIP-2/GA/WS/01/09
10	GENERAL ARRANGEMENT OF OVER HEAD TANK AT BUDVA MAHADEV MANDIR	BUDIP-2/GA/WS/01/10
11	GENERAL ARRANGEMENT OF OVER HEAD TANK AT MASTALIPUR	BUDIP-2/GA/WS/01/11
12	GENERAL ARRANGEMENT OF OVER HEAD TANK AT BUSUNDA MELA	BUDIP-2/GA/WS/01/12
13	GENERAL ARRANGEMENT OF GROUND LEVEL SERVICE RESERVOIR ON RAMSHILA HILL	BUDIP-2/GA/WS/01/13
14	GENERAL ARRANGEMENT OF GROUND LEVEL SERVICE RESERVOIR ON BRAHMYONI HILL	BUDIP-2/GA/WS/01/14
15	GENERAL ARRANGEMENT OF OVER HEAD TANK AT BEHIND DELHA POLICE STATION 1A	BUDIP-2/GA/WS/01/15
16	GENERAL ARRANGEMENT OF OVER HEAD TANK AT BEHIND DELHA POLICE STATION	BUDIP-2/GA/WS/01/16
17	TYPICAL DRAWING OF MONITORING STATION ARRANGEMENT	BUDIP-2/GA/WS/01/17

LIST OF DRAWINGS FOR IMPROVEMENT OF WATER SUPPLY SYSTEM FOR GAYA MUNICIPAL CORPORATION - PACKAGE GA/WS/01		
18	PLAN OF CUSTOMER SERVICE CENTER	BUDIP-2/GA/WS/01/18
19	TYPICAL CROSS SECTIONS OF PIPE LINE TRENCH	BUDIP-2/GA/WS/01/19
20	TYPICAL DRAWING OF AIR RELEASE VALVE CHAMBER	BUDIP-2/GA/WS/01/20
21	TYPICAL DRAWING OF SLUICE VALVE CHAMBER	BUDIP-2/GA/WS/01/21
22	TYPICAL DRAWING OF BUTTERFLY VALVE CHAMBER	BUDIP-2/GA/WS/01/22
23	TYPICAL DRAWING OF SCOUR VALVE CHAMBER	BUDIP-2/GA/WS/01/23
24	TYPICAL DRAWING OF SPECIALS FOR VALVE FITTINGS	BUDIP-2/GA/WS/01/24
25	TYPICAL DRAWING OF FIRE HYDRANTS	BUDIP-2/GA/WS/01/25
26	TYPICAL DRAWING OF HOUSE SERVICE CONNECTION	BUDIP-2/GA/WS/01/26
27	TYPICAL DRAWING OF PUBLIC STAND POST	BUDIP-2/GA/WS/01/27
28	TYPICAL DRAWING OF WATER FLOW & PRESSURE LOGGER CHAMBER	BUDIP-2/GA/WS/01/28
29	DRAWING FOR DETAILS OF THRUST BLOCK	BUDIP-2/GA/WS/01/29
30	TYPICAL DRAWING OF NATIONAL HIGH WAY CROSSING	BUDIP-2/GA/WS/01/30
31	TYPICAL DRAWING OF RAILWAY CROSSING	BUDIP-2/GA/WS/01/31
32	TYPICAL DRAWING OF NALLAH CROSSING	BUDIP-2/GA/WS/01/32

169. **Contractor's Drawings**. All completion drawings provided by the Contractor shall be on standard size sheets, prepared on computer with Auto CAD or equivalent and shall show particulars in a title block located in the lower right hand corner, in addition to the name of the Contractor and equipment manufacturer, date, scale, drawing, revision number (RO for drawings submitted initially, R1, R2 etc., for drawings submitted subsequently). A blank space shall be provided for the Engineer's approval stamp and provision shall be made for details of revisions to be recorded. All drawings submitted by the supplier shall use the English language. All drawings shall be clearly and fully cross-referenced to the other drawings as relevant. The Contractor's attention is drawn to the Technical Specifications for more information on the drawing requirements.

6 SUPPLEMENTARY INFORMATION

170. The following list is not exhaustive but shows some of the main reports that are available as part of the electronic data room (EDR) set up in BUIDCo. Bidders can obtain the information by seeking the necessary permission from the GWSP1 Project Manager (adb.buidcopmu@gmail.com):

a) Detailed Project Report (DPR) – Improvement of the Water Supply System – Package 1 for Gaya April 2014
b) MoU between BUIDCo and GMC
c) UDHD notification of water tariffs

7 PERSONNEL REQUIREMENTS

The table below presents the Contractor's key personnel required, minimum numbers of staff required for each key position, educational and working experience requirements.
Using Form PER-1 and PER-2 in Section 4 [*Bidding Forms*], the Bidder must demonstrate it has key personnel that meet the specified requirements.

Sr. No	Position	Minimum Number Required	Professional requirements		
			Education level	Total Working Experience	Working Experience in similar assignments
General Management and Construction Staff					
1	Project Manager	1	Graduate Engineer with specific experience in implementation of water supply improvements in urban areas.	15 years	10 years
2	Planning and Material Engineer	1	Graduate Engineer	10 years	5 years
3	Quality Assurance Engineer	1	Graduate Engineer	10 years	3 years
4	Construction Supervisors	3	Graduate Engineers in civil/ electrical/ mechanical/ instrumentation engineering	7 years	3 years
5	**Water supply network design Engineer**	1	post Graduate Engineer in civil/hydraulic engineering	7 years	5 years
6	**Structural Engineer**	1	Post Graduate in civil or structural engineering	7 years	3 years
7	Safeguard Officer	1	Graduate with post graduate diploma in social or environmental science	7 years	3 years
Operational Staff					
8	Operational Manager	1	Graduate Engineer with experience in water distribution management system with 5 years on continuous water supply	10 years	5 years
9	Human Resources Development and Training Specialist	1	Graduate with post graduate diploma in HR	7 years	3 years
10	Utility Finance Manager	1	Graduate in finance or business management with experience in managing the utility finances	10 years	5 years
11	Accountant	1	Bachelor in Commerce	7 years	3 years
12	Customer Manager	1	Graduate in business management with experience in customer services of any utility services Specify qualification requirements	7 years	3 years
13	Customer Administration	1	Graduate in any stream	7 years	3 years
14	Technical Manager	1	Graduate Engineer with experience in water distribution management with specific experience in reduction of Non-Revenue Water in urban water supply networks	10 years	5 years

8 EQUIPMENT REQUIREMENTS

Equipment requirements are presented in the Table presented below

Equipment for Part 1 – Works

No.	Equipment Type and Characteristics	Min. Number Required
1	Excavator	4
2	Concrete batch mix plant	1
3	Transit mixers	4
4	Laboratory for testing fineness, consistency, setting time compressive & tensile strength of cement compressive & flexural strength of cement concrete and proof stress, elongation, tensile strength, bending & re-bending of reinforcement steel	1
5	Concrete mixer with hopper	4
6	Road roller (tandem/vibratory)	2
7	Needle/ plate vibrator	10
8	Tipper lorries	10
9	Total station survey equipment set	3
10	Bituminous hot mix plant	1
11	Road layer/ paver equipment	1
12	Hydraulic testing equipment for pipes- set	2
13	Water tanker (with sprinkling arrangements)	2
14	Crane or lifting winch of 2T capacity for lowering and un-lowering of tube wells	2
15	Air compressor of minimum 250psi and 600 cuft/min capacity	1
16	VT or submersible pumps of discharging capacity: • 450 cum/hr at 30m • 200 cum/hr at 30m	1 each

Equipment for Part 2 - Operations

NO.	Equipment Type and Characteristics	Min. Number Required
Equipment for leak detection and repairs		
1	Leak noise correlator	1
2	Leak detection head phones	4
3	Pipe locators	2
4	Air compressor and jack hammer	1
5	Pipe welding sets	3
6	Mobile generator	1
7	Dewatering pumps	2
8	Portable flow meter	2
Equipment for testing of domestic water meters		
9	test bench for domestic water meters up to 50 mm diameter	1

NO.	Equipment Type and Characteristics	Min. Number Required
Equipment for transport for operations		
10	Tata crew cabs or similar	2
11	Cars	2

ANNEX 1 INITIAL ENVIRONMENTAL EXAMINATION AND ENVIRONMENTAL MANAGEMENT PLAN

ANNEX 2 RESETTLEMENT PLAN

Section 7 - General Conditions of Contract

The Conditions of Contract comprise two parts, this Section 7 - General Conditions of Contract (GCC) and the following Section 8 - Particular Conditions of Contract (PCC).

The General Conditions shall be the Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer, Multilateral Development Bank Harmonized Edition, prepared by the Fédération Internationale des Ingénieurs-Conseil, or FIDIC (FIDIC MDB Harmonized Construction Contract) available at FIDIC MDB June 2010. The FIDIC MDB Harmonized Construction Contract is exclusive for the use of ADB Borrowers and their project implementing agencies as provided under the License Agreement dated 9 June 2005, between ADB and FIDIC, and, consequently, no part of this publication may be reproduced, translated, adapted, stored in a retrieval system or communicated, in any form or by any means, whether mechanical, electronic, magnetic, photocopying, recording or otherwise, without prior permission in writing from FIDIC, except by the Employer identified in the contract and only for the exclusive purpose of preparing bidding documents for ADB-financed contracts.

The standard text of the General Conditions chosen must be retained intact to facilitate its reading and interpretation by Bidders and its review by ADB. Any amendments and additions to the GCC, specific to the contract in hand, should be introduced in Section 8 (Particular Conditions of Contract), Part A (Contract Data) and Part B (Special Provisions). Clause numbers in the PCC correspond to those in the GCC. As per GCC 1.5 (Priority of Documents), the PCC takes precedence over the GCC.

Part A (Contract Data) of the PCC includes data to complement the GCC in a manner similar to the way in which the Bid Data Sheet (BDS) complements the Instructions to Bidders (ITB).

Part B (Specific Provisions) is to be used to introduce country- or project-specific provisions, if so required. Whoever drafts the Specific Provisions should be thoroughly familiar with the provisions of the GCC and with any specific requirements of the Contract. Legal advice is recommended when amending provisions or drafting new ones.

The Conditions of Contract have been prepared for an ad measurement (unit price or unit rate) type of contract and cannot be used for other types of contract.

APPENDIX

General Conditions of Dispute Board Agreement

1. Definitions

Each “Dispute Board Agreement” is a tripartite agreement by and between:

(a) the “Employer”;

(b) the “Contractor”; and

(c) the “Member” who is defined in the Dispute Board Agreement as being:

(i) the sole member of the "DB" and, where this is the case, all references to the “Other Members” do not apply, or

(ii) one of the three persons who are jointly called the “DB” (or “dispute board”) and, where this is the case, the other two persons are called the “Other Members.”

The Employer and the Contractor have entered (or intend to enter) into a contract, which is called the "Contract" and is defined in the Dispute Board Agreement, which incorporates this Appendix. In the Dispute Board Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract.

2. General Provisions

Unless otherwise stated in the Dispute Board Agreement, it shall take effect on the latest of the following dates:

(a) the Commencement Date defined in the Contract,

(b) when the Employer, the Contractor, and the Member have each signed the Dispute Board Agreement, or

(c) when the Employer, the Contractor and each of the Other Members (if any) have respectively each signed a dispute board agreement.

This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days’ notice of resignation to the Employer and to the Contractor, and the Dispute Agreement shall terminate upon the expiry of this period.

3. Warranties

The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor, and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members (if any), any fact or circumstance, which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

When appointing the Member, the Employer and the Contractor relied upon the Member’s representations that he/she is

(a) experienced in the work, which the Contractor is to carry out under the Contract;

(b) experienced in the interpretation of contract documentation; and

(c) fluent in the language for communications defined in the Contract.

4. General Obligations of the Member

The Member shall

(a) have no interest, financial or otherwise, in the Employer, the Contractor or Engineer, nor any financial interest in the Contract except for payment under the Dispute Board Agreement;

(b) not previously have been employed as a consultant or otherwise by the Employer, the Contractor, or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Board Agreement;

(c) have disclosed in writing to the Employer, the Contractor, and the Other Members (if any), before entering into the Dispute Board Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer, or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part;

(d) not, for the duration of the Dispute Board Agreement, be employed as a consultant or otherwise by the Employer, the Contractor, or the Engineer, except as may be agreed in writing by the Employer, the Contractor, and the Other Members (if any);

(e) comply with the annexed procedural rules and with Subclause 20.4 of the Conditions of Contract;

(f) not give advice to the Employer, the Contractor, the Employer's Personnel or the Contractor's Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;

(g) not, while a Member, enter into discussions or make any agreement with the Employer, the Contractor, or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Board Agreement;

(h) ensure his/her availability for all site visits and hearings as are necessary;

(i) become conversant with the Contract and with the progress of the Works (and of any other parts of the project of which the Contract forms part) by studying all documents received, which shall be maintained in a current working file;

(j) treat the details of the Contract and all the Dispute Board's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Employer, the Contractor, and the Other Members (if any); and

(k) be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members (if any).

5. General Obligations of the Employer and the Contractor

The Employer, the Contractor, the Employer's Personnel and the Contractor's Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the Dispute Board's activities under the Contract and the Dispute Board Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's Personnel and the Contractor's Personnel

respectively.

The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member, and the Other Members (if any),

(a) be appointed as an arbitrator in any arbitration under the Contract;

(b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or

(c) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member's functions, unless the act or omission is shown to have been in bad faith.

The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.

Whenever the Employer or the Contractor refers a dispute to the Dispute Board under Subclause 20.4 of the Conditions of Contract, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.

6. Payment

The Member shall be paid as follows, in the currency named in the Dispute Board Agreement:

(a) a retainer fee per calendar month, which shall be considered as payment in full for

(i) being available on 28 days' notice for all site visits and hearings;

(ii) becoming and remaining conversant with all project developments and maintaining relevant files;

(iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and

(iv) all services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.

The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Board Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.

With effect from the first day of the calendar month following the month in which the Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by one third. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Board Agreement is otherwise terminated.

(b) a daily fee, which shall be considered as payment in full, for

(i) each day or part of a day up to a maximum of 2 days' travel time in each direction for the journey between the Member's home and the site, or another location of a meeting with the Other Members (if

any);

(ii) each working day on Site visits, hearings, or preparing decisions; and

(iii) each day spent reading submissions in preparation for a hearing.

(c) all reasonable expenses, including necessary travel expenses (air fare in less than first class, hotel and subsistence, and other direct travel expenses) incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, faxes and telexes: a receipt shall be required for each item in excess of five percent (5%) of the daily fee referred to in sub-paragraph (b) of this Clause;

(d) any taxes properly levied in the Country on payments made to the Member (unless a national or permanent resident of the Country) under this Clause 6.

The retainer and daily fees shall be as specified in the Dispute Board Agreement. Unless it specifies otherwise, these fees shall remain fixed for the first 24 calendar months, and shall thereafter be adjusted by agreement between the Employer, the Contractor, and the Member, at each anniversary of the date on which the Dispute Board Agreement became effective.

If the parties fail to agree on the retainer fee or the daily fee, the appointing entity or official named in the Contract Data shall determine the amount of the fees to be used.

The Member shall submit invoices for payment of the monthly retainer and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a site visit or hearing. All invoices shall be accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.

The Contractor shall pay each of the Member's invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Board Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the Dispute Board; and without prejudice to the Employer's rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in Subclause 14.8 of the Conditions of Contract.

If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received, and/or (ii) resign his/her appointment by giving notice under Clause 7.

7. Termination

At any time, (i) the Employer and the Contractor may jointly terminate the Dispute Board Agreement by giving 42 days' notice to the Member; or (ii) the Member may resign as provided for in Clause 2.

If the Member fails to comply with the Dispute Board Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.

If the Employer or the Contractor fails to comply with the Dispute Board Agreement, the Member may, without prejudice to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor, and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

8. Default of the Member

If the Member fails to comply with any of his obligations under Clause 4 (a)-(d) above, he shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members (if any), for proceedings or decisions (if any) of the Dispute Board which are rendered void or ineffective by the said failure to comply.

If the Member fails to comply with any of his obligations under Clause 4 (e) - (k) above, he shall not be entitled to any fees or expenses hereunder from the date and to the extent of the noncompliance and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses already received by the Member, for proceedings or decisions (if any) of the Dispute Board, which are rendered void or ineffective by the said failure to comply.

9. Disputes

Any dispute or claim arising out of or in connection with this Dispute Board Agreement, or the breach, termination, or invalidity thereof, shall be finally settled by institutional arbitration. If no other arbitration institute is agreed, the arbitration shall be conducted under the Rules of Arbitration of the International Chamber of Commerce by one arbitrator appointed in accordance with these Rules of Arbitration.

Procedural Rules

Unless otherwise agreed by the Employer and the Contractor, the Dispute Board shall visit the site at intervals of not more than 140 days, including times of critical construction events, at the request of either the Employer or the Contractor. Unless otherwise agreed by the Employer, the Contractor, and the Dispute Board, the period between consecutive visits shall not be less than 70 days, except as required to convene a hearing as described below.

The timing of and agenda for each site visit shall be as agreed jointly by the Dispute Board, the Employer, and the Contractor, or in the absence of agreement, shall be decided by the Dispute Board. The purpose of site visits is to enable the Dispute Board to become and remain acquainted with the progress of the Works and of any actual or potential problems or claims, and, as far as reasonable, to endeavor to prevent potential problems or claims from becoming disputes.

Site visits shall be attended by the Employer, the Contractor, and the Engineer and shall be coordinated by the Employer in cooperation with the Contractor. The Employer shall ensure the provision of appropriate conference facilities and secretarial and copying services. At the conclusion of each site visit and before leaving the site, the Dispute Board shall prepare a report on its activities during the visit and shall send copies to the Employer and the Contractor.

The Employer and the Contractor shall furnish to the Dispute Board one copy of all documents which the Dispute Board may request, including Contract documents, progress reports, variation instructions, certificates, and other documents pertinent to the performance of the Contract. All communications between the DB and the Employer or the Contractor shall be copied to the other Party. If the Dispute Board comprises three persons, the Employer and the Contractor shall send copies of these requested documents and these communications to each of these persons.

If any dispute is referred to the Dispute Board in accordance with Subclause 20.4 of the Conditions of Contract, the Dispute Board shall proceed in accordance with Subclause 20.4 and these Rules. Subject to the time allowed to give notice of a decision and other relevant factors, the Dispute Board shall

(a) act fairly and impartially as between the Employer and the Contractor, giving each of them a reasonable opportunity of putting his case and responding to the other's case; and

(b) adopt procedures suitable to the dispute, avoiding unnecessary delay or expense.

The Dispute Board may conduct a hearing on the dispute, in which event it will decide on the date and place for the hearing and may request that written documentation and arguments from the Employer and the Contractor be presented to it prior to or at the hearing.

Except as otherwise agreed in writing by the Employer and the Contractor, the Dispute Board shall have power to adopt an inquisitorial procedure, to refuse admission to hearings or audience at hearings to any persons other than representatives of the Employer, the Contractor, and the Engineer, and to proceed in the absence of any party who the Dispute Board is satisfied received notice of the hearing; but shall have discretion to decide whether and to what extent this power may be exercised.

The Employer and the Contractor empower the Dispute Board, among other things, to

(a) establish the procedure to be applied in deciding a dispute;

(b) decide upon the Dispute Board's own jurisdiction, and as to the scope of any dispute referred to it;

(c) conduct any hearing as it thinks fit, not being bound by any rules or procedures other than those contained in the Contract and these Guidelines;

(d) take the initiative in ascertaining the facts and matters required for a decision;

(e) make use of its own specialist knowledge, if any;

(f) decide upon the payment of financing charges in accordance with the Contract;

(g) decide upon any provisional relief such as interim or conservatory measures; and

(h) open up, review and revise any certificate, decision, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute.

The Dispute Board shall not express any opinions during any hearing concerning the merits of any arguments advanced by the Parties. Thereafter, the Dispute Board shall make and give its decision in accordance with Subclause 20.4, or as otherwise agreed by the Employer and the Contractor in writing. If the Dispute Board comprises three persons:

(a) it shall convene in private after a hearing, in order to have discussions and prepare its decision;

(b) it shall endeavour to reach a unanimous decision: if this proves impossible, the applicable decision shall be made by a majority of the Members, who may require the minority Member to prepare a written report for submission to the Employer and the Contractor; and

(c) if a Member fails to attend a meeting or hearing, or to fulfil any required function, the other two Members may nevertheless proceed to make a decision, unless

  (i) either the Employer or the Contractor does not agree that they do so, or

  (ii) the absent Member is the chairman and he/she instructs the other Members to not make a decision.

Section 8 - Particular Conditions of Contract

The following Particular Conditions of Contract (PCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

Part A – Contract Data

Ref. GCC	Subject	Data
1.1.2.2 and 1.3	**Employer's name and address**	State Govtof Bihar, acting through its Urban Development and Housing Department, in turn acting through the Bihar Urban Infrastructure Development Corporation Ltd: XXXXXXXXXXXX Managing Director, Bihar Urban Infrastructure Development Corporation Limited (BUIDCo) **Address:** 3rd floor, Maurya Tower, Mauryalok Complex, Budh Marg, Patna ZIP Code: 800 001, Bihar Country: India Tel: 0612-2210101/02
1.1.2.4 and 1.3	**Engineer's name and address**	The Team Leader or Construction Manager, Design and Supervision Consultants (DSC), Bihar Urban Development Investment Program (BUDIP), C/O Bihar Urban Infrastructure Development Corporation Limited (BUIDCo), #303, Maurya Tower, MauryaLok Complex, Patna – 800001, Bihar, India
1.1.2.11	**Bank's name**	Asian Development Bank (ADB)
1.1.2.12	**Borrower's name**	India
1.1.3.3	**Time for Completion**	Time for Completion of all Services under the Contract, calculated from the Commencement Date, is 60 months, with Time for Completion of Sections as follows: Part 1: Works • Section 1 – 12 months • Section 2 – 21 months • Section 3 – 42 months Part 2: Operations– 54 months
1.1.3.7	**Defects Notification Period**	365 days.
1.1.5.6	**Sections**	Section means the part of Works stipulated in the Employer's Requirement as follows: Section 1 existing water sources; Section 2 pumping transmission mains and reservoirs; Section 3 distribution network and service connections.
1.3	**Electronic transmission systems**	By facsimile or electronic mail along with hard copy

1.4	**Governing Law**	Laws of Republic of India and State of Bihar. In case of conflict, the Laws of India shall prevail
1.4	**Ruling language**	English
1.4	**Language for communications**	English
2.1	**Time for access to the Site**	14 days after Commencement Date
3.1(B)(ii)	**Engineer's Duties and Authority**	Variations resulting in an increase of the Accepted Contract Amount in excess of 2% shall require approval of the Employer.
4.2	**Performance Security**	The performance security will be in the form of an unconditional bank guarantee in the amount(s) of ten percent (10%) of the Contract Amount, (Part 1 and Part 2) denominated in the types and proportions of the currencies in which the Contract Price is payable, or in a freely convertible currency acceptable to the Employer. If the Bank issuing the Performance Security is located outside India, it shall have a correspondent Financial Institution located in the territory of India to make it enforceable. The Employer shall reduce Performance Security to 5% of the Contract Price on completion of Part 1 of the Contract.
6.5	**Normal working hours**	Normal working hours in construction shall be from 09:00 Hours to 18:00 Hours. Operations will be on continuous basis with shift duties of staff
8.7 & 14.15(b)	**Delay damages for the Works**	Part 1: 0.05% of the Contract Price for Part 1 [*Works*] per day, in the currencies and proportions in which the Contract Price is payable.
8.7	**Maximum amount of delay damages**	10% of the Contract Price.
13.5.(b)(ii)	**Provisional Sums**	10%
13.8	**Adjustments for Changes in Cost**	The Contract "shall be adjustable"during Contract Execution for both Part 1 (Works) and Part 2 (Operations)as per Schedule 2 [*Contractor's Payments*] of this PCC.
14.1	**The Contract Price**	The following sentence under Clause 14.1 shall not apply: *"Notwithstanding the provisions of sub-paragraph (b), Contractor's Equipment, including essential spare parts therefor, imported by the Contractor for the sole purpose of executing the Contract shall be exempt from the payment of import duties and taxes upon importation."*

14.2	**Total advance payment**	10% of the Accepted Contract Amount payable in two instalments in the currencies and proportions in which the Accepted Contract Amount is payable. The first instalment of 5% will be released immediately after signing the Contract. The second instalment of 5% will be released upon the approval of the Construction Plan And submission of utilization certificate for first instalment which will be duly certified by Engineer. The advance payment taken by contractor is to be deposited in a seprate dedicated project Bank account to be opened at Gaya. The bank guarantee shall be issued by a reputable bank located in the Employer's country, which may include scheduled banks or nationalized banks, or by a foreign reputable bank outside the Employer's country, through a correspondent bank located in the Employer's country, which may include banks in Patna, to make it enforceable
14.2(b)	**Repayment amortization of advance payment**	12.5%
14.3	**Interim payment**	The payment received by contractor is to be deposited in a Separate dedicated project Bank account to be opened at Gaya
14.3(c)	**Percentage of Retention**	Percentage of retention for Part 1 – Works:5%of the Accepted Contract Amount of Part 1. Percentage of retention for Part 2 – Operations: 5% of the Accepted Contract Amount of Part 2, as specified in PCC Part B2 Clause 3.4[*Maintenance Retention Fund*].
14.3(c)	**Limit of Retention Money**	5% of the Contract Amount to be applied for Part1 and 2 separately
14.5(b)(i)	**Plant and Materials**	If Subclause 14.5 applies: Not Applicable Plant and Materials for payment when shipped en route to the Site _____[list].
14.5(c)(i)		Plant and Materials for payment when delivered to the Site _____[list].
14.6	**Minimum Amount of Interim Payment Certificates**	For IPC Part 1 – Works: Not applicable For IPC Part 2 – Operations: not applicable.
15.6	**Corrupt and Fraudulent Practices**	The following sentence shall apply: [For contracts financed by the Asian Development Bank] For the purposes of this Subclause: ADB's Anticorruption Policy requires Borrowers (including beneficiaries of ADB-financed

		activity), as well as Contractors, Subcontractors, manufacturers, and Consultants under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB (a) defines, for the purposes of this provision, the terms set forth below as follows: (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 ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents or records in connection with an Office of Anticorruption and Integrity (OAI) 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 ADB's contractual rights of audit or access to information; and (vi) "integrity violation" is any act which violates ADB's Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB's Anticorruption Policy, including failure

		to adhere to the highest ethical standard. (b) 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) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation; and (d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate[1] in ADB-financed, administered, or supported activities or to benefit from an ADB-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.
17.6	**Maximum total liability of the Contractor to the Employer**	The product of1.1 times the Accepted Contract Amount,
18.1	**Periods for submission of insurance:** **a. evidence of insurance.** **b. relevant policies**	 14days 28days

[1] Whether as a Contractor, Nominated Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document). A Nominated Subcontractor is one which either has been: (i) included by the Bidder in its prequalification application or bid because it brings specific and critical experience and know-how that are accounted for in the evaluation of the bidder's prequalification application or the bid, or (ii) appointed by the Employer.

18.2(d)	**Maximum amount of deductibles for insurance of the Employer's risks**	*None*
18.3	**Minimum amount of third party insurance**	INR 5.00 million with no limit on the number of occurrence
20.2	**Date by which the Dispute Board shall be appointed**	28 days after the Commencement
20.2	**The Dispute Board shall be comprised of**	"Three Members"
20.2	**List of potential Dispute Board sole members**	*None*
20.3	**Appointment (if not agreed) to be made by**	*[*President, Institution of Engineers (India), India
20.6 (a)	**International arbitration shall be administered by**	International arbitration shall be: (i) Administered by: Singapore International Arbitration Centre If no institution has been specified, then the Singapore International Arbitration Centre (SIAC) shall be the institution to administer the arbitration. (ii) Conducted in accordance with the rules of: SIAC. If no rules have been specified, then SIAC rules shall apply.
20.6	**Place of Arbitration**	*[***"For national firms:** New Delhi, India **or** Patna, Bihar, India **For international firms:** Singapore"

Summary of Sections of the Works

Section Name/Description (Subclause 1.1.5.6)	Time for Completion (Subclause 1.1.3.3)	Damages for Delay (Subclause 8.7)
Section 1 existing water sources	12 months	0.05% of the Contract Price for Part 1 [*Works*] per day with maximum amount of delay damages of 10% of contract price.
Section 2 pumping transmission mains and reservoirs	21 months	
Section 3 distribution network and service connections	42 months	

Part B1 – Specific Provisions (Works)

The Particular Conditions of Contract (PCC) Part B1 - Specific Provisions (Works), is to amend or for additions to the General Conditions of Contract (GCC-Section 7). This Part B1 contains specific provisions of the GCC in general and specific to the Works component of the Contract.
Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

1.	**General Provisions**
1.1 Definitions	
1.1.3.2.1 Contract Completion Date	*Add the following definition:* "The Contract Completion Date is the date after 60 months from the Commencement Date stated in the Contract."
1.1.4.4 Final Payment Certificate	The Final Payment Certificate as defined in this GCC Sub-Clause 1.1.4.4 shall be meant for the Works part of the Contract only and shall be read as **Final Payment Certificate - Works**.
1.1.4.5 Final Statement	The Final Statement as defined in this GCC Sub-Clause 1.1.4.5 shall be meant for the Works part of the Contract only and shall be read as **Final Statement- Works**.
1.5 Priority of Documents	*Replace the Sub-Clause 1.5 as under:-* The Documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority if the documents shall be in accordance with the following sequence: (a) the Contract Agreement (if any): (b) the Letter of Acceptance: (c) the Letter of Tender which includes the Price Bid; (d) the Particular Conditions Part A – Contract Data; (e) the Particular Conditions Part B 1– Specific Provisions (for Construction) (f) the Particular Conditions Part B 2– Specific Provisions (for Operations) (g) the General Conditions; (h) the Employer's Requirements (i) The Specifications; (j) the Drawings; (k) the Initial Environmental Examination and Environmental Management Plan; (l) the Resettlement Plan; and (m) the Schedules. If an ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction.
1.6 Contract Agreement	*Replace the phrase* "The Contract Agreement shall be based upon the form annexed to the Particular Conditions" *by the following;* "The Contract Agreement shall be based upon the form as given in Section 9, Contract Forms"
3.	**The Engineer**
3.6 Management meetings	*Insert this Sub-Clause at the end of Clause 3:* The Engineer or the Contractor's Representative may require the other to attend a management meeting in order to review the progress with reference to the agreed program and arrangements for future work. The Engineer shall record the business of management meetings and supply copies of the record to those attending the meeting and to the Employer. In the record, responsibilities for any actions to be taken shall be in accordance with the Contract.
4.	**The Contractor**
4.3 Contractor's	If the Contractor's Representative is not fluent in the English and other local languages, the

Representative	Contractor shall make a competent interpreter available during all working hours.
4.7: Setting Out	*Add the following at the end of GCC Sub-Clause 4.7:* The Contractor shall comply with (i) the measures and requirements set forth in the Resettlement Plan (RP) attached hereto as Annex 2 of Section 6 [*Employer's Requirements*] to the extent it concerns impacts on affected people during construction; and (ii) any corrective or preventive actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor implementation of the RP. Except for the cost of compensation entitlements of affected persons, the Contractor shall allocate a budget for compliance with these measures, requirements and actions.
4.12: unforeseeable Physical Conditions	*Please add the following at the end of GCC Sub-Clause 4.12:* In addition to notice of any unforeseeable physical conditions, the Contractor shall provide the Engineer with a written notice of any unanticipated environmental or resettlement risks or impacts that arise during construction, implementation or operation of the Works, which were not considered in the Initial Environmental Examination (IEE), the Environmental Management Plan (EMP) or the Resettlement Plan (RP) attached hereto as Annex 1 and Annex 2 of Section 6 [*Employer's Requirements*].
4.16: Transport of Goods	*Please add the following at the end of GCC Sub-Clause 4.16:* The Contractor shall adequately record the condition of roads, agricultural land and other infrastructure prior to the start of transporting materials, goods and equipment, and construction.
4.18: Protection of the Environment	*Insert the following at the end of Sub-Clause 4.18:* The Contractor shall comply with all applicable national, provincial, and local environmental laws and regulations. The Contractor shall (a) establish an operational system for managing environmental impacts, (b) carry out all of the monitoring and mitigation measures set forth in the IEE and the EMP attached hereto as Annex 1 and Annex 2 of Section 6 [*Employer's Requirements*], and (c) allocate the budget required to ensure that such measures are carried out. The Contractor shall submit quarterly reports on the carrying out of such measures to the Employer. More particularly, the Contractor shall comply with (i) the measures and requirements set forth in the IEE and the EMP; and (ii) any corrective or preventative actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor implementation of the IEE and the EMP. The Contractor shall allocate a budget for compliance with these measures, requirements and actions.
4.21: Progress reports	*Insert the following at the end of Sub-Clause 4.21 of the GCC* monitoring of the obligations in Sub-Clauses 4.7, 4.18, 6.4, 6.7, 6.20 and 6.21.
4.23 Contractor's Operations on Site	*Insert following at end the end of the last para:* The Contractor shall not place or create or permit any Subcontractor or other person claiming through or under the Contractor to create or place any encumbrance or security interest over all or any part of Project or Site or the Project Facilities, or on any rights of the Contractor therein or under this Contract, save and except as expressly set forth in this Contract. The Contractor shall not undertake or permit any form of commercial advertising, display or hoarding at any place on the Site. The Contractor shall be responsible for the co-ordination and proper execution of the Works, including co-ordination with other contractors and organizations to the extent specified in the Employer's Requirements.
6.	**Staff and Labour**

6.7 Health and Safety	*Insert the following at the end of the Sub-Clause:* The Contractor shall conduct health and safety programs for workers employed under the project, and shall include information on the risk of sexually transmitted diseases, including HIV/AIDS in such a program.
6.21 Prohibition of Harmful Child Labour	*Replace it with following para in Sub-Clause 6.21:* The Contractor shall not employ any child to perform any work, including work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or shall be harmful to the child's health or physical, mental, spiritual, moral or social development. "Child" means a child below the statutory minimum age specified under applicable national, provincial or local law of India.
6.25 Resettlement	*Add Sub-Clause 6.25 as under:* The Contractor shall comply with (i) the measures and requirements set forth in the updated and approved Resettlement Plan (RP), to the extent it concerns impacts on affected people during construction; and (ii) any corrective or preventive actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor implementation of the RP. The Contractor shall allocate a budget for compliance with these measures, requirements and actions.
10	**Employer's Taking Over**
10.1 Taking Over of the Works and Sections	*Insert the following at the beginning of GCC Sub-Clause 10.1:* The Taking-Over Certificate as mentioned in this entire Clause 10 [*Employer's Taking Over*] shall mean a provisional taking-over of the Works by the Employer. a) The Contractor shall remain responsible for operation and maintenance of the Works, as part of his responsibility of operations of all Facilities of the water supply system, till the Contract Completion Date. b) Final taking-over of the Works by the Employer shall be at the Contract Completion Date as defined in PCC Part B2, Sub-Clause 1.7 [*Completion of Operations*] and subject to the issue of an Operation Completion Certificate as defined in PCC Part B2, Sub-Clause 1.6 [*Operation Completion Certificate*].
11	**Defects Liability**
11.9 Performance Certificate	*Replace the first paragraph with the following text (changes in bold):* Performance of the Contractor's obligations **under the Works part of the contract** shall not be considered to have been completed until the Engineer has issued the Performance Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract **part 1 - Works**. **The Performance Certificate shall not apply to the part 2 – Operations.**
12. Measurement and Evaluation	
12.3 Evaluation	In item "(a)": • substitute "0.25%" in "(ii)" with "2%"; and • Delete "(iii)".
13. Variations and Adjustments	
13.8 Adjustment for changes in Cost	See the Table of Adjustment DataSection4B [*Bidding Forms - Price*].
14. Contract Price and Payment	
14.1 The Contract Price	*Add sub clause (e) as under;* (e)"Employer will issue essentiality certificate (EC) under GOI notification No. 108/95 and

	84/97 which will assist the Contractor to obtain any lawful exemptions from payment of Excise Duty or Import Duty on Plant and Materials, which are to be incorporated as a part of the Permanent Works. The Certificate will be issued in the format indicated in Section 9, which certifies the estimated quantities of materials that are to be incorporated into the permanent works. The responsibility for obtaining any such exemptions from Competent Authority will remain with the supplier/Contractor and the BUIDCo shall not in any way be responsible for admissibility of the claims or eligibility of the supplier/ Contractor. The contractor will ensure that the total quantity of material for which the essentiality certificate has been issued is procured within the validity period of the EC as no new EC in lieu of the any expired EC will be issued." *The last sentence under Clause 14.1 shall <u>not</u> apply:* "Notwithstanding the provisions of sub-paragraph (b), Contractor's Equipment, including essential spare parts therefore, imported by the Contractor for the sole purpose of executing the Contract shall be exempt from the payment of import duties and taxes upon importation."
14.3 Application for Interim Payment Certificates	*Replace paragraph (a) with the following:* (a) The estimated contract value of the Works executed, the Contractor's Documents produced, and **Operations provided** up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below; *Add, after subparagraph (c), the following subparagraph (cc)* (cc) An amount withheld on the estimated value of Works executed in DMAs by applying the percentage of withholding stated in the Contract Data to the value of DMA Works excluding service connections;
14.11 Application for Final Payment Certificate	*Insert the following at the beginning of GCC Sub-Clause 14.11:* This Sub-Clause applies to application for final payment for the Works part of the Contract. Application for final payment for Operations is arranged in SCC Part B2, Sub-Clause 3.1 [*Application for Final Payment Certificate Operations*].
14.12 Discharge	*Insert the following at the beginning of GCC Sub-Clause 14.12:* The discharge referred in this Sub-Clause applies to the Works part of the Contract. Discharge for Operations is arranged in SCC Part B2, Sub-Clause 3.2 [*DischargeofOperations*].
14.13 Issue of Final Payment Certificate	*Insert the following at the beginning of GCC Sub-Clause 14.13:* This Sub-Clause applies to issue of a final payment certificate for the part 1 - Works of the Contract. The issue of a final payment certificate for Operations is arranged in SCC Part B2, Sub-Clause 3.3 [*Issue of Final Payment Certificate Operations*].
15	**Termination by Employer**
15.6 Corrupt and Fraudulent Practices	*Replace the entire text by:* ADB's Anticorruption Policy requires that Borrowers (including beneficiaries of ADB-financed activity), as well as Contractors, Subcontractors, manufacturers, and Consultants under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB: (e) defines, for the purposes of this provision, the terms set forth below as follows: (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) "integrity violation" means any act, as defined under ADB's Integrity Principles and Guidelines, which violates ADB's Anticorruption Policy including corrupt, fraudulent, coercive, or collusive practice, abuse, and obstructive practice; (vi) "obstructive practice" means (a) deliberately destroying, falsifying, altering or concealing of evidence material to an ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents or records in connection with an OAI 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 ADB's contractual rights of audit or access to information. (f) 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; (g) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation; and (h) will sanction impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate in ADB-financed, or administered or supported activities or to benefit from an ADB-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.
18	**Insurance**
18.3 Insurance against injury to Persons and Damage to Property.	*Add at the end of the first sentence:* or occurring before before the issuance of Performance Certificate" is for the Works and "before the issuance of Operations Completion Certificate" applies to Operations as defined in this Section 8, Part B2 (Operations) Sub-clause1.6 [*Operations Completion Certificate*].
18.4 Insurance of Contractor's Personnel	*Replace the last paragraph as follows:* The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works **and during the Operations Period**. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

Part B2 – Specific Provisions(Operations)

The Particular Conditions of Contract (PCC) Part B2 - Specific Provisions (Operations), is to amend or for additions to the General Conditions of Contract (GCC-Section 7). This Part B2 contains provisions of the GCC specific to the Operations component of the Contract.
The Clause numbers in this PCC Part B2 do notrefer to the Clause numbers in the GCC.
Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

1	Operations
1.1. Definitions	The following definitions apply specifically to this PCC Part B2.
1.1.1	"**Auditing Body**" means the body appointed by the Employer to conduct the Compliance Audit in accordance with PCC Part B2, Sub-Clause 2.1 [*Auditing Body*].
1.1.2	"**Final Payment Certificate – Operations**" means the payment certificate issued under PCC Part B2 Sub-Clause 3.3 [*Issue of Final Payment Certificate – Operations*].
1.1.3	"**Final Statement – Operations**" means the statement defined in PCC Part B2, Sub-Clause 3.1 [*Application for Final Payment Certificate – Operations*].
1.1.4	"**Operations**" means the Operation and Maintenance Services and Training the Contractor shall provide as per Employer's Requirements.
1.1.5	**"Operations and Maintenance Plan**" means the plan the contractor shall prepare and follow for the operations and maintenance of assets created under the project and the existing assets intended to be operated and maintained as per the Employer's Requirements.
1.1.6	"**Operations Completion Certificate**" means the certificate issued under PCC Part B2, Sub-Clause 1.6 [*Operation Completion Certificate*].
1.1.7	"**Operations Commencement Date**" means the date defined in PCC Part B2, Sub-Clause 1.3 [*Commencement of Operations*].
1.1.8	"**Operations Period**" is the period between the Operations Commencement Date and Contract Completion Date.
1.1.9	**"Training Plan**" means the means the plan the contractor shall prepare and follow for providing training to the GMC's designated staff deployed under the Contract.
1.2 General Requirements	The Contractor shall comply with the Requirements for Operations as provided for in the Contract and any revisions thereof which are agreed during the Contract Period. The Contractor shall follow the requirements of the Operation and Maintenance Plan, the Training Plan and the operation and maintenance manuals. No significant alteration to such arrangements and methods shall be made without the prior approval of the Engineer. During the Operations Period, the Contractor shall be responsible for ensuring that the Works remain fit for the purposes for which they are intended. The operators and maintenance personnel, including Plant operators, shall have the appropriate experience and qualifications to perform the Operations. The names, with details of their qualifications and experience, of the Contractor's key personnel in Operations shall be submitted to the Employer for approval, and no such personnel shall be engaged prior to

	receiving such approval.
1.3 Operations Commencement Date	Unless otherwise stated in the Employer's Requirements, the commencement of the Operations Commencement Date shall be from the date on which the GMC hands over operations of the entire water supply system to the Contractor, which shall be after approval of the Operation and Maintenance Plan by the Engineer. Should the approval of the Operation and Maintenance Plan, or any Notice attached or pertaining thereto, contain requirements or restrictions over and above those in the Contract, the Contractor shall comply with such requirements and/or restrictions, and, to the extent that the Contractor suffers additional Cost as a result, and subject to the provisions of GCC Sub-Clause 20.1 [*Contractor's Claims*], he shall be reimbursed by the Employer unless such requirements or restrictions were as a result of a fault or failure of the Contractor. The Contractor shall thereafter carry out the Operations in accordance with PCC Part B2, Sub-Clause 1.2 [*General Requirements*].
1.4 Legal Authorization for Operating the Facility	Together with the Letter of Acceptance, the Employer shall issue the required legal authorization to the Contractor to operate the Facilities to enable the Contractor to fulfill its obligations during the Operations Period. The authorization to operate shall automatically come into force on the Operations Commencement Date. The authorization to operate shall extend to all Facilities in the Service Area for the purposes of carrying out the Works and Operations as set out in the Contract. The authorization to operate granted shall not operate nor be deemed to operate as a tenement or a demise of the Facilities or any part thereof. The Contractor shall not have or be entitled to any estate right, title, or interest in the Facilities. The authorization to Operatewill immediately terminate upon the termination of this Contract for whatever reason.
1.5 Training	The Contractor shall carry out Training of Employer's Personnel in the operation and maintenance of the Facilities to the extent specified in the Employer's Requirements, and as per the Training Plan to be approved by the Engineer. The program and scheduling of the training shall be agreed with the Employer, and the Contractor shall provide experienced training staff, all training materials and training facilities as stated in the Employer's Requirements. The Employer shall be responsible for nominating and selecting suitable personnel that will receive training.
1.6 Operations Completion Certificate	Performance of the Contractor’s obligations in respect of the Operations under the Contract shall not be considered to have been completed until the Operations Completion Certificate has been signed by the Engineer and issued to the Contractor, stating the date on which the Contractor completed his obligations in respect of the Operations. The Engineer shall, subject to PCC part B2, Sub-Clause 1.7 [*Completion of Operations*] issue the Operations Completion Certificate to the Contractor, with a copy to the Employer, within 21 days from the Contract Completion Date. No extension of the Operations shall be allowed except by written agreement between the parties. Only the Operations Completion Certificate shall be deemed to constitute the Employer’s acceptance of the Contractor’s completion of his obligations under the Contract in respect of the Operations. Following the issue of the Operation Completion Certificate the Employer shall be fully responsible for the care, safety, operation, servicing and maintenance of the facilities. However, the issue of the Operation Completion Certificate does not relieve the Contractor

	from its obligations under GCC Clause 11 [*Defects Liability*].
1.7 Completion of Operations	Unless the Parties have mutually agreed to prolong the Operations Period, the obligation of the Contractor to operate and maintain the Facilities shall cease at the Contract Completion Date.
1.8 Ownership of Output and Revenue	During the Operations, any production output and revenue shall be the exclusive property of the Employer.
1.9 Failure to Reach Minimum Service Levels	In the event that the Contractor fails to achieve the Minimum Service Levels required under the Contract as specified in Section 6 [*Employer's Requirements*] Chapter 3.2 [*Minimum Service Levels*] the parties shall jointly establish the cause of such failure. a. If the cause of the failure lies with the Employer or any of his servants or agents, then, after consultation with the Contractor, the Employer shall give written instruction to the Contractor of the measures which the Employer requires the Contractor to take. If the Contractor suffers any additional cost as a result of the failure or the measures instructed by the Employer, the Employer, subject to GCC Sub-Clause 3.5 [*Determinations*] and GCC Sub-Clause 20.1 [*Contractor's Claims*], shall pay the Contractor the additional cost plus overhead and profit as per SCC part A [*Contract Data*] Sub-Clause 13.5 (b) (ii). b. If the cause of the failure lies with the Contractor then, after due consultation with the Employer, the Contractor shall take all steps necessary to achieve the Minimum Service Levels required under the Contract. If the Employer suffers any loss as a result of the failure of the measures taken by the Contractor, the Contractor, subject to GCC Sub-Clause 3.5 [*Determinations*], shall pay the Employer operation performance damages of a sum equal to 0.5% of the Contract Price for Part 2 - Operations per day, in the currencies and proportions in which the Contract Price is payable. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of operation performance damages of 20% of the Contract price Part 2 (Operations). If the failure continues for a period of more than 84 days and the Contractor is unable to achieve the Minimum Service Levels, the Employer may either: a. give Notice to the Contractor to continue with the Operations at a reduced level of compensation determined in accordance with GCC Sub-Clause 3.5 [*Determinations*]; or, b. give Notice to the Contractor not less than 56 days prior to terminating the Contract, in accordance with GCC Sub-Clause 15.2 [*Termination by Employer*]. In such an event, the Employer shall be free to continue the Operations himself or by others.
2	**Compliance Audit**
2.1 Auditing Body	"Auditing Body (AB)" means the body appointed by the Employer to conduct the Impartial Compliance Audit as under: An independent body to be appointed by Employer, under a separate contract, will act as the Auditing Body to carry out an impartial audit during the Operations Period according to the terms of reference as per Schedule 2 [*Terms of Reference of Auditing Body*] of this Section-8 [*Particular Conditions of Contract*]. The AB shall commence its duties on the Contract Commencement Date.

	The purpose of AB will be to audit and monitor the performance of both the Employer and the Contractor during the Operations Period in compliance with the Employer's Requirements. Both Parties shall cooperate with the AB and give due regard to the matters raised in each report issued by the AB.
3.	**Payment for Operations**
3.1 Application for Final Payment Certificate - Operations	Within 56 days after receiving the Operation Completion Certificate, the Contractor shall submit to the Engineer one original and five copies of the Final Statement Operations with supporting documents showing: (a) the value of all work done in respect of the Operations, and (b) any further sums which the Contractor considers to be due to him under the part 2 - Operations of the Contract. Together with the Final Statement - Operations, the Contractor shall submit a written discharge accordingly to the requirements of PCC part B 2, Sub-Clause 3.2 [*Discharge of Operations*].
3.2 Discharge of Operations	When submitting the Final Statement - Operations, the Contractor shall submit a written discharge of operations which confirms that the total of the Final Statement - Operations represents full and final settlement of all monies due to the Contractor under or in connection with part 2 - Operations of the Contract. This discharge may state that it becomes effective only after payment due under the Final Payment Certificate - Operations has been made.
3.3 Issue of Final Payment Certificate - Operations	Within 28 days of receiving the Final Statement - Operations and the written discharge of Operations from the Contractor in accordance with PCC part B 2, Sub-Clause 3.1 [*Application for Final Payment Certificate - Operations*] and PCC part B 2, Sub-Clause 3.2 [*Discharge of Operations*] respectively, the Engineer shall issue to the Employer, with a copy to the Contractor, the Final Payment Certificate - Operations stating: (a) the amount which is finally due for the Operations; and (b) after giving credit to the Employer for all amounts previously paid by the Employer and all sums to which the Employer is entitled in respect of part 2 - Operations of the Contract, the balance (if any) due from the Employer to the Contractor or from the Contractor to the Employer, as the case may be. If the Engineer disagrees with or cannot verify any part of the Final Statement Operations, the Engineer and the Contractor shall attempt to agree on such matters, and the Engineer shall issue a Final Payment Certificate Operations for the agreed amount. If the parties cannot agree on such matters, the Engineer shall issue a Final Payment Certificate - Operations for the amount which he considers to be due to the Contractor. If the Contractor is dissatisfied with amount certified, he may refer the matter to the DAB for a decision in accordance with GCC, Clause 20.4 [*Obtaining Dispute Board's Decision*]. Upon receipt of the Final Payment Certificate - Operations, the Employer shall pay the Contractor in accordance with the provisions of GCC, Sub-Clause 14.7 [*Payment*].
3.4 Maintenance Retention Fund	During the Operations Period a Maintenance Retention Fund shall be created by deducting five percent (5%) from the value of each interim payment for Operations, determined by the Engineer in accordance with GCC Sub-Clause 14.6 [*Issue of Interim Payment Certificate*], due to the Contractor, commencing with the first payment following the Operations Commencement Date and continuing until the last Interim Payment Certificate is issued or until the amount in the Maintenance Retention Fund has reached the value of 5% of the Contract Amount part 2- Operations, whichever is the earlier. A Maintenance Retention Guarantee is not allowed.

	If the maintenance required under the Contract has not been carried out, the Employer may, after giving due notice to the Contractor, carry out such maintenance himself and apply any amounts standing to the credit of the Maintenance Retention Fund in so doing. Where such amounts are insufficient to cover the Employer's whole costs of carrying out the maintenance, the unrecovered costs shall be set off against any payment due to the Contractor under the Contract, or the extent that no such payment is due, shall become a debt due by the Contractor to the Employer. Following the issue of the Operation Completion Certificate under PCC part B 2, Sub Clause1.5 [*Operation Completion Certificate*] all funds remaining in the Maintenance Retention Fund shall be included in the Final Payment Certificate - Operations and paid to the Contractor with the final payment for Operations.
4 Risk and Responsibility	Subject to the provisions of GCC Sub-Clause 17.6 [*Limitation of Liability*], the risks allocated to the Contractor and for which the Contractor is liable during the Operations Period are. a) "all risks resulting or arising from the material o rworkmanship of the Plant and Material supplied or construction ofthe Works or the materials used therein, notwithstanding any testing carried out by or witnessed by the Employer or theEngineer during the Works period; and b) all risks resulting or arising from the operation and maintenance of the Facilities including the Permanent Works and the care of the Works excluding the Employer's Risks listed under GCC Sub-Clause 17.3 [*Employer's Risks*].
5 Security at Facilities during Operations	During Operations Period the Contractor shall be responsible for the security at all Facilities handed over to him. a) the Contractor shall be responsible for keeping unauthorized persons away from Facilities; b) authorized persons shall be limited to the Contractor's Personnel and the Employer's Personnel, and to any other personnel notified by the Contractor by the Employer or the Engineer.

Part C – Schedules

Schedule 1: Contractor's Payments

1. Payments to the Contractor comprise of two parts:

a. Payments for Works (Part 1); and
b. Payments for Operations (Part 2).

2. Payments for Works (Part 1)

2.1. Payment for Plant and Materials delivered to the Site

With reference to GCC Clause 14.5 [*Plant and Materials intended for the Works*], subparagraph (c), the Plant and Materials to which the clause applies are:

- Pumping Machinery (Bill No 13 and 14)
- Pipes (Bill No 4 and 5)
- Water meters (Bill No 4, 5 and 8)

The Contractor will supply Plant and Materials as per the approved annual Construction Plan.
At any time:

- payment against supply of pipes will not be more than 30 Km of un-laid length;
- payment against supply of domestic water meters will not be more than 5000 Nos of uninstalled meters.

2.2. Payment for distribution networks in DMAs

As stipulated in the Section 8 [*Particular Conditions of Contract*], Part B1, Clause 14.3 [*Application for Interim Payment Certificates*], subparagraph (cc), an amount will be withheld, calculated by applying the percentage of withholding stated in the Contract Data to the value of all Works in each DMA, except service connections.

Upon proof of decommissioning of existing and rejected pipelines, and after performance testing and commissioning of a DMA, this amount withheld for that DMA will be released to the Contractor.

2.3. While making running payment for the Works carried out by the Contractor, the cost of works will be calculated based on BOQ unit rates. Adjustments, if any, shall be in accordance with Sub-Clause 3.5 [*Determinations*]

3. Price Adjustment for Payment for Works (Part 1)

All Contractor Payments for Construction works under this Contract shall be governed in accordance to the adjustments for change in costs as provided in GCC Sub-Clause 13.8

3.1 The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, No adjustment is to be applied to work valued on the basis of cost or current prices. The formulae shall be of the following general type:

$$P_n = a + b\,(L_n/L_o) + c\,(C_n/C_o) + d\,(B_n/B_o) + e(S_n/S_o) + f(H_n/H_o) + g(PM_n/PM_0) + h(O_n/O_0)$$

where

"P_n" is the adjustment multiplier to be applied to the estimated contract value in the currency of payment of the work carried out in period "n", this period shall be in quarter;
"a" is a fixed coefficient stated in the table of adjustment data, representing a non-adjustable component of the multiplier
"b", "c", "d", "e', **"f', "g" and "h",** are fixed coefficients, stated in the table of adjustment data, representing the estimated proportion of various adjustable components of the multiplier;
"L_n", "C_n", "B_n", "S_n", H_n", "PM_n", and **"O_n"** are the current cost indices or reference price for period "n" expressed in the currency of payment, each of which is applicable to the tabulated cost element on 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and
"L_o", "C_o", "B_o", "S_o", "H_o", "PM_o", and "O_o" are the base cost indices or reference price, expressed in the currency of payment, each of which is applicable to the tabulated cost element on the Base Date.

3.2 The cost indices or reference prices stated in Table A.1, table of adjustment data, provided in Section 4, shall be used. If their source is in doubt, it shall be determined by the Engineer. For this purpose, reference shall be made to the values of the indices at stated dates for the purposes of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.

Tables of Adjustment Data for Payment of Works

Table A.1 - Local Currency:

Index Code	Index Description	Source of Index	Base Value and Date	Amount	Weighting
	Nonadjustable	—	—	—	0.15
a	Labour Component (L):	Consumer Price Index for labour issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.25
b	Cement (C)	Wholesale Price Index for grey cement (OPC) issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.05
c	Bitumen (B)	Wholesale Price Index for Bitumen issued by Mathura Refinery	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.05
d	Ferrous Metal (S)	Wholesale Price Index for ferrous metal issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.10
e	HDPE/ PVC Pipes and specials (H)	Wholesale Price Index for resin (HDPE / PVC pipes) issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.20
f	Pumps and Machinery and Spares (PM)	Wholesale Price Index for Construction machinery issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.05
g	Other Materials (O)	Wholesale Price Index for all commodities issued by Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of work	0.15
				Total	**1.00**

Table B.1 - Foreign Currency

Name of Currency:

If the Bidder wishes to quote in more than one foreign currency, this table should be repeated for each foreign currency.

Index Code	Index Description	Source of Index	Base Value and Date	Bidder's Currency in Type/Amount	Equivalent in FC1	Bidder's Proposed Weighting
	Nonadjustable	—	—	—		A: 0.15 B: _____ C: _____ D: _____ E: _____
				Total		**1.00**

3.3 In cases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the central bank of the country, of this relevant currency on the above date for which the index is required to be applicable.

3.4 Until such time as each current cost index is available, the Engineer shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.

3.5 If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices thereafter shall be made using either (i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favorable to the Employer.

3.6 The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variations.

4. Payments for Operations (Part 2)

The Contractor shall be eligible for payment for Operations from the Operations Commencement Date. The payment for Operations shall comprise the following but are not limited to:

a. Wages for Contractor personnel;
b. Cost of chemicals utilized in the treatment of water;
c. Consumables for preventive and corrective maintenance of all existing and new infrastructure assets being operated and maintained by the Contractor;
d. All cost of repairs undertaken as part of preventive and corrective maintenance;
e. All cost related to administration, management, monitoring, reporting, accounts, regulatory compliance and incidental charges if any; and
f. All cost related to training of Deputation Personnel and GMC staff.
g. It is expressly clarified that all charges related to electricity payments, raw water extraction cost if any, shall be paid directly by the Employer, in accordance with provisions of the Contract.

4.1. The payments for Operations provided under this Clause shall comprise the following three distinct components:

(A) Component 1 Operation and maintenance of the water production and transmission (production tube wells, transmission mains and reservoirs);

(B) Component 2 Operation and maintenance of the existing distribution network where DMA works have not yet been carried out and commissioned;

(C) Component 3 Operation and maintenance of renovated and new distribution systems in DMAs where works have been commissioned.

4.2. Methodology for assessing the eligible payments for Operations.

4.2.1. The payments for Operations are paid on a calendar quarterly basis and are governed by the following formulae:

A. Operation and maintenance of the water production and transmission:

$MP_{p\&t} = R_{p\&t} . (80\% + 20\% . P_{p\&t})$

In which
$MP_{p\&t}$ = the quarterly payment for O&M of production and transmission;
$R_{p\&t}$ = the price rate per quarter as per priced bill of quantities;
$P_{p\&t}$ = the evaluated quarterly performance in O&M of production and transmission as determined by the compliance to the performance standards as specified in Section 6, [*Employer's Requirements*], Clause 3*[Performance Standards and Measuring Framework*].

B. Operation and maintenance of the existing distribution network:

MPedn = (N-X) .Redn . (80% + 20% .Pedn)
In which
MPedn = the quarterly payment for O&M of existing distribution network;
N = the total number of DMAs to be developed;
X = the cumulative number of DMAs that have been commissioned in that quarter;
Redn = the price rate per quarter as per priced bill of quantities;
Pedn = the evaluated quarterly performance in O&M of existing distribution networkas determined by the compliance to the performance standards as specified in Section 6, [Employer's Requirements], Clause 3[Performance Standards and Measuring

A. *Framework*].**Operation and maintenance of renovated and new distribution systems in DMAs:**

$MP_{dma}= X .R_{dma} . (80\% + 20\% .P_{dma})$

In which:
MP_{dma} = the quarterly payment for O&M of the renovated and new distribution systems in DMAs;
X = the cumulative number of DMAs that have been commissioned and are in operation in that quarter;
R_{dma} = the price rate per completed DMA per quarter as per priced bill of quantities;
P_{dma} = the evaluated quarterly performance in O&M of the renovated and new distribution systems in DMAs as determined by the compliance to the performance standards as

specified in Section 6[*Employer's Requirements*], Clause 3*[Performance Standards and Measuring Framework*].

5. Price Adjustment of payments for Operations:

All Contractor Payments shall be governed in accordance to the adjustments for change in costs as provided in GCC Sub-Clause 13.8.

5.1 The adjustment to be applied to the amount payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of cost or current prices. The formulae shall be of the following general type:

$P_n = a + b (L_n/L_o) + c (M_n/N_o)$

In which,

"P_n" is the adjustment multiplier to be applied to the estimated contract value in the currency of payment of the work carried out in period "n", this period shall be in quarter;

"a" is a fixed coefficient of value 0.15, representing a non-adjustable component of the multiplier

"b", fixed coefficients, of value 0.70, representing the estimated proportion of labour, adjustable components of the multiplier;

"c", fixed coefficients, of value 0.15, representing the estimated proportion of material, adjustable components of the multiplier;

"L_n"and**"M_n"**is the current cost index or reference price for period "n" expressed in the currency of payment, applicable to the tabulated cost element on 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

"L_o"and **"M_o",** is the base cost index or reference price, expressed in the currency of payment, applicable to the tabulated cost element on the Base Date.

5.2 Table of Adjustment Data is available in Section 4BThe cost indices or reference prices stated in Tables A1 and A.2 (Local Currency: Works and Operations) and B1 and B.2 (Foreign Currency: Works and Operations), table of adjustment data, provided in Section 4B [*Bidding Forms – Price*], shall be used.

5.3 In cases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the central bank of the country, of this relevant currency on the above date for which the index is required to be applicable.

5.4 Until such time as each current cost index is available, the Engineer shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.

5.5 If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices thereafter shall be made using either (i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favorable to the Employer.

5.6 The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variations.

Schedule 2: Terms of Reference of Auditing Body

1. Appointment: An independent body to be appointed by the Employer, under a separate contract, will act as an Auditing Body (AB) for the purpose of monitoring and evaluation of the performance of the Operations component of the Contract during the Contract Period. The AB shall play a positive and independent role in discharging its functions, thereby facilitating smooth implementation of the Contract.
2. Obligations: The key obligations of the AB shall be:
    a) Review the Operations and Maintenance Plan and the Training Plan furnished by the Contractor and suggest modifications if any required especially with reference to the baseline service levels and investments proposed by the Contractor to achieve the Performance Standards stipulated in Clause 3, Section 6 [*Employer's Requirements*];
    b) Monitor the performance in Operations of the Contractor and verify the periodical reports furnished by the Contractor in terms of achievement or maintenance of the Performance Standards;
    c) Provide independent advise to the Parties under this Contract in times of requirement of revision or rebasing of the Performance Standards required due to the following events:
        i. Substantial change in baseline parameters;
        ii. Discovery of unknown assets and additional infrastructure which can be put to use resulting in revision of Mandatory Works;
        iii. Failure of the performance of any of the existing assets other than the new or replaced assets implemented by the Contractor necessitating major maintenance by way of replacement;
    d) Undertake periodical, at least six quarterly, on-site verification of the Operations and provide recommendations on any issues which require immediate attention and action from any of the Parties.
3. Reports: The AB shall prepare and submit to the Employer and GMC the following reports:
    a) Six Quarterly report on validation of performance of Contractor with reference to the achievement or maintenance of the Performance Standards;
    b) Issues, if any, with regard to operation, maintenance and management along with the details of the action taken for the resolution of the same;
4. Duration: The appointment of AB will be from start of Operation, maintenance and management to the entire duration of the Contract.

Section 9 - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

Table of Forms

Letter of Acceptance

[on letterhead paper of the employer]

. . . . . *date*. . . . . .

To: . . . . . *name and address of the contractor* . . . . . .

Subject: . . . . . *Notification of Award Contract No.* . . . . . .

This is to notify you that your Bid dated . . . . *date* . . . . for execution of the . . . . . *.name of the contract and identification number, as given in the Bid Data Sheet* . . . . . for the Accepted Contract Amount of the equivalent of . . . . . *.amount in figures and words and name of currency* . . . . . ., as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the Performance Security Form included in Section 9 (Contract Forms) of the Bidding Document.

Authorized Signature: .....

Name and Title of Signatory: .....

Name of Agency: .....

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made the . . . . . .day of . . . . . ., ..., between . . . . . *name of the employer. . . . .* (hereinafter "the Employer"), of the one part, and . . . . . *name of the contractor. . . .* .(hereinafter "the Contractor"), of the other part:

WHEREAS the Employer desires that the Works known as . . . . . *name of the contract. . . . .*should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein.

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

   (a) the Contract Agreement,

   (b) the Letter of Acceptance,

   (c) the Letter of Technical Bid,

   (d) the Letter of Price Bid,

   (e) the Variation Nos . . . . . *insert variation numbers if any. . . . .*

   (f) the Particular Conditions of Contract – Part A,

   (g) the Particular Conditions of Contract – Part B,

   (h) the List of Eligible Countries that was specified in Section 5 of the Bidding Document

   (i) the General Conditions of Contract,

   (j) the Specifications,

   (k) the Drawings,

   (l) the completed Schedules including Bill of Quantities, and

   (m) any other documents shall be added here.[1]

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 . . . . . *name of the borrowing country. . . . .*on the day, month and year indicated above.

[1] Tables of Adjustment Data may be added if the contract provides for price adjustment (see GCC 13.8).

Signed by	Signed by.....
for and on behalf of the Employer in the presence of	for and on behalf the Contractor in the presence of
Witness, Name, Signature, Address, Date	Witness, Name, Signature, Address, Date

Performance Security

..... *Bank's name, and address of issuing branch or office*[1].....

Beneficiary: ..... *Name and address of employer* .....

Date: .....

Performance Guarantee No.: .....

We have been informed that . . . . . *name of the contractor. . . . .* (hereinafter called "the Contractor") has entered into Contract No. . . . . *reference number of the contract. . . . .* dated . . . . . .with you, for the execution of . . . . . *name of contract and brief description of corks. . . . .* (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 . . . . . *name of the bank. . . . .* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of . . . . . *name of the currency and amount in figures*[2] . . . . . (. . . . . *amount in words. . . . .*) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the . . . . . Day of . . . . . , ... [3], 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, ICC Publication No. 458 (*or ICC Publication No. 758 as applicable*), except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.[4]

. . . . . .

Seal of Bank and Signature(s)

Note to Bidder

If the institution issuing the performance security is located outside the country of the employer, it shall have a correspondent financial institution located in the country of the employer to make it enforceable.

1 All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

2 The guarantor shall insert an amount representing the percentage of the contract price specified in the contract and denominated either in the currency(ies) of the contract or a freely convertible currency acceptable to the employer.

3 Insert the date 28 days after the expected completion date. The employer should note that in the event of an extension of the time for completion of the contract, the employer would need to request an extension of this guarantee from the guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [6 months][1 year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

4 Or the same or similar to this clause specified in the Uniform Rules for Demand Guarantees, ICC Publication No. 758 where applicable.

Advance Payment Security

..... *Bank's name, and address of issuing branch or office*[1] .....

Beneficiary: ..... *Name and address of employer* .....

Date: .....

Advance Payment Guarantee No.: .....

We have been informed that . . . . . *name of the contractor. . . . .* (hereinafter called "the Contractor") has entered into Contract No. . . . . *reference number of the contract. . . . .* dated . . . . . .with you, for the execution of . . . . . *name of contract and brief description of works. . . . .* (hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum . . . . . *name of the currency and amount in figures*[2]*. . . . . .* (. . . . . *amount in words. . . . .*) is to be made against an advance payment guarantee.

At the request of the Contractor, we . . . . . *name of the bank. . . . .* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of . . . . . *name of the currency and amount in figures*[3]*. . . . . .* (. . . . . *amount in words. . . . .*) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number . . . . . *Contractor's account number. . . . .* at . . . . . *name and address of the bank. . . . .* .

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 ninety percent (90%) of the Contract Price has been certified for payment, or on the . . . day of . . . . . , ... [4], whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

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1 All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

2 The guarantor shall insert an amount representing the amount of the advance payment denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the employer.

3 Footnote 2.

4 Insert the expected expiration date of the time for completion. The employer should note that in the event of an extension of the time for completion of the contract, the employer would need to request an extension of this guarantee from the guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [6 months][1 year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 (*or ICC Publication No. 758 as applicable*).

. . . . . .

Seal of Bank and Signature(s)

Note to Bidder

If the institution issuing the advance payment security is located outside the country of the employer, it shall have a correspond nt financial institution located in the country of the employer to make it enforceable.

Draft Format for Excise/Customs Duty Exemption

TO WHOMSOEVER IT MAY CONCERN

ESSENTIALITY CERTIFICATE

This is to certify that the work for _____ (Package No. & Name of work) _____ has been awarded to M/s _____(Name of Contractor) _____ _____amounting to INR_____(Amount of Contract Agreement)_____only by the Bihar Urban Infrastructure Development Corporation (BUIDCo) under Bihar Urban Development Investment Program (BUDIP) and that this project has duly been approved by Government of India. The Project (BUDIP) is funded by Asian Development Bank (ADB) under loan agreement No. XXXX-IND between Government of India and Asian Development Bank and being executed by the Urban Development and Housing Department, Government of Bihar.

It is certified that M/S_____ (Name of Contractor)_____ for the above project requires to purchase _____(Quantity of material and name of material)_____under work _____(Package No. & Name of work) _____.

It is further certified that the aforesaid material is required for the execution of the said project.

Countersigned

Managing Director
BUIDCo

Secretary, Finance
Government of Bihar